The Highway Safety Desk Book

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Introduction

This book is intended for police leaders. After all, that's what you are—whether you call yourselves commanders, administrators, executives, or supervisors, you are, first and foremost, leaders. It is intended as a quick and practical compendium of information to assist you in asserting your leadership in one of policing's most important functions, Police Traffic Services.

It has been fashionable for some time to emblazon the fenders and doors of police vehicles with slogans calling attention to such aspects of law enforcement as SERVICE and PROTECTION. But how often do we, as leaders, stop and think about how to serve and protect most effectively?

Over 188 million motor vehicles and more than 170 million licensed drivers travel over two trillion miles a year on our streets and highways. Hazardous materials in sufficient quantities to blow a small country off the map if stored, transported, or handled improperly pass our doorsteps every day. More people are killed in crashes on our streets and highways in a single year than in the nation's last major war.

In today's mobile society the motor vehicle is the primary tool used by criminals to reach the scene of the crime, and to elude the police. Carjacking, motor vehicle theft, drive-by shootings, drug deals, burglaries, and armed robberies—all involve the use of a motor vehicle.

Our entire nation is, indeed, a “nation on wheels,” and traffic backups and delays during rush hour result in millions of dollars and hundreds of thousands of productive hours lost to the economy and unnecessary environmental pollution each year. As drivers, citizens are more likely to have direct contact with a police officer than in any other aspect of their lives, and those contacts, both pleasant and unpleasant, shape the community's view of the police, one by one.

All of this adds up to the fact that few areas exist in law enforcement that affect the quality of life for our citizens as significantly as in the rendering of quality police traffic services.

The authors of this deskbook, all members or special consultants to the IACP Advisory Committee on Highway Safety, know from firsthand experience just how confusing and difficult are the problems you face. The many acronyms that describe various traffic safety programs, the myriad of federal agencies that set standards in this area, and the need to devise new and effective means of stretching your limited patrol resources—all add up to headaches for the new police leader as well as the veteran.

We hope that this deskbook, in looseleaf form to facilitate periodic updating, will provide you with a ready

source of ideas and information as you go about your duties.

Contents

Part Thirteen: Pedestrian Safety

Part Fourteen: Public Information and Education Programs

Part Fifteen: Uniformity, Reciprocity and Federal Programs

Part Sixteen: Legal Issues

PART ONE:

Traffic Safety Systems and Terminology

Common Abbreviations and Acronyms Used in Traffic Law Enforcement

The following are some of the more prevalent acronyms used in traffic law enforcement, and their meanings:

ALR/ALS: Administrative License Revocation or Administrative License Suspension. This is referred to in the context of a state statute that permits a police officer to seize a license of a driver who refuses an alcohol test or tests over the legal alcohol limit. The driver is given a temporary license and scheduled for a prompt administrative hearing before the state driver licensing agency. ALR/ALS does not replace criminal court action for driving while intoxicated. The purpose of ALR/ALS is to remove the hazard of the drinking driver from the road in a speedier fashion.

AAMVA: The American Association of Motor Vehicle Administrators.

AAMVANET: The American Association of Motor Vehicle Administrators' data services network contains the National Driver Register, Commercial Driver License Information System, and other information of interest to licensing, regulatory, and law enforcement agencies.

AASHTO: The American Association of State Highway Transportation Officials.

BAC: Blood Alcohol Concentration. This is measured in driving-while-intoxicated cases.

CAMPAIGN SAFE & SOBER: A two-year NHTSA program to

reduce alcohol-related fatalities to 15,400 and increase safety belt use to 75 percent by 1997. These goals will be accomplished through a combination of enforcement, public information and education, and legislative initiatives.

CARE: Combined Accident Reduction Effort. Operation CARE, a group of state police and highway patrol agencies who conduct unified and concentrated efforts in traffic law enforcement along interstate highways, particularly on holiday weekends.

CDL: A Commercial Driver's License issued by a state, entitling a person to operate a commercial motor vehicle weighing in excess of 26,001 pounds manufacturer's gross vehicle weight rating, carries 16 or more passengers including the driver, or carries hazardous materials.

CDLIS: The nationwide Commercial Driver's License Information System, which contains all commercial driver license information including driving histories of problem commercial drivers. It is typically on-line with the Motor Carrier Safety Assistance Program (MCSAP) agencies in the various states.

CHEM-TREK: A 24-hour toll-free telephone service that provides law enforcement and emergency response agencies with information for identifying hazardous materials involved in spills, and recommends mitigation strategies. Chem-Trek is sponsored by the National Chemical Manufacturers' Association.

CVSA: The Commercial Vehicle Safety Alliance.

DARE: Drug Abuse Resistance Education, a copyrighted curriculum. The program, which trains police officers to present anti-drug programs in public schools, was started by the Los Angeles Police Department.

DOT: The U.S. Department of Transportation. Also applies to departments of transportation in various states, such as the

Arizona Department of Transportation (ADOT) and the Pennsylvania Department of Transportation (PENNDOT).

DRE: A Drug Recognition Expert. Trained and certified in the IACP Drug Evaluation and Classification Program, a DRE is experienced in administering a battery of physical tests and clinical observations to suspected drug impaired drivers.

DUI: Driving under the influence of alcohol or drugs, a criminal offense in most states and provinces.

DWI: Driving while intoxicated; the same as DUI.

EVOC: Emergency Vehicle Operator's Course. A curriculum developed by NHTSA in cooperation with national police training professionals to teach proper techniques for operation of police and other vehicles in emergency conditions.

FARS: The Fatal Accident Reporting System, maintained by the National Highway Traffic Safety Administration (NHTSA). The system gathers data on all fatal accidents in the United States through reports collected by state-level agencies.

FBINA: The Federal Bureau of Investigation's National Academy located at Quantico, Virginia. The academy offers a command training program for high-level officials of state and local law enforcement agencies, and police officials from foreign countries.

FEMA: The Federal Emergency Management Administration, located at Emmetsburg, Maryland, which provides federal emergency assistance at the scenes of catastrophes and national disasters, operates the National Fire Academy, and publishes the national model curriculum for first responders to hazardous materials accidents.

FHWA: The Federal Highway Administration in the U.S. Department of Transportation, which administers federal highway trust fund expenditures to the individual states, and

sets standards for the construction and maintenance of interstate highways.

FMVSS: Federal Motor Vehicle Safety Standards as promulgated by the National Highway Traffic Safety Administration.

FOP: The Fraternal Order of Police, a national police organization sometimes involved in labor activities as a collective bargaining agent.

FRA: The Federal Railroad Administration is the entity within the U.S. Department of Transportation which monitors the safe operation of railroads. It develops and enforces rail safety regulations, investigates accidents, manages rail safety and highway-rail grade crossing safety programs.

GCCI: Grade Crossing Collision Investigation, a highway-railroad grade crossing safety awareness program, coordinated through a national railroad safety program, Operation Lifesaver. GCCI provides one to three-day training classes, at no cost to the agency, tailored to specific law enforcement agency needs.

HAZMAT: Hazardous materials, generally used in the context of hazardous materials regulatory enforcement.

HGN: Horizontal Gaze Nystagmus, which uses a phenomenon brought on by alcohol and other substances, to assist in determining the blood alcohol level or drug impairment of suspected drunk drivers by examining the angle of onset of nystagmus, a jerking of the eyeballs.

HSC: The Advisory Committee on Highway Safety of the International Association of Chiefs of Police, Inc.

IACP: The International Association of Chiefs of Police, Inc.

IADLEST: The International Association of Directors of Law Enforcement Standards and Training (POST).

ICS: Incident Command System, the system used by fire departments and police agencies to organize and implement emergency measures to mitigate major incidents.

IPTM: The Institute of Police Technology and Management at the University of South Florida in Jacksonville, Florida, which conducts law enforcement training programs and operates a radar testing laboratory.

ITE: The Institute of Transportation Engineers.

IVHS: Intelligent Vehicle Highway Systems, a system of computerized hazard detection and warning, trip routing and other capabilities, which interfaces on-board computers in vehicles with on-board radar and electronic roadside warning beacons.

J. Stannard Baker Award: An annual award presented by the International Association of the Chiefs of Police and the National Sheriffs' Association to state, county and local police officers and private citizens who have made outstanding contributions to the field of traffic safety. The award is named after the founder of the Traffic Safety Institute at Northwestern University. Winners are selected by the IACP Advisory Committee on Highway Safety and the National Sheriffs' Association.

MCSAP: The Motor Carrier Safety Assistance Program, a system of federal funding of state agencies to assist the federal Bureau of Motor Carrier Safety (BMCS) in enforcing motor carrier safety and hazardous materials regulations at the state level.

NDLC: The National Driver License Compact, a program administered by AAMVA in which approximately 43 states participate.

NDR: The National Driver Register, a NHTSA program linked by AAMVANET and maintained by the American Association of Motor Vehicle Administrators.

NHTSA: The National Highway Traffic Safety Administration, the entity within the U.S. Department of Transportation which provides federal grants to state pass-through agencies for the maintenance of innovative traffic safety programs, conducts research, and sets federal motor vehicle safety standards (FMVSS).

NIST: The National Institute of Standards and Technology, formerly the National Bureau of Standards.

NMSL: The National Maximum Speed Limit as adopted by Congress and the National Highway Traffic Safety Administration Federal Highway Administration, currently 65 mph on most interstate highways.

NSA: The National Sheriffs' Association.

NSC: The National Safety Council.

NTC: The National Troopers' Coalition.

NTSB: The National Transportation Safety Board, which investigates major transportation accidents and makes recommendations for improved transportation safety.

NUTI: The Northwestern University Traffic Institute at Northwestern University in Evanston, Illinois, which conducts research and offers innovative traffic safety training programs, including the so-called “long course,” for commanders of police department traffic bureaus and divisions.

OL: Operation Lifesaver, a nationwide, nonprofit public information and education program dedicated to reducing crashes, injuries and fatalities at highway-rail grade crossings.

OOT: Officer on the Train, a highway-railroad grade crossing safety awareness program coordinated through a national railroad safety program, Operation Lifesaver. OOT places police officers aboard trains to radio traffic violations to other

officers strategically located at or near grade crossings that have a history of collisions and traffic violations.

Operation Pipeline: An enforcement effort along major highway corridors to identify and intercept drug couriers. The operation commonly uses profiles of typical vehicles and driver behaviors that have been proven in the past to indicate a vehicle or driver is transporting narcotics or dangerous drugs.

OPUE: Occupant Protection Usage and Enforcement. A NHTSA program designed to provide police agencies with a model curriculum and programs to promote and enforce the use of safety belts and child safety seats.

OSHA: The Occupational Safety and Health Administration of the U.S. Department of Labor, which sets standards in many occupational safety areas, including the allowable emissions of police traffic radar devices.

OUIL: Operating Under the Influence of Liquor, a criminal charge similar to DWI or DUI.

PBT: A Preliminary Breath Test, usually accomplished by means of an electronic or balloon-style device which determines at roadside whether or not a driver has consumed alcoholic beverages, and to what extent.

PMVI: Periodic Motor Vehicle Inspection, generally a statewide program for the safety inspection of vehicles either at state-owned inspection stations or licensed private stations.

PTS: Police Traffic Services.

RSPA: The Research and Special Programs Administration of the U.S. Department of Transportation, which is responsible for promulgating the provisions of the Code of Federal Regulations pertaining to the transportation of hazardous materials.

SACOP: The State Associations of Chiefs of Police, a division of

the IACP.

SAFETYNET: Computerized nationwide data bank maintained by the Motor Carrier Safety Assistance Program for tracking commercial driver enforcement.

SFST: Standardized Field Sobriety Testing, a model curriculum developed by the IACP Highway Safety Advisory Committee and NHTSA for performing uniform and standardized roadside physical tests on suspected drunken drivers, based on medically approved techniques.

STEP: Selective Traffic Enforcement Programs, targeted to the times of day, days of week, locations, and types of violations that cause accidents; an early form of directed patrol but specifically devised for traffic enforcement.

TITLE 49: Title 49 of the Code of Federal Regulations (CFR), which contains the regulations on the interstate transportation of hazardous materials.

UTCD: Uniform Traffic Control Devices Committee, a group of primarily engineers who maintain and revise the National Manual on Uniform Traffic Control Devices.

UVC: The Uniform Vehicle Code, a model code that is maintained by a standing committee of experts, the National Committee on Uniform Traffic Laws and Ordinances.

VDP: Violator Directed Patrol.

Associations and Committees

The following is a listing of the associated groups currently active in the highway safety field, together with a brief description of their administrative organization and relationship.

AAMVA (The American Association of Motor Vehicle Administrators)

This organization represents the driver license and motor vehicle registration agencies in the United States, the District of Columbia, and the Canadian Provinces. The organization is regionalized, with a regional staff member living within each region. Its headquarters in the Washington, D.C., area has a salaried executive director with the full-time task of overseeing AAMVA functions and staff, including the following:

- **AAMVANET** (The American Association of Motor Vehicle Administrators Network) is a teletype network that connects all member agencies and several federal agencies. The commercial driver license information system (CDLIS) and the National Driver Register (NDR) are connected to this network. Administrative messages, as well as driver license and registration checks, are available.

- **The Driver License Committee** is comprised of the various administrators involved in issuing driver's licenses. Many issues dealt with in this committee have a direct impact on law enforcement.

- **IRP** (The International Registration Plan) is a prorating system of registering commercial vehicles between the states. AAMVA and the private sector work closely with member states to encourage and further enhance this concept. Under the concept, a commercial vehicle is registered in the home

state and issued a plate marked “APPORTIONED.” At the time of registration, the applicant declares any other IRP member states in which he intends to operate, and a prorated portion of the registration fee is forwarded to each of these member states.

- **PTS** (The Police Traffic Services Committee) is the only law enforcement group within the AAMVA. This committee is made up of representatives of many of the same agencies that belong to the Division of State and Provincial Police of the International Association of Chiefs of Police, Inc. It is important to maintain the law enforcement presence at AAMVA in order to have an impact on AAMVA's decisions in the driver licensing and registration areas. The additional benefit of having the support of both the IACP and AAMVA on law enforcement issues is positive. Because the motor vehicle administrators are the dues paying members of AAMVA, however, they generally have sufficient votes to affect any decisions within their own administrations, and the police input, from a practical standpoint, is mostly advisory.

- **The Registration and Title Committee**, as in the case of the Driver License Committee, affects law enforcement directly. The issues of whether one or two plates should be issued to a vehicle, what kind of plates should be issued, and how they should be displayed, as well as anti-theft issues affecting the titling of motor vehicles, receive serious consideration by this committee.

AASHTO (The American Association of State Highway Traffic Officials)

This association consists mainly of the directors of the public works and highways or transportation agencies in the United States. Their main thrust is in Washington, D.C., where the federal highway trust fund monies are dispensed by Congress. This group is well-staffed and powerful as a lobbying group. Generally, the practical way for law enforcement to have input and dialogue with

AASHTO is through a state member agency rather than through the association staff.

- **The Traffic Safety Committee** deals with traffic safety issues but mostly from the engineering standpoint. There is no representation from the area of law enforcement on this committee, nor is AASHTO currently represented in any law enforcement groups.

ASLET (The American Society of Law Enforcement Trainers)

Headquartered in Lewes, Delaware, this fast-growing association is a loosely knit group of national law enforcement instructors, both free-lance and employed by state and local training institutions and police departments.

CSG (The Council of State Governments)

This national organization has representation from the executive level of each state's government.

CVSA (The Commercial Vehicle Safety Alliance)

Made up of enforcement agencies in many of the United States and Canadian provinces, this federation is responsible for enforcing the state-level equivalence of the federal Office of Motor Carriers Rules, and the Hazardous Materials Regulations contained in Title 49 of the Code of Federal Regulations. In some states, membership consists of the state police and highway patrol, while in others it consists of the agency that issues contract carrier operating rights, or the state transportation agency that operates the scales used for truck weight and size enforcement, or whatever agency handles the federal Motor Carrier Safety Assistance (MCSAP) Program for that state. To join CVSA, a state must agree to conduct uniform roadside safety inspections of motor carriers and apply a sticker recognized by other member jurisdictions, so as to avoid putting interstate truckers through multiple roadside inspections in different states during the same time frame.

IACP (The International Association of Chiefs of Police, Inc.)

Headquartered in Alexandria, Virginia, the IACP has a membership of nearly 14,000 police executives around the world, and operates with a salaried executive director and paid staff.

- **S&P** (Division of State and Provincial Police) is comprised of 49 state police, departments of public safety, and highway patrol agencies in the United States, plus several provincial agencies in Canada and the Canadian Royal Mounted Police, who also provide traffic enforcement in some provinces in Canada. S&P has a division director and staff at the IACP headquarters. The division is divided into four US regions that also include the contiguous portions of Canada. These regions are the Mountain Pacific, North Central, Southern, and North Atlantic. Each region has a regional chairman, and one general chairman on a nationwide level represents the S&P Division on the executive board of the IACP.

- **HSC**(IACP Advisory Committee on Highway Safety) consists of a cross-section of state and local police commanders who set policy and determine the IACP goals in the area of highway safety. The committee is appointed by the IACP president, and usually contains from 23 to 26 members. The members come from all types and sizes of law enforcement agencies, with consultants and representatives from the private sector as well. Other law enforcement groups, such as sheriffs, and government agencies, such as the Federal Highway Administration and the National Highway Traffic Safety Administration, are also represented. The committee is staffed by S&P personnel.

- **DRE Section** (Drug Recognition Experts) has been established with the IACP S&P Division to represent the DREs across the country. DRE training leads to a certification program that establishes minimum skills for detecting and prosecuting the drug-impaired driver.

- **TAP** (Technical Advisory Panel), appointed by the chairman of the IACP Highway Safety Advisory Committee, contains representatives from various disciplines such as prosecutors, chemists, medical personnel, and police officers who are directly involved in the DRE and SFST programs. TAP advises the Highway Safety Committee and assists with keeping the DRE and SFST curricula and certification regulations updated.

- **RATS** (Radar Advisory Technical Subcommittee), appointed by the chairman of the IACP Highway Safety Committee, consists of police officers, operators of testing laboratories, and manufacturers of traffic radar and LIDAR (LIght Detection and Ranging) devices, along with a member from the National Institute of Standards and Technology (NIST). RATS advises the Highway Safety Committee on the radar testing program, which is overseen by the HSC and involves five testing laboratories across the nation and an established consumer product list (CPL) of acceptable radar units.

- **State and Provincial Police Planners** consists of planners from the state and provincial agencies, including state police, highway patrols, and departments of public safety, comprising the IACP S&P Division. The group meets annually to discuss mutual issues affecting their agencies. Staff is provided by the S&P Division.

- **SPADS** (The State Police Academy Directors' Association) consists of the commanders and managers of the state police and highway patrol agencies in the United States and Canadian provinces who conduct training academies and are attached to the members of the IACP State and Provincial Division. Annual meetings are held and items of mutual concern are discussed. Staff is provided by the S&P Division.

- **SACOP**(The State Association of Chiefs of Police) is an IACP division consisting of a coalition of state associations representing police chiefs in their states. State police agencies and major city chiefs may belong to some local SACOP

associations in addition to being represented independently. SACOP is represented on the IACP Executive Board by a general chairman but has no dedicated staff.

- **The Major City Chiefs** is loosely knit group of chiefs from the larger metropolitan areas of the country. Meetings are called to discuss issues of mutual concern and seek solutions. This group has no dedicated representative of this group on the IACP Executive Board nor a dedicated IACP staff; however, because of their prominence and professional competence, individual members usually are represented as individuals on the IACP's Board of Officers.

IADLEST (The International Association of Directors of Law Enforcement Standards and Training)

This group is composed of the staffs and directors of the states POST (Police Officer Standards and Training) councils, boards and commissions, and other regulatory agencies that set the standards for police officer certification and training. Membership is also extended to staffs of certified police academies in each state and to similar agencies in Canada and other nations. IADLEST commends model standards for POST agencies and police academies and develops model curricula in many areas, including police emergency driver training and the operation of electronic speed measuring devices, such as radar, photo radar, and LIDAR. The group is well-funded but has no permanent headquarters. The secretariat is located in the office of whoever is the president of the association in a given year.

NAGHSR (The National Association of Governors' Highway Safety Representatives)

These are the state-level administrators who control the federal funds entering each state from NHTSA and, in some instances, the FHWA. Each state is required to have a governor's highway safety representative so that it is represented in this group.

NATIONAL ALERT

A nationwide organization of police emergency driver training instructors, NATIONAL ALERT meets periodically, usually at the FBI National Academy in Quantico, Virginia, to discuss matters of mutual interest.

NCSL (The National Conference of State Legislators)

This group is composed of speakers of states houses of representatives, presidents of state senates, majority and minority leaders and whips, and influential committee chairmen and members of the various state legislatures. They meet periodically to discuss trends in legislation and to share resources and ideas.

NCUTLO (The National Committee on Uniform Traffic Laws and Ordinances)

This group is responsible for maintaining the cutting edge of legislation and for publishing the uniform vehicle code (UVC), a recommended model code used by law enforcement agencies, motor vehicle administrators, and legislators to formulate new traffic laws and ordinances. The goals of the group is (1) to have uniformity among the traffic laws and ordinances of the various states and jurisdictions, so that persons traveling from one state or community to another will not unwittingly find themselves in violation of some unique law that exists only in one jurisdiction; and also (2) to address traffic safety problems with innovative and effective legislation. This group is comprised of a cross-section of voting members, including officials of state agencies, nonprofit organizations, and dues paying private sector representatives, who serve indefinite terms. The secretariat is currently located at the Traffic Institute of Northwestern University in Evanston, Illinois. The group meets at least biennially to debate proposed changes to the Uniform Code.

NGA (The National Governors' Association)

This organization consists of the governors of the 50 states and the premiers of the Canadian provinces and their top staffs. Members

meet periodically to discuss issues of mutual concern among the states, and to support, propose, or endorse legislation in many areas, including criminal laws and highway safety.

NOBLE (The National Organization of Black Law Enforcement Executives)

Headquartered in the Washington, D.C., area, NOBLE is comprised of African American command officers in law enforcement agencies. It conducts training programs in areas such as cultural diversity and domestic violence, promotes proactive policies to end discrimination in law enforcement agencies, and takes positions on legislation.

NSA (The National Sheriffs' Association)

Comprised of the elected law enforcement officials at the county level throughout the United States, NSA has a Traffic Safety Committee and is also represented on the Highway Safety Advisory Committee of the IACP with special consultant status.

NSC (The National Safety Council)

This large nonprofit safety organization focuses on the prevention of home and industrial accidents and, in part, on traffic safety. It also franchises a nationwide model defensive driving curriculum, including one targeted at police driver training.

UTCD (The Committee on Uniform Traffic Control Devices)

This working committee is composed mainly of traffic engineers employed by state highway departments and departments of transportation. It maintains the *Manual on Uniform Control Devices*, the engineer's bible for the installation of traffic lights, signs, striping, and other traffic control devices. The IACP has one member (and alternate), who represents the law enforcement point of view on the issues discussed. The discussions are lively, and law enforcement has one vote.

PART TWO:

Community-Oriented Traffic Policing

Are Effective Traffic Officers an Endangered Species?

Sometimes effective traffic enforcement in certain localities appears as though it has gone the way of the Dodo bird.

The next time you take a trip for an hour or more, count how many police you see who have stopped violators or whose vehicles are parked where they can strategically observe the traffic flow. Better yet, observe how many officers pass a stranded motorist without stopping to assist. And when was the last time you noticed an officer in a marked patrol car watching an intersection for stop sign violations, or surveilling a stretch of road for motorists passing over solid lines?

Inconsistent, Untargeted Enforcement

Too frequently, when enforcement does take place, it consists of issuing a batch of citations at a location where motorists may be exceeding the speed limit but accidents are minimal, instead of targeting a location where unsafe actions are contributing to crashes.

This type of inconsistent, “here today and gone tomorrow” enforcement only arouses ire and disrespect on the part of the public.

Motorists driving at legal speeds tend to be passed as though they were standing still, and traffic control devices are routinely disregarded by some motorists. Is it any wonder that criminals in some jurisdictions no longer hesitate to ply their trade for fear of being stopped by an alert traffic officer? Or that some motorists whose aggressive driving mirrors an aggressive personality are increasingly settling traffic disputes with gunfire? Why should

license revocations be a deterrent if the odds against being stopped are so great? And is it any wonder that despite improvements in vehicle and roadway safety and public crusades, the deaths, suffering and lost productivity from traffic crashes still make them America's number-one public health hazard?

Accountability Problems

If you ask your officers how they can drive around for eight hours without making a traffic stop, they will say they are busy running from call to call. Yet more creative use of whatever uncommitted time is available would yield major dividends in the fight against traffic deaths and injuries.

Some departments have raised a generation of officers who rely on moving radar for all their traffic activity—if, indeed, they regard traffic work as real police work at all. Officers with this attitude lose the many opportunities presented when serious crimes are detected through a supposedly random traffic stop.

They also miss out on the public relations benefits accrued by them personally and by the department from providing a variety of services and a sense of security to the traveling public.

Policy Considerations

Reversing this trend needs to start at the top. As administrators, through our written policies, public pronouncements and personal examples, we need to demonstrate that we believe traffic work is an important part of every uniformed officer's job. We should insist that line supervisors accompany traffic officers on their shifts occasionally, and call them to task if they fail to stop vehicles for not only moving traffic violations but also equipment violations, or if they fail to spend part of each shift on visible traffic patrol.

Making Use of Data

Systems should be in place to review the traffic productivity of our officers, focusing on the number of contacts per hour rather than setting a quota for citations. We need to look at the quality and variety of citations and warnings issued and match them up through an effective traffic records system to be sure the traffic laws are being enforced at the times and places where they can reduce collisions. We must be responsive to public complaints about dangerous traffic conditions. And we need to retrain our field training officers to be sure they acquire the skills that good traffic officers should have, and pass them along to the new officers on the department.

Conclusion

If we allow good traffic work to go the way of the Dodo bird, we will eventually consign the entire patrol function to the same fate, because traffic is such an integral part of visible, alert patrol tactics. Once this type of police work makes it to the endangered species list, it will take more than a couple of additional accreditation managers sitting in the office to restore sanity to our troubled streets and highways.

Two for the Price of One

Traffic law enforcement gives officers at the state, local, and county police levels the unparalleled opportunity to save lives. The causal relationship between consistent, goal-oriented enforcement and casualty reduction stands clear and unimpeachable. Traffic enforcement is demonstrably justifiable on its own merits. Yet, today an emerging secondary benefit reinforces the value of roving patrol officers. They have become major crime fighters!

America's long-standing reliance on the motor vehicle has put crime literally on the nation's streets and highways. Murderers, robbers, auto thieves, and drug traffickers all travel by motor vehicle. And when they violate traffic laws—a frequent occurrence because criminals typically are preoccupied by their crimes—that familiar police light appears in the mirror. This once meant two things: a short conversation with the officer and a traffic citation. Today, much more can follow.

What happens in those few moments when an officer approaches a violator describes the quiet revolution taking place within law enforcement. Officers more frequently recognize that the violator doesn't quite fit the circumstances.

The subject's demeanor, the caliber of responses to questions, a lack of knowledge about the vehicle—these and similar factors noted by the alert, trained observer recommend further investigation. And further investigation pays off in criminal arrests.

None of this results from mere luck. Specialized training, a growing reservoir of favorable experience and, perhaps most important, the intelligent wariness of the individual combine to transform him from a traffic officer into something more. It's as if we're getting two people for the price of one: an officer skilled in traffic and another knowledgeable in general criminal investigative techniques.

Traffic Enforcement and Crime Reduction

University of Maryland Criminologist Lawrence S. Sherman reinforces the importance of traffic law enforcement in reducing general crime: “The higher the level of traffic enforcement, the lower the level of robbery. Aggressive traffic enforcement creates a broad general effect of deterrence.” He adds that some crimes—robbery, rape, burglary, aggravated assault, and car theft—can be prevented by a visible police presence.

This is precisely what highway patrols and the traffic units within state, county, and local police agencies offer: a visible presence and aggressive traffic enforcement. But the record now shows they provide the added bonus of potential criminal detection. The alert officer, patient and thorough, may capture a felon, recover contraband, or disrupt a crime in progress.

For example, a California Highway Patrol officer jotted down the plate number of a Georgia car because he suspected it should have been registered in California. A follow-up check with Georgia authorities showed the car was sought in connection with the kidnaping of a 12-year-old girl. Two weeks later the officer spotted the same car, determined that it was still wanted, called for backup, and made the stop. The result: one kidnapper arrested, one 12-year-old rescued.

A motorcycle officer saw two men running across the freeway, each carrying a large box. They darted into the bushes before he could reach them. Two hours later he sighted the same pair, again sprinting across the freeway and carrying large boxes. This time he arrived just as they disappeared into the shrubbery. He ordered them out, but they emerged empty-handed. A search produced several boxes loaded with small appliances. The pair had systematically shoplifted merchandise from a nearby mall, each time dashing across the freeway to a motel room.

A third officer drove by a parked car; nothing appeared unusual, until he saw two heads duck below the window line. He checked the license plate by computer and received the return message that the subjects were considered armed and dangerous. By now the vehicle was moving, and the officer followed, while calling for backup. The pursued vehicle fled at high speed. Moments later the car crashed, and the occupants were captured. Both were wanted on suspicion of kidnaping, armed robbery, rape, grand theft and attempted murder.

Violator-Directed Patrol

In 1987, the U.S. Drug Enforcement Administration conducted an "Operation Pipeline" drug interdiction seminar in New Mexico, opening the vista of expanded criminal enforcement by traffic officers. Yet, the troubling echo sounded by those already involved in Pipeline was the required specialization of personnel, meaning that traffic responsibilities had to be reduced proportionately. For agencies already struggling to handle traffic with diminishing uniformed strength, siphoning resources to yet another new program was unappealing. But the concept of drug enforcement made real sense; the challenge became how to mount an unrelenting traffic enforcement effort, while expanding the capacity to conduct criminal investigations.

Arizona met this challenge through a program called VDP (Violator Directed Patrol). VDP concentrated uniformed strength in areas with a high frequency of collisions, and it upgraded the criminal investigation training of highway patrol officers— initially in a targeted area, but eventually including all officers. VDP listed simple, practical objectives:

1. Provide maximum patrol visibility in areas of high-collision frequency.
2. Concentrate traffic enforcement on violations causing the most collisions.

3. Develop the ability and the willingness of the individual officer to increase criminal apprehensions, drug seizures, and recoveries of stolen vehicles.
4. Work closely with the Criminal Information Bureau by providing criminal intelligence information and referrals on patrol-generated criminal cases.
5. Increase, through training, the ability of officers to apprehend criminal violators.

In practice, Arizona found that a VDP project in a given area virtually eliminated collisions, thereby realizing the traffic safety objective. The criminal investigative objective required more time, because the skills being taught were new. Training dealt with a myriad of subjects. Officer safety was stressed, particularly in situations requiring searches or arrests. The fundamental cautions were reemphasized: Wear gloves, watch for needles, and call for backup.

Time was invested in teaching probable cause. A few of the basics: Is the driver the registered owner? Is the driver's ID valid? Are vehicle and driver from the same location? Does the driver know where and when the car was last serviced? Is the car a rental? If so, did the driver rent it? Is the driver authorized on the rental agreement? Is luggage in the vehicle? How long is the trip? Plus many more. As training progressed, one thing became clear; there is no profile of the “typical criminal” or “typical drug trafficker.” Indicators, certainly, but no-cut-and-dried formula. Experience reveals that people and vehicles of every description can be criminally involved.

Any stop begins with a traffic infraction, observed and identifiable. Development of probable cause for suspected criminal activity starts only after the legitimate traffic stop. And very often, it ends with a consent search, another critical element in many investigative sequences. Consent is the key word. The subject must consent, preferably in writing.

Arizona's results have been rewarding. The Highway Patrol Bureau (500-plus officers) recovered 600 to 700 stolen vehicles per year before VDP. The figure doubled to 1,413 with VDP. Drug seizures and felony arrests reflected similar increases. All of this was achieved while maintaining the desired emphasis on traffic safety objectives; in fact, Arizona's traffic fatality rate stood at an all-time low.

The California Highway Patrol initially became involved in Operation Pipeline because several Pipeline highways traverse the state, notably Interstate Routes 5, 8, 10, 15, and 40. Officers working these highways learned the pertinent identification skills and legal latitudes. So did commercial officers, whose investigative abilities were upgraded through a program known as CONET (Commercial Officer Narcotic Enforcement Team). CONET also counts as full partners the 20 drug-sniffing dogs now fielded by the CHP.

Next came training of all field officers, bringing the number of skilled patrol observers to approximately 5,000. The results describe the payoff. The CHP makes more in-custody arrests than any other California police agency, and many of the arrests are of suspected felons.

How VDP Works

The new sensitivity imparted by the training boosted drug seizures and drug arrests, but the trigger mechanism remains a traffic stop. The seemingly minor infraction can start a chain of events leading to a narcotics find. Here are examples:

1. The driver of a vehicle stopped for a broken windshield could produce neither a driver's license nor vehicle registration. Prior to storing the vehicle, the officer made a routine inventory. The trunk contained 227 pounds of marijuana.

2. An officer issuing a citation was approached by another motorist seeking help to arrange a tow because his car engine was misfiring. The officer noticed that the vehicle displayed no registration stickers. He checked the plate number and discovered the vehicle was listed as stolen. He arrested the driver. A subsequent vehicle search uncovered drug manufacturing equipment, methamphetamine and marijuana.

3. Two men aboard a tractor-trailer stopped for a traffic violation exhibited what the CHP calls indicators—not a definition, but a suggestion to investigate further—of possible criminal association. Written consent to search the truck led to the discovery of 1,452 pounds of cocaine, valued at $57 million on the street.

4. Cocaine proved to be secreted in a passenger car searched with the driver's consent after being stopped for a traffic violation. A drug-sniffing K-9 quickly located a metal box, disguised as a gas tank, attached to the rear undercarriage. Inside: 20 pounds of the drug.

5. A freeway beat officer, going off-duty and heading toward his office, spotted a wrong-side driver on a city street. He made the stop, found the subject was under the influence; a vehicle inventory turned up a hypodermic containing a brown liquid. Interrogation led to an admission that the subject was on parole. The patrol office authorized a search of the subject's home, which uncovered several drug caches, including one in the wife's purse. She also was arrested for possession of narcotics.

6. Occasionally, the evidence simply presents itself. Investigating a crash, officers found an Uzi machine gun had been ejected from one vehicle. That dramatic clue led to a search of the suspect's clothing, revealing marijuana and a bundle of cash.

7. Finally, a traffic stop of a man driving a rental truck led to a consent search. This time the contraband was not drugs but stolen furniture worth $13,000.

Go Where the Problem Is

Thirty years ago, traffic enforcement emerged from the dark ages of hit-and-miss deployment to the logical and effective strategy of selective enforcement. Go where the biggest problem is; attack the major causes. That's the basic reason drunk driving became such a high enforcement priority and why safety belt enforcement is emphasized today. Effort applied in those two areas produces proportionately greater benefits.

Criminal enforcement in those earlier years was mostly a bonus. Felony arrests were infrequent, not because criminals weren't using cars, but rather, the importance of emphasizing criminal enforcement had not yet made itself widely felt within traffic work. The necessity for combining skills began to overtake all police agencies, as phrases such as “cut-back management” and “doing more with less” became familiar. The urgency to run tighter ships is never more obvious than now, when governments at all levels are short of funds. The tendency to expect more of public employees is common and police agencies are not exempt.

Criminal investigators now look to road patrols for help in both gathering intelligence and intercepting criminals on the streets and highways.

The reaction of state police and highway patrols has been positive, but their response was restrained because the resource equation seemed out of balance. Shifting emphasis always means shifting resources from one priority to another—or does it? That ultimately proved the key—finding a way to absorb a new responsibility without undermining existing duties. Officers working traffic enforcement, fulfilling a critical safety mission, can undertake the criminal identification task as long as they can handle it in parallel

with the basic traffic assignment. History now declares that they can and they do, and that's why the new program works so well.

It also provides an answer to the challenge sometimes issued by irritated motorists reacting to a traffic stop: “Why aren't you out arresting criminals?” We are, but in addition to, not at the expense of, the traffic law enforcement responsibility.

Patrolling our streets and highways remains the vital task of protecting public safety, through the proven deterrence of aggressive, intelligent traffic law enforcement. That won't change. What has changed is the level of police officers' capabilities. They just got better. And the public is reaping the benefits.

Community-Oriented Traffic Policing

"Community policing" is the watchword of the '90s. More communities are daily jumping on the bandwagon, and reports from consultants examining law enforcement agencies from Boston to Los Angeles are recommending its adoption as the best response to the crime problem. Refinements to community policing's basic concepts, such as Professor Herman Goldstein's "problem-oriented policing" have achieved success in localities as diverse as Newport News, Virginia, and London, England.

If this type of policing is being touted as the answer to crime, perhaps it is time to look at its potential impact on a problem that is more preventable and looms much larger in terms of its devastating effect on the public—the daily toll of death, injury and property damage on our nation's streets and highways.

In a recent year, according to statistics from the National Highway Traffic Safety Administration (NHTSA), a highway death occurred every 13 minutes in the United States. In contrast, the FBI Uniform Crime Reports figures indicated one murder every 21 minutes in that same year—that is, 18,967 deaths due to murders versus a total of 40,115 deaths in fatal traffic crashes. Additionally, 3.2 million persons were injured in traffic crashes and economic damage totaled $137.5 billion—more than four times as much as the estimated $13 billion economic loss due to crimes

If our mission is truly "to protect and serve," how better to accomplish this than by making our streets and highways safer for those who use them on a daily basis? Is there a way to apply the concepts of community policing to the traffic problem?

Although the definition of community policing still appears somewhat hazy, the following principles seem to have emerged almost everywhere it has been truly implemented (as opposed to those jurisdictions where it is embraced only in theory):

1. An admission that the police alone cannot solve the problem; *direct participation by citizens* is also required.

2. A shift in the focus of problem definition to a *customer orientation*, and a corresponding concentration on those problems identified by the citizens themselves as being of greatest concern.

3. An emphasis on *proactive, rather than reactive,* policing, replacing a total preoccupation with 9-1-1 calls with efforts targeted at particular problems.

4. The identification and implementation of *a range of non-traditional approaches*.

5. The redirection of officers from their cruisers into more direct contact with the community, along with the delegation of decision-making authority to the patrol officer's level.

Let's examine these principles and see how community policing strategies can be applied.

Admitting the Need for Citizen Help

Although our streets and highways have grown relatively safer over the past decade, with the death toll per 100 million miles dropping, an increase in licensed drivers and registered vehicles, as well as congestion, is clogging both our arterial and our city streets. Traffic crashes remain the leading accidental cause of death in the U.S., and are responsible for a major negative impact

on our economy. Most state, county, and local police departments are understaffed, and can use all the help they can get.

Just as Neighborhood Watch programs have helped discourage residential burglaries and led to the apprehension of criminals, so can group and individual action by citizens lead to the identification of unsafe streets and highways and the apprehension of drunken and drugged drivers, as well as those whose total disrespect for law and order leads them to drive after their licenses have been suspended or revoked.

A few states have experimented with REDDI (Report Every Drunk Driver Immediately) toll-free telephone lines where citizens can report drunk drivers, but we have only begun to scratch the surface of available citizen assistance and involvement. Our crime prevention officers need to team up with our traffic officers and let participants in Neighborhood Watch know how to report dangerous drivers. Taxis, public utility vehicles and others with commercial two-way radio communications, drivers with cellular phones and truckers with CB radios can all be enlisted in the war on dangerous driving.

Having Our Customers Identify Problems

Social scientists have discovered that, in terms of its effect on the quality of life in the United States, the fear of crime is perhaps as important as the presence of crime itself. Similarly, practitioners of community policing have found that helping residents clean up neighborhoods of such nuisances as abandoned cars and dilapidated buildings allows people to feel safer on the streets, instills more pride in communities, and gets citizens in the habit of working with the police.

Just as people fear a gang of roughnecks on the street corner or the presence of a neighborhood drug hangout, so do they fear for the safety of their children playing near the street if their neighborhood is plagued by screeching tires at all hours.

Thanks to interstate speed limits and monitoring criteria, traffic enforcement effort in recent years has been diverted to the interstate system. Citizens who do not respect the arbitrary 55 mph speed limits posted in areas selected because of population figures rather than traffic hazards, have come to regard speed violations as trivial. We must try to restore respect for traffic laws by deploying more officers to the locations where the citizens *themselves* are troubled by dangerous drivers. We must teach our officers to rely on more than just a radar gun. People will feel safer—and those prone to disobey the law will be more effectively deterred—if some of the low-profile radio cars now sitting at crossovers could spend more of their time in high-visibility activities, such as monitoring solid lines, stop signs and school bus stops; sitting in locations where neighbors complain about careless drivers; and frequently checking vehicles with defective lighting equipment while patrolling an area characterized by licensed drinking establishments.

Targeting Proactive Enforcement

As police departments move away from the notion that all calls for service, regardless of their nature, require an immediate response by uniformed officers in radio cars, and adopt differential response strategies that permit the use of directed patrols designed according to crime analysis, we need to examine our traffic records systems, as well. Do our traffic records adequately identify the times of day, days of the week, locations and violations that are causing the most serious traffic crashes? Do the traffic citations issued indicate adequate enforcement against these types of violations, or are our officers simply looking for easy targets?

In developing directed patrols, we need to be sure that traffic enforcement is one of the priorities, and that it is targeted toward the known causes of crashes and the traffic problems of most concern to our citizens. We must also encourage our officers to

stop and direct traffic whenever possible at locations where congestion poses an annoyance to the traveling public.

Using Nontraditional Approaches

Saturation enforcement and the issuance of traffic tickets have traditionally been the primary means used by police to make our streets and highways safer. However, just as proponents of community policing have employed a broad range of strategies and involved other government and private agencies to attack the crime problem, these strategies will also alleviate traffic problems. If available manpower does not permit adequate enforcement at a location where illegal left turns are causing accidents, why not team up with the Public Works Department to erect temporary barricades or some other solution? Why not convince the city to condemn and tear down a vacant building to make room for a left-turn storage lane? The possibilities are limitless, just as they are in any other form of community policing.

Delegating Authority

In these days when risk management and national accreditation are moving us closer to a painting-by-the-numbers style of law enforcement, we must find new ways to empower our employees to work on innovative solutions within the community and make it clear that they will not be penalized for doing so. We must replace enforcement strategies that too often lead to officers sporadically "swooping down out of nowhere" to ticket citizens in response to a commander's once-a-month concerns about activity, or a loud complainer who gets the right ear at headquarters.

Enforcement can be efficient and still not be effective, but effective enforcement by its very definition is always efficient. We need to move our officers out into the community, both to perform high-profile stationary observation at strategic times and locations and to make them available and approachable to citizens who wish

to exchange valuable information on neighborhood problems, crime and otherwise. It is no longer a viable excuse to say that our officers “don't have the time”; indeed, we cannot afford *not* to develop this type of interactive policing.

Conclusion

Near the beginning of the twenty-first century, it appears that any economic recovery may be shallow and gradual, and that police departments will find it difficult to obtain the resources they need for the demanding jobs that lie ahead. With deaths, injuries and property damage from traffic crashes eclipsing all other accidental causes of human suffering and economic loss, we cannot afford to neglect the traffic problem. By adapting community policing strategies to traffic enforcement, we can “work smarter” and obtain more community support for our efforts.

Community Policing and Traffic Enforcement: Not Mutually Exclusive

Many jurisdictions around the world are embracing the concepts of community policing and problem-oriented policing as a means to draw the police and the public closer together and to make the most efficient use of scarce resources.

Citizens want law enforcement to help them with many concerns, including street-level drug usage, deteriorating neighborhoods, and crimes of violence.

Community policing and problem-oriented policing each posit the theory that the problems of crime and disorder in the community cannot be solved by the police alone. The roots of these problems go deep into our culture and times. We need commitment, involvement, and support from the total community as we go about the task of reducing fear and making a safer environment.

These new policing styles also realize that the officer on the beat or in the squad car, delivering direct police services to the people, is often in the best position to recognize problems and must be given reasonable latitude to develop innovative and nontraditional solutions to these problems, in concert with the community.

The IACP Highway Safety Advisory Committee is concerned that, in adopting these new policing strategies, communities do not overlook the number one public safety problem today, in terms of deaths and serious injuries and its impact on the quality of life: traffic crashes. Nationally in the United States, more than 40,000 people are killed in traffic crashes each year, and 3,200,000 are injured. Thus, traffic deaths remain by far the largest single cause of accidental death. Traffic crashes cost U.S. society $137.5 billion

a year in economic loss—including uninsured work losses, vehicle damage costs, and cargo loss— and outstrip cancer, heart disease, AIDS and all other causes of deaths for Americans age one to 44 years. The situation is similar in most other industrialized nations.

As we redouble our efforts to improve policing methods and obtain more community support and involvement, let us make sure that traffic enforcement is not neglected. Without safe streets and highways, we cannot truly say we are reducing the level of community violence and fear, and making the streets safe for our citizens.

PART THREE:

Setting Policy For Successful Traffic Enforcement

Setting Policy for Successful Traffic Enforcement

As the head of a law enforcement agency, you have the responsibility to provide guidance and direction to your employees in accomplishing the goals of your organization. As well, you should encourage them to participate actively in establishing a standard of professionalism that will bring credit to them as individual officers and to you and your organization.

Deaths, injuries, and economic losses from traffic crashes constitute the number one public health problem in nearly every country in the free world. A successful police administrator will use the "bully pulpit" of policy making to ensure that his officers place the proper priority on traffic enforcement activities.

Defining Your Agency's Mission

Begin at the very basic level of your agency's mission statement, and make a value statement as well. Make certain that the mission and value statements contain strong wording that clearly tell both the public and the members of the department that traffic enforcement is seen as a vital component of any community or service-oriented policing effort, and the responsibility of every uniformed officer, regardless of rank or assignment.

Run your department according to a management-by-objectives or total quality management approach that includes a long-range strategic plan, and that traffic is represented in this plan.

To emphasize this perspective at the operational level, traffic productivity should be an aspect of the periodic personnel evaluations of all uniformed officers. Data should be collected on which to base these evaluations. To avoid accusations of setting a quota

for enforcement, base your evaluation criteria on all self-initiated contacts, and do not overemphasize citations. First-line supervisors should take corrective action whenever an officer spends an appreciable amount of time on the road without making a reasonable number of self-initiated traffic contacts. Likewise, mid-managers should hold first-line supervisor's feet to the fire to ensure they're carrying out their responsibilities. A component of each field training officer program should include sufficient emphasis on traffic activities.

When writing policies for your department, consult the standards contained in the manual of the Commission for Accreditation of Law Enforcement Agencies, Inc (CALEA). That way, even if your department is not presently accredited, should you desire to become accredited at some future date, you will have a lot less work to do to conform your policies to CALEA standards.

Concentrating Your Efforts

When you begin reviewing or developing traffic policies, concentrate first on the highest liability areas, which include pursuits, high-risk vehicle response, road blocks and forcible stopping tactics, and drunk and drugged driver enforcement. Other important areas affecting traffic safety operations include fleet accident review, transportation of prisoners, fuel economy, and vehicle specifications and equipment.

Liability for you and your department arises either when you do not have a policy or when a existing policy is inadequately explained through training or is not enforced.

The policy and procedure manual should consist of procedural guidelines your members will use to perform their daily duties, as well as the policies themselves, which will be short descriptions of agency goals in particular situations. Detailed procedures for carrying out the policies should be explained clearly and concisely.

When writing policies, make sure you focus on the expected results, not just the methods to be used in performing the task.

Operation of Emergency Vehicles

Training in the operation of emergency vehicles is one of the most important issues currently facing police administrators. Adequate training must be maintained to ensure that your officers are able to operate department vehicles competently during the response to an emergency and in pursuit situations. In addition, it is essential to develop a comprehensive emergency vehicle operations policy that is specific to your particular agency, not simply borrowed from elsewhere.

Train each member of your department within the parameters of your particular agency's policy regarding both emergency response and pursuit. Make sure your instructors are well acquainted with the policy and that their lesson plans conform to it. Do not have an unwritten response or pursuit policy—your members need to know where you stand on the issue and what guidelines they must follow in these situations.

Your pursuit policy, when developed, should describe specifically how your department members are to conduct themselves when faced with a pursuit situation. The policy must address such issues as a clear, concise definition of the term “pursuit,” because a realistic definition encourages compliance.

Provide a precise description of the conditions under which your officers may initiate a pursuit. Pursuit should be discouraged for minor nonmoving violations. Limited pursuit is acceptable for moving violations. Pursuit is generally acceptable for serious moving violations.

The policy should indicate how a pursuit is to be initiated, including the emergency warning devices to be utilized, and notification of a supervisor and/or communications center.

The duties of the primary and other available units should be spelled out in the policy. The primary unit should focus on the pursued vehicle, and other units should focus on obstacles and other motorists. Your policy should prohibit the operation of several police vehicles in a convoy fashion during a pursuit. When more than one vehicle is involved in a pursuit, the additional vehicles should follow along at near-legal speeds and merely position themselves to be of assistance once the pursuit is terminated.

Depending on the size of your department, the number of street supervisors and watch commanders available, and the size and capability of the communications center, you should consider making a supervisor responsible for monitoring the progress of a pursuit. This supervisor should have the authority to terminate the pursuit at any time he feels the dangers inherent in the pursuit outweigh the value of apprehending the pursuit vehicle. Factors to be considered by both the supervisor and the driver of the pursuit vehicle should include the nature of the original violation, road and weather conditions, the nature of the pursuit locale, and the likelihood of success compared with the danger to the public. Reasons for discontinuing the pursuit should include loss of visual contact, increased danger to the public, or obtaining enough identification to apprehend the violator at a later date.

Forcible stopping techniques should only rarely be used to terminate a pursuit, because the U.S. Supreme Court has stated in *Brower v. Inyo County* that they constitute deadly force under some circumstances. Deadly force should only be used in the apprehension of someone who has committed a felony involving force or violence and all other means to effect their apprehension have failed, or when reasonably believed necessary to save the lives of other innocent citizens.

The technique of boxing in the pursuit vehicle between two patrol vehicles is extremely dangerous, not only to the suspect but to the operators of the patrol vehicles. Apprehending a motorist for traffic violations is seldom worth risking a whiplash injury, or worse, to a police officer. Under no circumstances should forcible

stopping techniques such as rolling roadblocks or ramming be used, unless the officers have specifically received classroom and hands-on training in these techniques.

When stationary roadblocks are set up, ample advance warning should be given to other motorists, and an escape route should be allowed for the pursued vehicle. Otherwise, if the pursued vehicle becomes involved in a crash at a road block and its driver or passenger is killed, the question will always arise as to whether or not deadly force was authorized. The use of hollow spikes sold by various police supply houses may be an acceptable alternative, but only when the use of such a technique is legally justified and the officers have been trained in its use.

Once a fleeing motorist has been apprehended, additional use-of-force considerations come into play. An unfortunate incident can happen when police officers, high on adrenaline after a lengthy high-speed pursuit, confront an errant motorist. An instance that occurs all too frequently involves a police officer who attempts to remove a motorist forcibly from a vehicle at gunpoint and accidentally discharges his weapon. It is always preferable to wait for sufficient assistance before removing a motorist from a vehicle at the scene of a high-risk stop and to use the "contact/cover" principle, where one armed officer provides the firepower and an unarmed officer conducts the handcuffing and search. Because of the ease with which modern semiautomatic weapons will discharge, it is extremely important that officers be trained in the "on target-on trigger, off target-off trigger" principle of handling firearms.

By exposing officers to scenario-type training with periodic retraining in these techniques, officer self-discipline will be attained. It is also necessary to have a supervisor proceed to the scene as quickly as possible and assume control of the situation.

Response to Emergency Calls

Every police department should develop a response policy that provides assistance to officers when they are responding to various calls for service. For instance, when responding to an accident, a call for assistance, or any emergency requiring officers to arrive at the scene as quickly and safely as possible, they should be required to activate their emergency warning devices and pay attention to state motor vehicle laws, including the conditions under which they may legally ignore traffic signals, the procedure to be followed when they do ignore the signal, and conditions under which they may exceed the maximum posted speed limits or disregard regulations governing direction of movement or turning in specified areas.

Stress to the officers, both in the policy and during training sessions, that the emergency vehicle exemptions do not relieve the driver of an emergency vehicle from the duty to drive with due regard for the safety of all persons; nor do these provisions protect a driver from the consequences of reckless disregard for the safety of others.

Operating a police vehicle either in pursuit or in response to an emergency call is extremely dangerous under conditions where the vehicle will be going the wrong way down a one-way street, entering a freeway entrance ramp from the opposite direction, or otherwise disregarding normal traffic flow conditions. Due to the extreme dangerousness of these tactics, they are seldom permissible.

Policies should also provide that responses to non-injury crashes, service calls not involving a crime in progress, and other non-emergency situations should be accomplished at or below the speed limit, with regard to existing roadway and traffic conditions.

Mandatory Report On Pursuits

Your policy should require police officers to make a written report on every pursuit, whether successful or unsuccessful. These reports should be entered into a data bank to determine the extent to which your officers are engaging in high-speed pursuits, and the percentage of these actions that result in crashes. The report should also be reviewed by supervisors to ensure that departmental policy was followed.

Fleet Accident Review

Officers should be given the opportunity to have their peers and supervisors review the events surrounding any fleet accidents in which they are involved. Also, they should be allowed to be present at that review and offer any explanation of the event they think is necessary.

When preparing an accident review procedure, you should specify how the accident is to be investigated. In some instances, it may be appropriate to have the accident investigated by another law enforcement agency having jurisdiction in the area. On occasion, however, it may be appropriate for your department to conduct its own internal accident investigation. Your policy should address the various situations, and clearly describe under which option the investigation is to be conducted, as well as the routing of any investigative reports for supervisory review.

In the event that not all of your department fleet accidents are reviewed routinely by an accident review board, your policy must clearly describe the procedure for reviewing the reports and the protocol to be followed for convening an accident review board if deemed appropriate.

The policy should provide a framework for the members of the accident review board to be empaneled, including membership of the panel, and inclusion of peers, supervisor participation, and testimony from the involved officer and an accident reconstructionist, as well as the time frame for preparation of the report, notation of any training deficiencies or employee negligence and violations of the law.

The policy should emphasis that any disciplinary action taken as a result of the report will be separately considered and is not the responsibility of the board. The duty of the board is simply to determine whether or not the accident was avoidable and if there are training or retraining implications.

Transportation Of Prisoners

The purpose of a prisoner transportation policy is to provide guidelines to your employees when they are moving prisoners or persons in custody from one place to another. The following are several issues that should be addressed by such a policy.

To comply with the Americans with Disabilities Act (ADA), the policy should explain the procedures to follow when taking into custody persons with a physical disability.

Include the inspection of the department vehicle for possible presence of weapons at the beginning of the shift, following the transportation of a prisoner, and at the conclusion of the shift.

A policy on the transportation of juveniles and female prisoners should be developed. If a prisoner of the opposite sex must be transported and no officer of the same sex is present, require the transporting officer to contact communications and have the name of the prisoner recorded, along with the time the transport began and the mileage, time and location at the conclusion of the transport.

Your prisoner transport policy should require that the safety screen be in place and the rear seat door handles deactivated. The policy should also cover situations when it is unavoidably necessary to transport prisoners in a vehicle without a cage.

All prisoners should be handcuffed with the handcuffs double-locked, with their hands behind their backs and palms facing outward. Exceptions to this are special situations such as transporting a prisoner obviously in a state of pregnancy, with a physical disability, or with injuries that could be aggravated by standard handcuffing procedures; or handling one who is violently resisting arrest or manifests mental disorder such that he poses a threat to himself or to the public. In the latter case, other devices such as strait jacket are required. Prisoners should never be handcuffed to any part of the vehicle, and the procedure of “hog tying” prisoners by handcuffing their arms through their legs should never be utilized because of the problem of prisoners dying from positional asphyxia.

If any type of chemical weapon has been used on a prisoner at the time he was taken into custody, the prisoner should be decontaminated prior to transport, if possible, and monitored closely by the transporting officer for any signs of illness.

Seat Belt Use

All departments should have a mandatory seat belt use policy for the protection of the officers, the prisoners they transport, and the welfare of the general public, as well as for the purpose of reducing worker's compensation claims and injuries by members of your work force.

The law enforcement cop-out that safety belts “prevent me from exiting my vehicle quickly at an emergency situation” is a myth that portrays safety belts as unsafe and should not be tolerated. Officers can get in and out of a car using the seat belt almost as quickly as those who do not.

Seat belts hold the driver in place so that he is less likely to lose control in a minor collision or during a pursuit. In a vehicle equipped with automatic shoulder harnesses, it is doubly important that the lap belt be fastened because of instances where motorists wearing only the shoulder harness have been decapitated in a crash. Even if a vehicle is equipped with air bags, the seat belts are important to hold the driver behind the wheel and prevent injuries in side and rear collisions.

The legal ramifications of allowing your officers to disregard the seat belt in a police vehicle are far-reaching and generally negative. Any decision to implement a non-mandatory seat belt policy should be made only after consultation with the department's legal advisor.

Fuel Economy

In times of budget restraints, fuel economy is essential for efficient operation of the department. You need to plan for those events that may require a cutback on active patrol.

Computerized records of the fuel mileage of various vehicles will indicate drivers whose uneconomical driving habits may make them candidates for additional training in economical driving.

Various policies, such as "park, talk and walk," as well as those that encourage an officer to avoid excessive idling of the vehicle's engine, are important to be in place and enforced. Even in states with a cold climate, devices are available that will recirculate the heat from the heater core of the vehicle and keep the interior of the vehicle warm for a period of time even with the engine shut off.

Vehicle Purchase Policy

In many cases, your vehicle purchase policy will be dictated by a centralized purchasing agency, which may have little or no knowledge of police vehicle requirements.

Develop a rapport with people in the centralized purchasing agency to make them more aware of your needs and requirements. You might even invite for a purchasing agent to go on a ride-along with an officer to gain a fuller appreciation of how the police vehicle is the officer's “place of business” for eight or more hours a day, as well as the fact that the exposure to high-speed driving conditions in all kinds of weather makes police officers more likely than the general public to be exposed to a crash. The size and weight of a vehicle is still an important factor in surviving a crash. This fact, in addition to the need to transport prisoners, is more than ample justification for the purchase of full-size police vehicles.

When deciding the type of vehicles to be purchased, a state police or highway patrol may require a different type than those driven by city police. The size of the engine will also depend on your individual needs. Certain units, such as K-9 or SWAT teams or vehicles that must patrol country roads, may have special requirements such as those met by vans, four-wheel drive vehicles, and station wagons.

Despite the unfavorable collision record of motorcycles, with proper vehicle selection and intensive training, motorcycle patrols can be extremely effective in rapidly transporting officers through congested traffic conditions to the scene of an emergency. They also provide an extremely low-profile way to apprehend habitual traffic violators who have acquired the knack of spotting a conventional cruiser, as well as a means of escorting dignitaries or leading parades.

If unmarked vehicles are utilized in your fleet, your policy should provide that totally unmarked vehicles driven by plainclothes officers should never be used to stop a motorist except under extreme emergency conditions. Likewise, they should undertake a pursuit only under the most extreme conditions, and then should relinquish the pursuit at the earliest possible opportunity when a marked unit is available.

When an unmarked unit stops a motorist, especially a female motorist late at night, it may be advisable to dispatch a marked unit to the scene as soon as possible to take over the situation.

Vehicle Specifications

You should analyze the needs of your department before preparing vehicle bid specifications. You will want to survey departments of similar size and demographic makeup to determine how they rate specifications for their vehicles. You may wish to look at items such as fuel economy, acceleration, the availability of air bags, and top-end performance.

The protocol for acceptance or nonacceptance of bids should include developing a formula that considers not only the bid price but also the performance capabilities of the vehicle. For example, the formula might give 100 points for the base price, meaning the bidder with the lowest price gets 100 points in the bidding process. Then, vehicle dynamics could account for up to 20 points, acceleration, 30 points, braking deceleration, 10 points, top speed, 30 points, ergonomics and capability of accommodating communications gear, 10 points, and fuel economy by city EPA standards, 10 points.

You may want to specify certain items of equipment such as undercoating, gas shocks, a power seat, power door locks, wiring and ignition main power, ashtray relocation for radio equipment, cruise control, silicon radiator hoses, bumper guards front and rear, locking gas caps with three keys, power windows, power

disconnect for the rear windows, an anti-theft system, and built-in radio wiring in your acceptance formula.

Suspension Systems

Suspension systems in police package vehicles are conducive to fast cornering and turning, and allow the driver to take severe bumps without interfering with the control of the vehicle. If you do not specify a police suspension on your vehicles, you sacrifice ease of driving, officer comfort, ability to pursue and apprehend, and good tire wear characteristics.

Ease of Maintenance

Although a minor consideration in most instances, maintenance might cost you a lot of money if you bid a foreign or non-standard vehicle. An inconvenience such as an inaccessible oil filter can be an expensive proposition when you have a fleet of several cars with the same problem.

Studies and Testing

The Michigan State Police testing program is probably the best in the nation for testing police vehicles from every U.S. and some foreign manufacturers. Copies of these studies are available on an annual basis from the Michigan State Police and from the Bureau of Justice Assistance's Technology Assessment Program.

Vehicle Equipment

The following cautions and concerns apply to the purchase of police vehicle equipment.

- **Strobe Lights.** If you will be patrolling areas afflicted with a lot of fog, rain or other inclement weather, you should give consideration to using strobe lights mounted on the exterior of the vehicle. Strobe lights also draw less current and are easier on the battery. However, unless strobe lights are properly set up, they can be extremely blinding to both motorists and the officers themselves, and there have been concerns that strobe lights flashing at a certain frequency may trigger seizure-type disorders in some individuals. Devices are available to control the intensity of strobe lights.

- **Radar.** If your vehicle is equipped with radar, certain safety precautions should be provided to prevent unnecessary exposure of the officer to microwave radiation. Current information indicates that modern radar sets emit less radiation than a cellular phone or a portable radio. However, it is still advisable to make sure that the radar antenna is always pointing away from the driver or passengers, and if a hand-held radar set is utilized, that it is turned off and stored on the seat when not in use, never in the lap of the driver. All radar equipment within the vehicle should be properly secured to protect the officer in the event of an accident or high-speed emergency operations.

- **Siren.** A siren should be placed in a location to the front of the vehicle to minimize noise levels when broadcasting on the car radio.

- **Color.** Studies have shown that a white color is the most visible for patrol vehicles. There are many schools of thought regarding the painting, striping and coloring of police vehicles. The key here is distinctiveness: You want your vehicles to be readily identified by the public and to instill a sense of pride in the department and the community.

- **Cage.** Equipping your patrol vehicles with a cage and roll bar will provide safety for both the officers and any prisoners that are transported.

- **Tires.** Tires should be the type that is speed rated for highway patrol or city work, as is appropriate.

With the advent of air bags in both the passenger and driver side of modern patrol vehicles, the mounting of needed equipment becomes more difficult. Under no circumstances should these safety devices ever be disconnected. The radio and other equipment needs to be placed in a location where the officer can readily access it without taking his eyes off the road. If that is not possible, then position them a little lower so that the sense of touch can get the officer into the system or using controls that he needs in order to function properly. Many police equipment manufacturers now produce mounting racks that are compatible with air bags.

We hope this brief outline of items to be taken into consideration in the area of traffic enforcement policy will be of value to you. Additional information may be obtained by reading the periodic model policies issued by the IACP Policy Center and the Citizens for Effective Law Enforcement.

The Motorcycle as a Traffic Enforcement Tool

Motorcycle units are a specialized enforcement tool capable of many diverse assignments. A decision to activate a specialty unit of this nature requires long-term management commitment because the expense of such a unit and the use of personnel is often questioned. A successful motorcycle unit requires the assignment of qualified personnel, quality equipment and appropriate management direction. Such a unit can contribute significantly towards extremely effective public relations, the resolution of specific problems that cannot be handled by a normal patrol vehicle, and additional career opportunities for line personnel.

Goal Orientation

The motorcycle unit should not be the result of a haphazard management decision. If you are considering a unit for a medium- to large-size law enforcement agency, plan for an entire detachment or squad consisting of at least six motor officers and a sergeant. Anything less is really not cost-effective or productive. (Such assignments as DARE motorcycles will not be included in this discussion, as this type of vehicle is used for a special safety education assignment.)

Patrol Activities

A motor unit should be used in conjunction with accident problem areas, citizen complaints, special emphasis patrols, or other specific assignments. As a normal practice, the unit should not be assigned to work during the hours of darkness. This type of unit works best when it is highly visible. Citizens see one motorcycle

in an area, and they comment to their friends and neighbors that they have seen a motorcycle working that specific place. However, when four motorcycles are observed working an area, the same civilians will report seeing a "dozen motorcycles stopping every violator." The motor units are so versatile they can work traffic in all directions and have the ability to get to the violator in congested traffic areas. Ideal work assignments for motor units are speed and HOV (restricted commuter lane) enforcement areas, but they can be used for almost any type of assignment. For prisoner transportation purposes, however, consideration must be given to the proximity and availability of conventional patrol units.

The key to patrol assignments is repetition. First, identify the problem and problem area. Assign the motor unit to the location for a week; then return to the problem area once or twice the following week and periodically each month after that. The motoring public will associate that area with motorcycle enforcement. The motor unit thus becomes extremely effective in solving that specific problem. This type of enforcement must be done as a unit to be effective.

Training

Training is a must. If your agency cannot train or have the motor officer trained properly, do not consider a motor unit. A minimum of two weeks of motorcycle EVOC (Emergency Vehicle Operations Course) training should be mandatory, and a yearly recertification program is highly recommended. Without the proper training and a commitment to officer safety, your program would be prone to failure. The commitment is costly, but the results are worth it.

Cost

A motorcycle unit is expensive to equip and to maintain. The motorcycles need servicing every 2,500 miles; tire changes should be required approximately every 5,000 miles; and motorcycles are susceptible to all kinds of minor problems. Having a local service facility and a spare motorcycle for every six officers will eliminate down time for servicing.

Many agencies, such as the Washington State Patrol, assign each motor officer both a motorcycle and a patrol car. This arrangement provides greater versatility to the trooper and the department.

If you will be moving motorcycles around the state for different functions, motorcycle trailers or other forms of transportation are recommended. Typically, two motorcycles are transported per trailer, and the motor officers and their gear occupy the patrol vehicle that is performing the towing operation.

Shifts

A motorcycle unit works best on a weekday shift assignment. Traffic congestion is heavier during the normal work week, and the versatility of the motorcycle is at its full potential. Weekend shifts should be reserved for special events, such as dignitary protection, holiday weekends or special events. The motorcycle unit should avoid late-night shifts or any activity after the hours of darkness. The decreased nighttime visibility of the police motorcycle detracts from its effectiveness, and the added visibility restriction placed on the operator can lead to unnecessary patrol vehicle collisions.

If the department has enough motorcycle units, consider placing your detachments on a 4/10 work schedule to allow for reduced overtime due to court appearances, and increased coverage during the morning and afternoon rush hours.

Inclement weather can reduce the effectiveness of the motorcycle unit. If the temperature drops below 35 degrees Fahrenheit, the motor officer risk factor increases dramatically. Motorcycles, by their very nature, are a single-track, articulated vehicle and need to lean in order to complete a turn. Any type of contaminated surface will reduce the cornering coefficient of the roadway enough to present a hazard to the officer. Alternative transportation should be available to the motor officer during cold weather conditions. Rain is generally not a problem if the proper equipment is provided to the motor officer.

Equipment

Due to the restricted space on the motorcycle, special equipment is needed. Typically, the side saddlebags are used for storage and the rear center box is used for the radio equipment. An absolute necessity is a communication system designed for the weather conditions experienced by the motorcyclist. Helmet transmission capabilities greatly improve the officer's ability to communicate. Each officer needs to be assigned a hand-held radar unit to assist with speed enforcement. The unit supervisor should be provided with a portable cellular phone. Specialized clothing, such as jackets and rain gear, will help to protect the officer during tour of duty.

A biannual equipment inspection should be conducted to monitor the condition of the motorcycle units. The motorcycles should be assigned on a permanent basis to a specific officer, who should be riding the same motorcycle every day. Each motorcycle handles a little differently, and the officer can be held responsible for both the mechanical and cosmetic condition of the motorcycle if the units are assigned to specific individuals.

Public Relations

Motorcycle units are an effective public relations device. They can be formed into a motorcycle drill team, displayed at local or state fairs and at shopping malls to assist in spreading the law enforcement message, and used as a recruiting tool. Children love to sit on the motorcycle. Both the parents and the children are left with a positive image of your department and its personnel.

Personnel

Motorcycle assignment is not for everyone. Officers considered for the assignment should have at least four years of line experience. In addition, they should be self-motivated, mature, safety-oriented, capable of making good decisions, and physically able to handle the assignment. The selection criteria should not be based on riding experience, which has little merit if a good training program is in place. An inexperienced rider will often outperform the experienced rider at the end of the training period. Respect for the motorcycle and the department's goals outweighs riding experience.

Concealed vs. Visible Patrol Tactics

Using unmarked patrol cars as part of any comprehensive traffic enforcement program is a valid consideration, as well as the decision of when to apply hidden, concealed, or highly visible patrol tactics. While some of the issues, such as stealth, uniformity and safety seem obvious, others, such as legal, philosophical and fiscal concerns, may be more subtle.

Marked Vehicles

Advantages:

Fully marked patrol vehicles provide high visibility to the motoring public and serve a two-fold purpose: Not only is a deterrent factor provided, but the public can readily identify a source of help during time of need.

Of paramount value is the physical protection provided by a fully marked patrol car. A light bar, spotlight and full markings offer maximum visibility, whether the officer is conducting a routine traffic stop or providing assistance along the highway. At the scene of traffic collisions or any blockage of the roadway, the protection provided by fully marked units is most valuable. Its presence not only offers physical protection to the officer and citizens at a scene but also warns approaching traffic.

The fully marked patrol car also keeps liability to a minimum. It is obvious and indisputable in its authority. While the full markings and light bar offer an important safety element in a pursuit, they also ensure compliance with statutory requirements for felony charges of eluding pursuit (i.e., the defendant knew that it was a police officer attempting to stop him).

Disadvantages:

The light bars on the marked vehicle, because of wind resistance, negatively affect acceleration and top speed as well as fuel economy.

By virtue of their high visibility, fully marked vehicles create a "halo effect" within their immediate vicinity. Violations, especially flagrant ones, occur less frequently in their presence. Experience indicates that the duration of the "halo effect" is relatively short-lived in the absence of the marked vehicle.

Unmarked Vehicles

Advantages:

Unmarked patrol cars offer, to some degree, stealth and anonymity. Within a police fleet, they can be valuable for travel, inconspicuous transport details, and non-line and supervisory or command transportation, as well as traffic functions.

As a traffic enforcement tool, unmarked vehicles may expose the officer to more frequent as well as more flagrant violations. They can be especially valuable when used in the capacity of an "emphasis patrol" where chronic violators are being targeted. Excessive speed, truck violations, radar detector reliance and erratic drivers can all be targeted with the unmarked patrol vehicle.

As previously noted, improved performance and economy are also a benefit of the patrol vehicle operated without the light bar.

Oddly enough, according to one Illinois survey, the semi-marked vehicle (no light bar) actually holds one safety advantage over the fully marked vehicle. This survey indicates that not only were proportionately fewer semi-marked vehicles involved in collisions, but they averaged less damage than their marked counterparts. The explanation suggested for this phenomenon was that police officers assume that roof-mounted emergency lights project unchallenged

authority. When the light bar is removed, the officer has to become a more cautious driver.

Disadvantages:
Among the concerns with the totally unmarked vehicle are that they offer less visibility when responding to an emergency or when protecting an accident scene or traffic stop, especially when 360-degree protection or visibility on a high-speed highway from some distance down the road is required. Some argue, however, that the difference in safety at an accident scene is not as statistically significant as one might assume.

The unmarked vehicle does not immediately project the authority that the fully marked vehicle does. This reality may present particular problems in certain situations, such as a pursuit, where it is necessary to warn oncoming traffic of the presence of the police vehicle, or when stopping lone female occupants or persons who are carrying valuable cargo. The possibility of someone impersonating a police officer is greater in jurisdictions where unmarked units are used for traffic patrol.

The incorporation of unmarked vehicles into a police fleet also decreases the uniformity of the fleet, and makes it more difficult to investigate citizen complaints of officer misconduct with official vehicles.

Additional Considerations

When comparing the marked to the unmarked vehicle, one must consider to what degree the patrol vehicle will actually be "unmarked."

"Totally marked" would suggest full, uniform markings, light bar, A spotlight, door seals and official plates.

"Semi-marked" vehicles would be the same BUT with light bar removed—"low profile" vehicles.

The “traditional” unmarked car could be considered a vehicle with a standard police package and equipped with no light bar or markings, with varied color but official plates.

“Totally unmarked” vehicles are those with varying make, style and color; no markings; and undercover plates. These have traditionally been limited to undercover, investigative, or administrative use.

Departmental philosophy, goals, and objectives should all be addressed when considering the use of unmarked cars as well as the percentage of their inclusion in the fleet.

The expense considerations regarding fleet selection are many. They include, but are not limited to, purchase price, resale value, operating expense, economy, uniformity of servicing, outfitting expense, and safety and liability.

Each individual department, considering its specific philosophy, goals, and objectives must evaluate the pros and cons of each traffic enforcement tool and select the vehicle that best serves its specific needs.

Concealed vs. Visible Patrol Tactics

Attractively marked police vehicles can be an important component of a community policing or service-oriented policing effort. Through the use of color schemes, logos and slogans, they can be used to project a professional, or even caring, image for the police department. Many police departments have even gone to the expense of establishing “store front police stations” at various locations within their jurisdictions. Such departments, who also park a fully marked police vehicle in a strategic location, where it can surveil vehicular and pedestrian traffic and be seen by motorists and pedestrians, will often find that people will stop and report crimes or suspicious circumstances to the officer. Moreover, the more visible police officers are as they go about

their everyday duties, the more they create an impression of "omnipresence" and the more they are likely to slow down speeders and deter both traffic and criminal violations. In many cases, it seems to make little sense for an agency to go to great expense to bedeck a police vehicle with art work and markings, and then encourage hidden enforcement tactics that undo the deterrent effect of the markings.

The public also sometimes tends to resent what they consider unfair tactics on the part of the police, particularly in a jurisdiction where enforcement efforts are more sporadic than consistent. Unmarked cruisers and "in-the-hole" enforcement techniques making use of concealed or hidden observation may leave a bad taste in the public's mouth. Even the most solid citizen may drive down the road flashing their headlights on and off to warn approaching motorists that a police vehicle is parked in a concealed location. Citizens also sense a double standard when they see police vehicles parked in the breakdown lane at night and running radar with their lights off; they instinctively know that, in most jurisdictions, there is no traffic code exception that legalizes such tactics.

When a law enforcement agency deviates from highly visible tactics, they may adopt either "concealed" tactics—in which the vehicle is not parked in a highly visible location but is nevertheless visible if the motorist is sharp-eyed—or "hidden" tactics whereby a deliberate effort is made to conceal the police vehicle from view. Concealed or hidden tactics may be justified when on the lookout for a wanted person or in an area where regular, visible patrols have been ineffective in getting a particular traffic problem under control. If unmarked cars are to be used as a regular component of traffic enforcement, the agency should consider posting signs that advise motorists that the police patrol with unmarked cars. The agency should also adopt operating procedures that inform the officers how to identify themselves when making traffic stops, and how to handle situations where the person they are attempting to stop may doubt the identity of the officers.

Related Articles and Studies

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Use of Aircraft in Traffic Enforcement

Fixed-wing aircraft and helicopters are increasingly being used for traffic enforcement. Aircraft equipped with time/distance measuring devices are an especially effective means of dealing with serious moving traffic violations, especially on the interstate highway system. Helicopters are particularly useful in monitoring pursuits and preventing the escape of pursued vehicles, as well as hovering over and illuminating the scenes of nighttime felony traffic stops and conducting surveillances involving drug couriers. All types of aircraft are useful in managing congestion at highway crash scenes and special events.

Speed Enforcement

A "Bear in the Air" can easily apprehend frequent and habitual speeders who rely on radar or LIDAR detectors and citizens' band radios to escape detection, as well as many other types of violations, such as driving while intoxicated, improper passing, and following too closely. By timing the progress of a vehicle between measured points marked along the highway, the computed speed is the violator's *average* speed over a distance of a quarter mile or more, whereas radar gives more of an *instantaneous* measurement of speed at a given point. Thus, a driver caught by an aerial/ground team can hardly claim that he briefly speeded only to pass another vehicle or dodge an obstruction in the road.

Statistics show that a combined air/ground team can enforce traffic laws more efficiently than ground units alone, consume less fuel, and provide increased productivity per hour of patrol.

Controlling Public Reaction

When an agency begins using airborne enforcement, it can avoid a negative public reaction by inviting the media to witness enforcement activities. If careful statistics are kept on all activities to guard against claims that expensive aircraft are primarily used to ferry dignitaries around, and if strict guidelines are established as to who can ride in the planes and for what purposes, complaints can be averted. Judges, key legislators, and news media representatives should be invited to observe a routine mission for themselves. Statistics will reveal that the typical speed of violators cited is far in excess of what the average citizen would consider reasonable. In fact, the aircraft will usually prove to be most effective in apprehending flagrant violators, including those traveling at nearly triple-digit speeds. By reducing high-speed pursuits, these apprehensions are accomplished with maximum consideration for the safety of other road users. Finally, aircraft can be instrumental in hunting for escaped prisoners, spotting forest fires, delivering emergency blood supplies to distant hospitals, and marijuana eradication activities. The press and the public need to be made aware of these potential benefits.

Legal Authority

The mission statement of the aircraft unit should contain legal authority for all flight operations including transportation. Most police agencies possess the authority to conduct aerial operations when directly related to a law enforcement function; however, they may lack authority for other operations such as executive transportation. Many agencies are mandated to provide security as well as transportation for governors, mayors, and other officials, and that mandate gives them legal authority to utilize law enforcement aircraft.

Organizational Structure

Most law enforcement aviation divisions are managed by command staff officers who have aviation experience because when managing a fleet of aircraft and crew members requires making decisions specific to aviation and federal regulations. These decisions may be based on knowledge of requirements for licensing, training, flight experience, aircraft maintenance, and inspection intervals.

An aviation manager must also possess the experience necessary to make decisions regarding specific flight requests, with consideration given to suitability of aircraft, runways, weather, and other related data.

Equipment Selection

The majority of law enforcement support missions can be accomplished with light, fixed-wing aircraft. Such aircraft can fly at reduced air speeds safely and efficiently for long periods of time, and are far more fuel and maintenance efficient than rotary-wing aircraft (helicopters). Should a mission require vertical take-off and landing or the ability to hover, then rotary-wing aircraft are the only option. Fixed-wing aircraft are used almost exclusively for highway enforcement activities. They are fuel efficient and far less fatiguing on crew members than helicopters, and can be utilized for a variety of missions including photography and transportation. Generally, high-wing aircraft are chosen for these purposes, as the crew has an unrestricted view of the ground when flying at low altitudes.

Mission requirements will generally dictate equipment selection; however, multi-engine turbo-prop aircraft are preferred for most short to medium-length missions. Their jet engines offer high reliability and improved take-off performance over reciprocating engines, and their pressurized cabins and de-icing equipment provide all-weather capability. Light, reciprocating twin-engine aircraft are generally a poor selection for multi-person transportation because they do not possess the above capabilities.

Aircraft selection is best accomplished through the use of industry consultants, who can provide a wide range of data to aid in your decision process.

Personnel Selection

Commissioned law enforcement officers tend to be effective crew members because their missions routinely require decisions and actions consistent with accepted law enforcement practices. It is generally more effective to train an experienced police officer as a crew member than to train an aviation professional to think and act as a police officer. Most law enforcement agencies have a pool of police officers who have flight experience from which to select crew members.

Maintenance

Aviation departments with one or two light, fixed-wing aircraft may prefer to have their maintenance contracted by a local vendor, while those with helicopters, turbo-props, or multiple fixed-wing aircraft will more effectively provide their own in-house maintenance. The Alaska Division of State Troopers is an example of an agency that requires an in-house maintenance capability. The vast area that the troopers patrol makes the use of aircraft an everyday necessity, and their maintenance crews are capable of tearing down a plane to the basic airframe and completely overhauling it. All maintenance personnel should possess the required federal licenses and receive training for each aircraft they service, even though these may not be federal requirements. When considering the purchase of the first aircraft, an agency should research the ongoing costs—such as the requirement to rebuild an aircraft after a given number of hours of operation—and make sure an adequate operating budget is requested.

Contracted Maintenance Services

Agencies with one or two light fixed-wing aircraft may wish to contract with a vendor for maintenance. This contract should provide for 24-hour call-out, record keeping, FAA or federal document preparation, appropriate logbook entries, and parts procurement.

Transportation Activities

All transportation activities should be directly related to a police function or be mandated by specific laws such as the "requirement to provide transportation for governors," to avoid criticism of misuse. While aircraft are a necessary and efficient means of transportation, they are, at times, viewed by the public as extravagant if utilized for unnecessary transportation. All flights—most importantly all transportation flights—should be recorded on an individual flight sheet with all pertinent data such as destination, crew, flight times, and authorization.

Training

All crew members should receive scheduled flight training that includes an initial instruction course and an annual refresher program for each aircraft flown. Industry standards for complex aircraft crews call for full-motion simulator training for initial courses, as well as annual refresher programs for complex aircraft.

The complexity of the national airspace system, more critical insurance industry standards, and increasingly complex aircraft require higher training standards.

Progressive managers realize that safety is paramount to program longevity, and those agencies that incur accidents historically have

not continued to support aviation programs. A strong training program cannot be overemphasized.

Operations Manual

Each aircraft enforcement unit should have an operations manual detailing conduct for all operations, from flights to aircraft maintenance. Contents should include job descriptions, division orders, flight operations, aircraft maintenance, health, and safety.

Operational Costs

To provide a basis for reimbursement, as well as future budget planning, operating costs per hour should be computed for each aircraft flown. Many agencies make their aircraft available to other governmental agencies on a reimbursement basis, a practice which helps offset operating costs.

Exempt Operations

Federal Aviation Administration (FAA) regulations in the United States provide for certain government aircraft to operate outside of federal requirements for airworthiness, registration, licensing, and some maintenance standards if declared “public use aircraft.” While there may appear to be advantages in doing so, this provision should be used with caution as it can result in degradation of standards.

Insurance

Many government agencies are self-insured and do not purchase additional insurance for their aviation operations. They may feel

protected, but should liabilities arise, generally there is no provision to replace damaged equipment. This results in the governmental entities having to re-appropriate funding to cover losses—funding which is sometimes difficult to achieve. Additional or excess insurance for equipment and passengers, therefore, is strongly recommended.

PART FOUR:

Allocation, Deployment and Evaluation of Traffic Personnel

The Police Allocation Manual

How many officers do you need for your patrol function? Most chiefs would like to answer this question by saying, "As many as I can get." Unfortunately, with the fiscal restraints facing law enforcement today, few chiefs are likely to be offered as many officers as they want. In fact, in addition to being asked to justify the number of additional officers being requested, chiefs are often being asked to account for the number they already have.

Justifying the number of officers needed for patrol is not an easy task. Agencies serving jurisdictions with similar populations may have very different patrol officer needs based on the geographic size of the community, community demographics, the number and size of adjacent communities, the road network, and the historical role of the police in the community. What chiefs need is a formula or model that can take local circumstances into account and provide justification for staffing levels.

Development and Use of the PAM

Recognizing the need for chiefs to justify patrol personnel needs, the Northwestern University Traffic Institute, under contract to the National Highway Traffic Safety Administration, has developed means for providing that justification. The result was the development of the *Police Allocation Manual* and its companion, the *Police Allocation Manual User's Guide* (referred to hereafter as the *Manual* and the *Guide*, respectively, and collectively as the PAM). There are three sets of these volumes, one each for state, county and municipal-level law enforcement agencies.

Purpose of the Manual

PAM is designed to be used by law enforcement agencies whose mission includes the delivery of patrol and traffic services. The *Manual* may be used to determine staffing levels for a traffic division with limited patrol coverage or for a patrol division with traffic responsibilities. The *Manual* is designed to help agencies address the following questions:

1. What is the total number of officers, field supervisors, and command personnel required to provide acceptable levels of patrol and traffic services? and

2. How should a total number of patrol officers be allocated by geographic regions or time periods to maximize agency productivity?

Field Usage

Based on field experience, the PAM has been found to provide both immediate and long-range benefits. The procedures in PAM provide agencies with a logical and explicit format in which to frame requests for additional staff and/or staff deployment. In addition, it is anticipated that the manuals will serve as catalysts for stimulating further discussion and research in staffing and allocation for law enforcement agencies.

The most recent version of the *Manual* is derived from earlier editions that were based on a review of procedures used by law enforcement agencies throughout the United States and Canada. The framework and rationale presented in the *Manual* are the result of a distillation process that identified the "best" procedures, and then modified and blended those procedures into a comprehensive model for determining appropriate patrol staffing levels and deployment patterns.

The PAM model uses *time-based* procedures. The model determines staffing and allocation requirements based on the time required for four major officer activities:

- **Reactive Time.** Time spent on Calls for Service (CFS) activities. The major CFS activities for many agencies are traffic accidents and reports of criminal incidents.

- **Proactive (Self-Initiated) Time.** Time spent on self-initiated activities—such as traffic enforcement, motorist assists, or completing field interrogation cards.

- **Proactive (Patrol) Time.** Time spent patrolling highways and neighborhoods to provide "visibility" for general deterrence and "availability" for self-initiated activities and timely response to reactive time activities.

- **Administrative Time.** Time spent on activities that are not reactive or proactive—on-duty court time, meals, auto maintenance, training, or agency administrative duties.

The central formula in the PAM model determines the *average* number of on-duty officers required per day.

The formula is:

$$\text{Avg No. of On-Duty Officers Required Per Day} = \frac{\left(\text{Avg No. of Officers Req'd for Reactive Activities (Nr)} + \text{Avg. No. of Officers Req'd for Patrol Activitie s (Np)}\right)}{\left(\text{Avg No. of Min Per Hr Per Ofr for Admin. Act. (ma)} - \text{Avg No. of Min Per Hr Per Ofr for Self-Int. Act. (ms)}\right)}$$

$$1 - \frac{}{60} \qquad \frac{}{60}$$

Many of the procedures in the PAM model are used to determine appropriate values for N_r, N_p, m_s, and m_a.

How To Use the Manual

The *Police Allocation Manual* consists of four chapters and one appendix. Chapter 1 provides a brief introduction to the purposes and uses of the *Manual*. Chapter 2 describes the PAM patrol staffing and allocation model. Chapter 3 contains eight work sheets, each with instructions, that provide a step-by-step process for determining patrol staffing levels. Chapter 4 contains one work sheet for determining patrol staffing allocations over several geographic areas or time periods. Appendix A contains work sheets that can be used as alternatives to the procedures presented in Section 5.2 in Chapter 3.

Additional information about the PAM procedures can also be found in the companion document, the *Police Allocation Manual User's Guide*. The *Guide* presents implementation, data definition, and data collection strategies used by the field test agencies. Also included in the *Guide* is a summary of key input values and numerical results obtained by the agencies that field tested the *Manual*. The appendix materials in the *Guide* include a list of the input data required to use the PAM model (Appendix A), a glossary of key terms and notation (Appendix B), a detailed example showing all nine work sheets in completed form (Appendix C), and derivations of all key formulas used in the model (Appendix D).

Copies of the *Manual* and *Guide* are available from the National Highway Traffic Safety Administration. Contact Mr. David Seiler at 202/366-4913

Performance Measures for Police Traffic Services

Assessing how well any organization is doing its job can be a difficult task. Companies that sell products are usually assessed on their sales and profits. For law enforcement agencies, however, there is no tangible product to sell and no profit margin to analyze. While it is possible to track traffic accident or crime rates, these can be affected by many things beyond the control of the police.

Developing Quantifiable Measures

Developing the means to measure the effectiveness of law enforcement is not a new concern; the issue can be traced to some of the earliest critical studies of American law enforcement.

Out of this background, the National Highway Traffic Safety Administration (NHTSA) recognized the need for a comprehensive set of quantifiable measures covering the full spectrum of police traffic services (PTS). Prior to that time, virtually no comprehensive work had been done in the field. Most agencies used few if any performance measures and those in use were localized and not validated.

To meet that need, the Northwestern University Traffic Institute (TI), under contract to the NHTSA, has developed two documents: *PTS Performance Measures, Vol. 1: User's Manual* and *PTS Performance Measures, Vol. 2: Background and Development*. These volumes contain descriptions of 12 key performance measures, work sheets for computing them, information on the use of measures in general, and a set of over 100 additional measures for agencies that want to do more comprehensive measurement.

Why Measure PTS Performance?

The effective management of traffic services (or any other police function) is directly related to the manager's ability to measure the performance of relevant operational and support units. To do this, traffic operations have to be compared to well-established objectives and performance levels. A coordinated set of validated measures is needed that is part of a comprehensive, nationally accepted management framework for PTS.

The *PTS Performance Measures, Vol. 1: User's Manual* is designed to provide a set of validated goals, objectives, and measures that are clearly understood by all users in the same way and that produce useful, reliable data for assessment of agency traffic operations. When widely used, the *Manual* will make it possible for an agency to compare its traffic performance not only internally over time but also against that of comparable agencies.

Many benefits are accrued by the agency that is using a validated set of goals, objectives, measures and, eventually, standards to assess its operations:

- The agency will have the opportunity to begin training staff to think in terms of evaluating their operations with quantifiable measures.

- Adopting such a system will make operational data readily available. Consequently, decisions will be made with a level of confidence that spreads throughout the agency, similar to a fuzzy picture that is brought into focus.

- With this data available, an historical record of operational programs can be developed. This will be useful for judging trends and providing a track record for outside evaluation if needed.

- An agency with clear set of objectives, whose attainment is measured regularly, demonstrates that it is managed effectively. Because it is able to show where resources are applied and what is working, the agency can justify requests for additional resources where analysis shows the need.

The User's Manual Format

The most workable format for making the 12 key measures usable by law enforcement agencies was to place them in work sheets. A separate work sheet was developed for each measure providing users with step-by-step instructions for carrying out appropriate data collection and computations. The measures work sheets form the core of *PTS Performance Measures, Vol. 1: User's Manual*. Other sections of the volume include a manual overview, general guidelines for performance measurement, background information for each key measure, and information on how to use and present the results of measures usage.

PTS Performance Measures Vol. 2: Background and Development.

This volume is designed to serve as a companion to the *PTS Performance Measures, Vol. 1: User's Manual*. This volume contains the full set of PTS-related goals, objectives and measures from which the 12 key measures were selected. It also contains a detailed management framework for police traffic services that served as the basis for the development of the goals, objectives and measures, and the historical background of PTS management. Volume 2 also includes appendices that include an extensive bibliography of literature relating to PTS management and performance measurement and the names of individuals and agencies who have contributed to the development of this project.

How To Obtain the Manual

No matter what the potential value of the materials produced by this project, they will not be of significant use to the law enforcement community unless they are widely used by law enforcement agencies. Therefore, making the law enforcement community aware of the performance measures system and the two *PTS Performance Measures* volumes is important to the project's ultimate success. Law enforcement agencies who want to obtain copies of *PTS Performance Measures, Vol. 1: User's Manual* and *PTS Performance Measures, Vol. 2: Background and Development* can contact Mr. Brian Traynor of NHTSA's Office of Enforcement and Emergency Services at (202) 366-4913.

With widespread use of the performance measure system, the law enforcement community will, for the first time, have a tool to permit them to assess their delivery of traffic services and to make comparisons with other similar agencies.

PART FIVE:

Alcohol and Drugs

Alcohol and Drug Impaired Driving

Alcohol and drugs are part of virtually every culture worldwide. These cultures have evolved over hundreds, even thousands, of years. With the use of these potentially mind-altering substances comes also abuse. Modern societies are mobile societies, and automotive travel is the principle means of movement. For those empowered to ensure safety on the highways, there is an irreconcilable conflict between substance abuse and safe driving.

The cost of this conflict is high, and its greatest impact is, perhaps, on future societies. NHTSA reports that drunken driving crashes are a leading cause of death among young people in the United States. Between 1982 and 1993, 266,291 deaths in this country were alcohol-related—one fatality every 30 minutes. Alcohol-related crashes cost Americans 46 billion dollars a year.

Similar statistics on the effect of drugs on driving are difficult to find. Many drug-impaired drivers are never detected or, when detected, are arrested as alcohol-impaired only. If involved in crashes, they are not chemically tested for drugs other than alcohol. Conservative estimates suggest that thousands die and tens of thousands are injured annually as a result of drug-impaired driving. In a 1988 study by the University of Tennessee Medical Center that analyzed urine samples of crash-injured drivers, drugs other than alcohol were detected in 40 percent of the samples.

Many drug users routinely abuse more than one drug simultaneously. This practice, known as “poly-drug use” may be more common than single drug use in certain settings. Many drug abusers drink alcohol to disguise their use of drugs. In a study of drugged driving arrests by the Los Angeles Police Department, 47 percent had consumed alcohol and some other drug. Poly-drug use can produce a synergistic impairment of the user's ability to drive.

This condition is particularly deadly and is prevalent among younger drivers. A study of 440 drivers, ages 15 to 34 years old, who were killed in California during a two-year period detected alcohol and marijuana in one-third of the victims. More than half had consumed a drug or drugs other than alcohol.

To reduce the highway mortality rate from alcohol and drug impairment requires altering culturally rooted behaviors. Behavioral change may best be accomplished through ongoing programs of vigorous enforcement, coupled with ambitious education and information activities. Thus, there is a broad range of issues involved with alcohol and drug enforcement on the highway.

Effective DWI Statutes

The effectiveness of a DWI statute is measured by its ability to deter impaired driving. The National Committee on Uniform Traffic Laws and Ordinances (NCUTLO) provides a standard in its Uniform Vehicle Code (UVC) by which each jurisdiction may measure its own statutes. Five essential components are identified in the Uniform Vehicle Code's model DWI statute: emphasis on driving ability, statutory blood alcohol concentration limits, compulsory chemical testing, significant punishment upon conviction, and administrative license suspension.

While substances affect different individuals in differing degrees, laws should emphasize the *impairment* of the driver—not the type, legal or illegal, or even the amount of the substance ingested.

The effects of alcohol consumption are well known. Although they vary with the individuals consuming it, all persons are thought to be impaired by alcohol when its concentration in the blood (BAC) reaches 0.08 percent. Statutes should provide that presumptive evidence, per se, exists to suggest that a driver's ability to operate a motor vehicle is impaired when his BAC exceeds 0.08 percent.

The law should require all drivers to submit to a chemical test, or tests, at the option of the arresting officer, to determine the level of alcohol and/or drugs in their blood, as a condition of holding a driver's license. Consent to a chemical test should also be implied when a driver is incapacitated or killed while driving a motor vehicle.

In order to deter impaired driving, the penalty must be sufficient to outweigh the relatively low risk of apprehension. This punishment should include a substantial fine, imprisonment for repeat offenders, and a lengthy license revocation with no provision for "drive to work" licenses or similar provisions that water down the effect of the license revocation. Research by social scientists has indicated that license revocation is the most effective deterrent to drunken driving.

In addition to motor vehicle license revocations through the court system, the process can be speeded up through an administrative license revocation (ALR) law where the police officer is empowered to seize the license of any person who refuses to submit to a chemical test or who tests above the legal limit. The person is issued a temporary license valid for not more than 30 days. The motor vehicle licensing agency holds an administrative hearing and imposes a license revocation if it finds by a preponderance of the evidence that the person was driving with a BAC in excess of the legal limit or refused to submit to a chemical test. Many ALR statutes also provide for license revocation for any person under the age of 21 driving with any measurable or detectable amount of alcohol, which the Uniform Motor Vehicle Code defines as a BAC of 0.02 or greater. Other organizations and authorities recommend the more literal definition of 0.00, because the drinking age is now 21 years in nearly all states, and this age group largely represents novice drivers.

Alcohol and the Commercial Driver

The National Transportation Safety Board studied alcohol and drug involvement in heavy truck accidents in which the drivers were killed; 33 percent of the victims tested positive for drug abuse. These drivers had consumed alcohol, marijuana, cocaine, over-the-counter stimulants, opiates, PCP, or a combination. In addition to DWI, the study indicated that these drivers were also more likely to violate other laws. They were more likely to have prior alcohol or drug histories, were more likely to violate federal hours of service regulations, and more likely to drive with suspended or revoked licenses.

The U.S. Department of Transportation responded to the dangers posed by DWI in commercial vehicles through changes in the uniform Commercial Driver License (CDL) requirements in Title 49 of the Code of Federal Regulations. 49 CFR prohibits commercial operation with a BAC of 0.04 or greater. Regulations prohibit driving within four hours of consumption of any alcoholic beverage. DOT has instituted a mandatory drug testing program among motor carriers, who are required to randomly drug test 50 percent of the average number of interstate operators each year. All 50 states have incorporated the federal regulations into their state motor vehicle laws, thereby making them enforceable by authorized law enforcement officials at the state level.

Specialized DWI Enforcement Strategies

Enhanced DWI patrol is a general term for a variety of strategies and techniques that dedicate manpower for DWI enforcement. This includes roving DWI patrols and saturation patrols in a targeted geographical patrol area. The target areas are identified by a high incidence of DWI or DWI accident rates. Often, saturation patrols are coordinated with several agencies and jurisdictions to multiply their effectiveness and to share resources. This is particularly effective where booking procedures can be consolidated, or if a

particular agency possesses specialized equipment such as a Breath Alcohol Test (BAT) Mobile. BAT Mobiles are motor homes outfitted with breath testing instruments and serve as mobile police stations. They can be brought to the scene in rural areas or stationed on-site at sobriety checkpoints.

The sobriety checkpoint is a highly visible enforcement mechanism. All motorists approaching a designated area of highway are stopped and briefly investigated for signs of intoxication. Its purpose is to maximize deterrence, by increasing the risk perception of motorists who drive while impaired by alcohol or drugs. Evidence suggests that sobriety checkpoints can reduce the number of alcohol-related accidents.

The legality of these checkpoints has been challenged in the courts on the grounds they violate the Fourth Amendment prohibition against illegal search and seizure. The U.S. Supreme Court upheld their constitutionality in 1990 in the case of *Michigan Department of State Police v. Sitz*. The Supreme Court ruled that the Fourth Amendment does not forbid the initial stop and brief detention, without individualized suspicion, of all motorists passing through a highway checkpoint established to detect and deter drunk driving, conducted in conformity with guidelines on operation, site selection, and publicity. Despite the federal ruling, certain states have since enacted legislation or interpreted their state constitutions in such a manner as to forbid these checkpoints.

NHTSA and the IACP Highway Safety Advisory Committee have published operational guidelines that police administrators should consider in order to ensure that sobriety checkpoints are legal, effective, and safe. These guidelines stress that checkpoints should be part of an ongoing program to deter impaired driving, should have judicial support, and should conform to department policy. The location should be pre-selected by management based on statistics, and there should be special warning devices, visible police authority, chemical testing logistics, contingency planning, effective detection and investigation techniques, operational briefings, comprehensive public information and public education

efforts, and post-incident critiques based on data collection and evaluation.

Standardized Field Sobriety Testing

The Standardized Field Sobriety Test (SFST) is a battery of three tests administered and evaluated in a standardized manner to obtain validated indicators of impairment and establish probable cause for arrest. These tests were developed as a result of research sponsored by the National Highway Traffic Safety Administration (NHTSA) and conducted by the Southern California Research Institute.

A formal program of training was developed and is available through NHTSA to help police officers become more skillful at detecting DWI suspects, describing the behavior of these suspects, and presenting effective testimony in court. Formal administration and accreditation of the program is provided through IACP.

The three tests of the SFST are (1) the horizontal gaze nystagmus (HGN), (2) the walk-and-turn, and (2) the one-leg stand. These tests are administered systematically and are evaluated according to measured responses of the suspect.

HGN Testing

Horizontal gaze nystagmus is an involuntary jerking of the eyeball which occurs naturally as the eyes gaze to the side. Under normal circumstances, nystagmus occurs when the eyes are rotated at high peripheral angles. However, when a person is impaired by alcohol, nystagmus is exaggerated and may occur at lesser angles. An alcohol-impaired person will also often have difficulty smoothly tracking a moving object. In the HGN test, the officer observes the eyes of a suspect as the suspect follows a slowly moving object such as a pen or small flashlight, horizontally with his eyes. The examiner looks for three indicators of impairment in each eye: if the eye cannot follow a moving object smoothly, if jerking is

distinct when the eye is at maximum deviation, and if the angle of onset of jerking is within 45 degrees of center. If, between the two eyes, four or more clues appear, the suspect likely has a BAC of 0.10 or greater. NHTSA research indicates that this test allows proper classification of approximately 77 percent of suspects. HGN may also indicate consumption of seizure medications, phencyclidine, a variety of inhalants, barbiturates, and other depressants.

Divided Attention Testing

The walk-and-turn test and one-leg stand test are "divided attention" tests that are easily performed by most sober people. They require a suspect to listen to and follow instructions while performing simple physical movements. Impaired persons have difficulty with tasks requiring their attention to be divided between simple mental and physical exercises.

In the walk-and-turn test, the subject is directed to take nine steps, heel-to-toe, along a straight line. After taking the steps, the suspect must turn on one foot and return in the same manner in the opposite direction. The examiner looks for seven indicators of impairment: if the suspect cannot keep balance while listening to the instructions, begins before the instructions are finished, stops while walking to regain balance, does not touch heel-to-toe, uses arms to balance, loses balance while turning, or takes an incorrect number of steps. NHTSA research indicates that 68 percent of individuals who exhibit two or more indicators in the performance of the test will have a BAC of 0.10 or greater.

In the one-leg stand test, the suspect is instructed to stand with one foot approximately six inches off the ground and count aloud by thousands (One thousand-one, one thousand-two, etc.) until told to put the foot down. The officer times the subject for a 30 seconds. The officer looks for four indicators of impairment, including swaying while balancing, using arms to balance, hopping to maintain balance, and putting the foot down. NHTSA research

indicates that 65 percent of individuals who exhibit two or more such indicators in the performance of the test will have a BAC of 0.10 of greater.

The effectiveness of SFST in court testimony and evidence depends upon the cumulative total of impairment indicators provided by the three-test battery. The greater the number of indicators, the more convincing the testimony. Because SFST is administered according to national standards and is supported by significant research, it has greater credibility than mere subjective testimony.

Alternative Testing Methods

Sometimes, an officer will encounter a disabled driver who cannot perform the SFST. In such cases, some other battery of tests such as counting aloud, reciting the alphabet, or finger dexterity tests may be administered. Several appellate court decisions have indicated that, if you administer a test that requires the subject to respond orally in other than a routine information-giving fashion, such as requiring them to indicate the date of their sixth birthday, and if they are in custody at the time, you should administer the Miranda warning first, because you are seeking information from them that is testimonial or communicative in nature.

Roadside Checkpoints

Roadside checkpoints provide law enforcement personnel with a ready means to monitor and check drivers' licenses, vehicle registrations, vehicle equipment, and the public vehicle identification numbers (PVINs) mounted on the dashboards of vehicles and readily visible through the windshield.

Because some courts and licensing authorities now issue restricted licenses to offenders, roadside checks allow officers to monitor compliance with court-ordered and statutory restrictions. Law enforcement personnel can contact increased numbers of vehicle operators without first having to make traffic stops. Roadside checkpoints also enable officers to conduct vehicle registration inquiries and detect uninspected or unsafe vehicles.

A primary tool used by drug couriers to transport illegal drugs is a vehicle registered to someone other than the operator, such as a leased vehicle. Vehicle registration checks often thwart attempts to transport significant quantities of illegal narcotics and cash.

The roadside checkpoint also affords us a means to quickly review vehicle safety equipment and ensure compliance with special equipment. An officer can determine compliance with regulations pertaining to tires, exhaust, safety belts, mirrors, glass, lights, and related equipment. Vehicles not in compliance can be removed from the roadways or issued citations or defective equipment repair orders.

Site selection is an important aspect of roadside checkpoints. Sites should be selected for their ability to provide for the safety of the public and the police. A safe site requires adequate visibility for approaching motorists, and ample space to park police and violators' vehicles without blocking driveways to nearby residences or business establishments. Further examination of a vehicle may be necessary, and allowing it to remain in the roadway can constitute a traffic hazard. Sites should also be assessed for

daylight and night operations, taking into consideration the previous factors.

DWI Sobriety Checkpoints

DWI sobriety checkpoints are a special form of roadside safety checks. While some states have ruled such checkpoints illegal under their state constitutions, the majority and the U.S. Supreme Court have found checkpoints to be legal when conducted in a manner minimally intrusive on the rights of the traveling public.

Site Operations

Generally, roadside sobriety checkpoint locations should be determined by law enforcement commanders or first-line supervisors, rather than being selected on an ad hoc basis by the line officers who conduct them. To deter drinking drivers, advance publicity of a checkpoint is advisable. Warning signs should also be placed along the highway to notify motorists in advance, and adequate lighting should enable the motorist to quickly spot the checkpoint and react. The warning devices on vehicles and reflectorized equipment worn by officers should be deployed. Be sure that oncoming motorists are not blinded by the lights of police cruisers or other stopped vehicles.

Provide ample room and a safe location to pull vehicles over, by officers in full uniform and readily identifiable. Briefly greet each motorist and explain the purpose of the stop. After a brief conversation and, perhaps, a check of the driver's license, registration, inspection sticker, and equipment, determine whether or not the driver appears to be impaired. If not, quickly wave the motorist on his way. Motorists selected for further investigation on the basis of articulable suspicion should be pulled off the road in a location where additional inquiry can be conducted.

If articulable suspicion of DUI exists, a PBT (preliminary breath testing) device can be employed. Some PBT devices are so sophisticated that they no longer require the motorist to blow into them, but operate as “sniffers” to check for the presence of volatile substances when passed in front of the driver's nose and mouth. If alcohol or controlled substances are detected and the driver appears impaired, administer a field sobriety test, and place the driver under arrest, to be transported to a breath testing site, or a “Batmobile” (a portable breath tester set up in a police van).

When stopping vehicles for roadside checks, devise a system that prohibits the constitutionally impermissible random stopping of vehicles and complies with the provisions of the U.S. Supreme Court decision in *Delaware v. Prouse*. This case can be complied with by either stopping every vehicle, so that each driver has an equal chance of being stopped, or by stopping of every tenth or every twentieth vehicle so that the officer does not exercise individual discretion in deciding which vehicle is to be stopped, and all cars have an equal chance of being selected.

Compliance with these suggestions will result in a constitutionally permissible roadside inspection procedure in most jurisdictions.

Highway Drug Interdiction

Highway drug interdiction is a strategy to intercept the flow of illegal drugs and related currency during transport along public highways. Interdiction includes procedures as routine as observing the interiors of vehicles stopped for traffic violations and as deliberate as developing psychological profiles of suspects, behaviors, and vehicles. Federal law provides for the seizure and civil forfeiture of any assets, including vehicles connected to illegal drug trafficking.

Operation Pipeline/Convoy

The U.S. Drug Enforcement Administration (DEA) is the coordinating agency for highway drug interdiction activities. They administer Operation Pipeline/Convoy, which provides training, accumulates seizure data, and provides information to interested law enforcement agencies throughout the United States.

Operation Pipeline began in 1983 as a joint effort between the New Mexico State Police and the New Jersey State Police. The program continually expanded and now Operation Convoy has been developed to target tractor-trailer transport of drugs. Operation Pipeline/Convoy encourages a coordinated response from law enforcement agencies at all levels to deter the flow of drugs within the continental United States.

The EPIC Data Base

The DEA's El Paso Intelligence Center (EPIC) maintains a database called State Operation Pipeline Seizures (STOPS). It provides

easy access to information relating to date, location, highway, vehicle, occupants, destination, concealment methods, and firearms encountered in seizure incidents. Operation Pipeline reports significant seizures of drugs and currency to law enforcement agencies through weekly teletype messages. An intelligence database, Zones of Drug Intelligence Activity (ZODIAC), shares intelligence information relating to transportation of drugs and related currency. EPIC is accessible 24 hours a day for database inquiries about persons or vehicles that have been involved in seizures or arrests.

Training Availability

Operation Pipeline/Convoy provides training to state and local law enforcement agencies upon request, through dedicated DEA funding. This training is provided by DEA agents and the U.S. Department of Transportation at locations provided by the state or local agency. The program also produces a variety of printed reference materials for law enforcement agencies, and DEA, DOT, and EPIC annually host a commercial vehicle drug interdiction networking conference to promote interagency cooperation and share information. For information regarding any DEA-sponsored program, contact your nearest DEA office.

Drug Recognition Experts

Often the behavior of suspects is abnormal for alcohol impairment alone, or field or breath tests indicate that the suspect's BAC is lower than the level of impairment suggests. Either of these observations is common when encountering poly-drug users. Most jurisdictions have laws that prohibit DWI by alcohol, drugs, or a combination.

Drug recognition experts (DREs) are officers who have been specifically trained to recognize the effects of drug impairment. The DRE examines such suspects and makes trained observations to determine whether to request a blood or urine test, and to guide the laboratory technician toward general categories of drugs to look for in analysis of the sample. The DRE's examination also provides evidence of observable drug effects to help confirm the lab analysis.

Recognizing Drug “Signatures”

DREs are trained to recognize distinguishable “signatures” of certain categories of drugs, identified through five observations by the DRE: vital signs (pulse, temperature, and blood pressure); psychophysical responses (coordination of mind and body); signs of administration of drugs (such as injection sites); eye responses (horizontal and vertical gaze nystagmus, eye convergence, and pupil size under varying light intensities); and physical and behavioral characteristics (such as muscle rigidity or flaccidity, hyperactivity).

A DREs observations cannot substitute for the chemical test or lab analysis. Only such analysis by qualified forensic chemists can accurately identify or quantify a particular drug. This analysis is an important step in the acquisition of gathering evidence in drug-related cases.

History of the DRE Concept

The DRE concept was designed and tested by members of the Los Angeles Police Department in the 1970s, and has been practiced in that department and many others since 1982. Reliability and validity studies were conducted by the Johns Hopkins University Medical Center. The DRE techniques have been recognized by NHTSA since 1984, and the IACP Highway Safety Advisory Committee developed and has administered national standards for training and certification of DREs since 1989. At this writing, more than 3,000 trained DREs work in more than 100 programs in nearly half the states.

NHTSA Prerequisites

NHTSA has individual, departmental, and jurisdictional prerequisites for training of DREs. The trainees should already be proficient in using standardized field sobriety testing techniques and should demonstrate a commitment to DWI and drug enforcement. The sponsoring agency should make an ongoing commitment to deterring impaired driving and provide the command support to allow the DRE to function at maximum effectiveness. Finally, the jurisdiction where the DRE will operate must have a legal and political framework consistent with effective enforcement of drug-impaired driving violations.

NHTSA has also established specific prerequisites as part of its DRE training curriculum. The student must be employed or under the direct control of a public criminal justice agency or an institution involved in providing training services to officers of law enforcement agencies. He must achieve the learning objectives of a two-day pre-school, demonstrate proficiency in the use of the SFST, possess good communication skills or a demonstrated ability to testify in court, and be willing to serve as a DRE upon completion of the training.

The department must have an active drug enforcement and DWI enforcement program; be proactive in training officers in SFST consistent with IACP guidelines; maintain records of individual officers' SFST activities; have access to adequate chemical testing resources, adequate facilities, and equipment to support the drug evaluation and classification examinations; maintain a management information system capable of accurately tracking alcohol and drug enforcement activities; and have the firm support and commitment of the chief law enforcement officer and other appropriate officials.

The state or community must have laws that permit analyses of chemical samples obtained from persons suspected of impaired driving; allow the arresting officer to specify the type of test or tests to be given to suspected impaired drivers (blood, breath, or urine); and specifically provide testing for drugs other than alcohol. Local prosecutors must demonstrate a willingness to introduce SFST evidence in DWI cases and to participate in the training to become familiar with drug evaluation and classification procedures. Local judges must demonstrate willingness to accept SFST evidence in court and to consider DRE evidence in alcohol and drug cases. Finally, the political leadership of the jurisdiction should express support for the DRE program.

DRE Training and Certification Process

Once the prerequisites have been met, DRE training is a three-step process. Phase I is a two-day orientation to the techniques and procedures for evaluating drug-impaired suspects. Phase II is seven days of instruction in drug evaluation, physiology, effects of drugs, and legal considerations. At its conclusion, students are required to pass a written exam. Phase III consists of supervised field training and working with actual drug-impaired suspects. After a student has competently performed a minimum of 12 suspect evaluations identifying three of the seven different drug categories, he must complete a comprehensive written examination before obtaining IACP certification.

Certified DREs must renew their certification every two years. Recertification requires each DRE to perform a minimum of four acceptable evaluations since the date of the last certification, successfully complete eight hours of IACP-approved recertification training, and submit updated documentation of DRE activity. A DRE will be decertified if he fails to maintain standards and certification requirements, or demonstrates substantial unethical or unprofessional behavior.

DWI Breath Testing Instruments

NHTSA annually publishes a list of breath testing instruments rigorously examined for accuracy and approved by NHTSA for their ability to accurately determine breath alcohol concentration, and thus blood alcohol concentration. The department of health or other appropriate agency in each state reviews the NHTSA list and test results, and issues a list of devices approved for use by law enforcement agencies in that particular state.

Captured Samples

Exhaled air can be categorized into essentially three types of samples: tidal breath air, reserve breath air, and alveolar breath air. Tidal breath air is air exhaled in the course of normal breathing. It is the most shallow of the three types. Reserve breath air is exhaled when the body is exerted. It is produced through deeper breathing than tidal breath air, but great volumes of air are both inhaled and exhaled with little residence in the lung. Alveolar breath air is deep lung air. Since breath testing instruments are intended to measure indirectly the concentration of alcohol in the blood, it is essential for accuracy that the breath sample captured by the instrument for analysis be representative of the air in the alveoli of the lung, because it is in the alveoli that the 2100:1 equilibrium ratio between alcohol in the breath and alcohol in the blood occurs.

Infrared Instruments

Infrared breath measuring instruments operate on the principle that each chemical compound has unique infrared energy absorption

characteristics. Ethyl alcohol absorbs energy in the 3.42 micron region of the infrared spectrum. The amount of alcohol contained in a sample can be calculated by observing energy loss when a known energy is applied to the sample. In the infrared devices, infrared energy is projected through a breath sample. A photo-detector identifies a decrease in wave amplitude caused by the absorption of energy by the alcohol. The amount of energy absorbed is equal to the breath alcohol concentration. The greater the alcohol concentration, the lower the wave amplitude. A computer on the instrument determines the breath alcohol content based upon the amount of energy loss, and then applies the 2100:1 conversion ratio to provide a digital readout of the suspect's blood alcohol content.

Because infrared instruments are based upon infrared absorption spectra, which are chemically unique, they cannot be influenced by compound such as acetone, which may have some chemical characteristics in common with ethyl alcohol. In fact, some infrared instruments also provide data on the concentrations of other compounds contained in the breath sample as well as that of alcohol.

Wet Chemical Instruments

When infrared instruments are not used, law enforcement generally uses wet chemical instruments, which operate on the basis of color changes produced through the chemical reaction of ethyl alcohol with chromate salts. These devices obtain a measured volume of alveolar breath and pass that sample through a known volume and concentration of a solution of chromate salt and acid. Chromate salt is yellow. As it reacts with the alcohol in the breath sample, it is chemically altered, resulting in a lighter color. The higher the alcohol concentration, the greater the color change.

A wet chemical instrument measures the difference between the light transmittance of a standard chromate\acid solution and the light transmittance of a sample solution. The difference in

transmittance measured is directly proportional to the amount of alcohol in the breath sample.

Preliminary Breath Testing Instruments

PBT instruments are portable instruments for the purpose of BAC screening as part of the pre-arrest field testing. The suspect driver blows for several seconds through a plastic or glass tube, and the PBT provides an instantaneous determination of blood alcohol content.

In most jurisdictions, the legal basis for the use of these instruments is contained in the implied consent laws. While results of a PBT generally are not admissible as evidence of DWI, they do provide officers with additional objective information to establish probable cause for arrest and further chemical testing. They also help to detect persons who may be suffering from an illness or injury such as diabetes or head injury and are in need of chemical treatment, but would otherwise be mistaken for an intoxicated person.

There are essentially three types of PBTs: electro-chemical, semi-conductor, and disposable chemical.

In electro-chemical PBTs, alcohol in the breath is absorbed into a fuel cell where it is oxidized, producing electrical current. The higher the alcohol content of the breath, the greater the current output of the fuel cell. By measuring the current produced, the instrument determines the breath alcohol content, and the BAC conversion is displayed with the aid of a computer chip.

In semi-conductor PBTs, alcohol increases the electrical output of the semi-conductor. By measuring the voltage output, the breath alcohol content can be determined and the BAC conversion is displayed.

Disposable chemical PBTs are glass or plastic tubes containing a measured amount of the chemical, which is reactive with alcohol. As the suspect exhales through the tube, alcohol contained in the breath reacts with the chemical contained within. The greater the breath alcohol content, the greater the chemical reaction observed.

Non-Invasive or Passive Alcohol Sensors

Passive alcohol sensors (PAS) are instruments that detect the presence of alcohol in normally expelled breath. They require no cooperation from the driver. During the roadside interview of the driver and examination of documents, the officer places the PAS within six inches of the driver's mouth. It contains a small fan which samples the ambient air for examination. An electro-chemical mechanism analyzes the air for the presence of alcohol.

Some instruments are concealed within a flashlight and can be used as a passive or active detector. NHTSA studies indicate these devices are effective during sobriety checkpoints when the decision whether or not to continue breath testing must be made quickly.

PART SIX:

Speed Enforcement

Speed Enforcement Programs

When police administrators decide to initiate a speed enforcement program, they must be willing to take a comprehensive look at the community or patrol area, including its accident data, arrest statistics, criminal activity, demographics, and geography. They should also listen to the opinions of rank and file police officers, traffic safety experts and community leaders, and hold frank discussions with judges, prosecutors, and those who could fund such a program.

Long regarded as a factor contributing to collisions, speed can take two forms: exceeding the posted speed and going faster than conditions, such as heavy traffic or poor weather, permit. Speeding has been found to be directly related to the severity of vehicle crashes. As speed increases, the potential for injury also increases. The speeder has less time to react to a hazard since his vehicle is covering more distance than it would at a slower speed. Speed also increases total stopping distance.

Higher speeds also contribute to the severity of crashes. There is a greater chance of death and disabling injuries when speed increases. The National Severity Crash Study did an intensive investigation of crashes from 1977 to 1979 and found that a possibility of a fatality increases dramatically as the speed of the vehicle increases. The study showed that a driver with a change of speed going 50 m.p.h. was twice as likely to be killed as one with a change in speed going 40 m.p.h.

Planning the Enforcement Program

In order to plan an enforcement program, a problem must be identified—if a problem does not exist, there is no need for a program. Once the problem is identified, specific goals and objectives must be established.

Basing a program on revenue enhancement should be resisted at all costs. This approach is doomed before it starts. Eager financial analysts may quickly see the potential for revenue to feed some government body, but that is not the fundamental basis for any speed enforcement program.

A formal written agency policy should be adopted for speed enforcement programs, and every aspect of it should fit the program. An important part of any program is to have the public share the commitment to the policy. Further, a policy without the organization's commitment to carry it out is a paper tiger and will not accomplish any of its stated goals.

The policy should address the necessary training for implementation and also should also include a section on evaluation. Over time, this policy will need to be further defined and changed. If no formal evaluation mechanism exists, you will have no way to argue the success of the program or defend it against its critics.

Role of Traffic Records Systems

Any speed enforcement program must be supported by a traffic records system to provide a variety of statistical measures concerning speed enforcement. The speed enforcement program will be just one component of that system, which should be a data-driven comprehensive system for all traffic records.

The primary component of a traffic records system is a detailed crash history. Before beginning any enforcement program, a study should be performed to determine where, and why crashes are occurring. This information can often be obtained from the state Department of Transportation or by review and tabulation of crash reports submitted by officers. Once a determination has been made as to the worst locations and the primary causes of crashes, commanders can formulate plans for enforcement efforts.

A study of speed variance should be done on selected roadways in order to see if a speed enforcement program is needed and, if so, on exactly which roadways. Speed variance is the distribution of all speeds on a roadway compared to its average speed; the larger the variance between the speeds of vehicles using the roadway, the greater potential for collisions. As speed increases above the average speed, there is a greater likelihood of a crash.

Another aspect in deciding the necessity of a speed enforcement program is to compare the actual speeds to the posted speed limits. The reaction time to a hazard is approximately three-fourths of a second; when the speed limit is exceeded, the potential for a crash increases because a vehicle will approach a hazard much more quickly than if the speed limit is obeyed.

Speed limits take into account a variety of factors such as geography, roadway design, general safety, and the type of area such as school zones. When these speed limits are compromised, then the factors which helped justify the limits are compromised as well.

Benefits of A Program

A speed enforcement program can do more for a police department than just controlling speeding and reducing collisions. Speed enforcement provides probable cause to stop a vehicle. Once stopped, the occupants can be asked a number of questions and further investigation can be conducted. Criminal charges can result from vehicle stops that started with speeding: possession of stolen property, unlawful flight, possession of stolen vehicles or illegal drugs, illegal immigration, and other traffic charges such as DUI and driving after suspension.

Public Information Aspects

Some of the problems associated with a speed enforcement program can be reduced, although never eliminated, if a careful and deliberate public information and education campaign is initiated before the program begins. Contacting the media is only one way this can be accomplished. Driver education classes and opportunities for public speaking are other ways. Publicizing the training that the officers receive will also emphasize the program. Mall displays and public events are additional ways to acquaint the public with the program.

A police administrator should be prepared for negative feedback on a speed enforcement program. There are always those who will quickly criticize a program or bring up some scandal involving a police department and speed enforcement. Realizing this fact, the police administrator must continue to relate the program to concise goals.

Internal Problems

In addition to objections from the public, police officers themselves may resist a speed enforcement program. Some officers will call speed enforcement “robot work” and not relate their individual efforts to the total law enforcement mission. These problems will be difficult to address.

Avoid setting quotas. Rotate personnel frequently. Officers can schedule speed enforcement for limited hours in a day to reduce monotony. Another method is to combine a speed enforcement program with a DUI enforcement program. The speed enforcement program can be put in place during times when drunk driving is likely to occur. This combination of programs will be varied and receive greater support.

Cost Considerations

The cost of setting up a speed enforcement program can vary from a few hundred dollars to tens of thousands of dollars, depending on the complexity and extent of a program.

An initial consideration is the type of detection devices that will be used to detect speeders. In addition to the many choices and manufacturers of units, discounts are also available for large purchases. Often police departments can collaborate on equipment bids to get the best price.

The equipment will need technical service. If a police department does not have staff to do this, the costs must be budgeted.

Most of the administrative costs of the program can be absorbed into the existing staff. If your department has a weak data support system, this shortcoming will also need to be addressed in cost considerations.

Finally, a department having difficulty implementing a speed enforcement program because staffing may have to budget for overtime.

Expect additional court expenses when a speed enforcement program is implemented. These are difficult to estimate; however, good training should limit the number of challenged cases.

Speed Enforcement Grants

A police department can offset some costs for speed enforcement programs by applying for and receiving federal funds. In 1966, the Highway Safety Act was established under Title 23 of the U.S. Code, thereby making funds available to each governor's highway safety representative to assist states and localities in organizing their highway safety programs. Section 402 funds are available for speed enforcement programs. Currently, eight areas are targeted

for safety programs. These programs often need matching funds and must meet criteria established by NHTSA.

Two other federal sources of funds, Section 408 and Section 410, assist alcohol traffic safety programs. As with the 402 programs, these programs also have specific criteria that must be met to qualify for the funds.

The National Maximum Speed Limit

In 1974, the 55-mph national maximum speed limit was initiated throughout the country by the U.S. Congress as a temporary conservation measure in response to the oil embargo by certain oil-producing countries. Initially, traffic fatalities were dramatically reduced; in 1975 the 55 mph speed limit was made permanent. To qualify for federal-aid highway projects, states had to certify that they were enforcing the 55-mph speed limit.

In 1978, Congress amended the law to require states to achieve certain levels of compliance or risk losing up to 10 percent of their federal highway construction funds. Originally, this compliance limit was set at 70 percent, but was later reduced to 50 percent in 1982. The legislation required each state to set up a monitoring program for checking compliance.

In 1987, Congress amended all the 55 mph legislation to allow states to raise the limits to 65 mph on some interstate highways and some rural non-interstate highways.

ISTEA Legislation

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) allowed the 65 mph areas to become permanent, provided that certain criteria were met. In addition, a formula was developed for states to determine their compliance with the 55 mph areas. This formula included not only weighted speed violations, but information on fatalities and serious injuries occurring on these Nationally Monitored Speed Limit Roadways (NMSL). This legislation also gave the Department of Transportation's secretary the authority to include other appropriate factors in the formula. ISTEA also mandated that data be collected on a scientifically

random basis and that this collection take into account the risk of motor vehicle accidents and the different classes of highways.

States have to submit quarterly reports on surveyed speeds, including median speed, average speed, the 85th percentile speed, and the vehicle miles traveled on each type of 55 mph roadway.

A word about 85th percentile speed is in order. Traffic studies have shown that speed on a roadway resembles a bell-shaped curve. The standard deviation can be determined by the difference between the average speed and the 85th percentile speed. The difference contains 35 percent of the distribution.

This information is used in determining the maximum allowable amount of noncompliance in the different highway categories:

NMSL Road Category	**5 mph**	**10 mph**	**15 mph**
55 mph Freeways	43%	19%	5%
65 mph Freeways	19%	5%	1%
55 mph Non-freeways	27%	9%	2%

The states are then classified into four types and given maximum allowable scores:

1. Those with all three highway types
2. Those with 55 mph freeways and 55 mph non-freeways
3. Those with only 55 mph freeways and 65 mph freeways
4. Those with only 55 mph freeways

Maximum Allowable Scores

1. Those with all three highway types	210
2. Those with 55 mph freeways and 55 mph non-freeways	176
3. Those with only 55 mph freeways and 65 mph freeways	138
4. Those with only 55 mph freeways	75

These scores are the result of the compliance formula. An adjustment is allowed for speedometer variability, sampling variability, and equipment error.

Beginning in FY '94, states not complying with the formula were subject to the transfer of funds as a penalty for non-compliance. Each state is required to have a speed monitoring plan in accordance with the *Speed Monitoring Program Procedural Manual*. This plan requires each state to have a number of speed monitoring stations. Non-compliance is penalized by a transfer of federal highway aid funds from highway construction projects to Section 402 funds (highway safety projects). This transfer will be 1.5 percent of the funds apportioned to the state, and these funds must be used for safety programs with an emphasis on speed enforcement. However, if a state's fatality rate is 20 percent below the national fatality rate, this factor can be used by the secretary to reduce the amount of transferred funds.

The IACP Position

This legislation has been the subject of debate between the states and the federal government. The IACP and others have taken positions in opposition to this legislation. The IACP feels that in some instances the NMSL has diverted enforcement resources from other roads with higher death tolls and from even greater traffic safety hazards such as the drunken driver. The IACP officially favors a reasonable national maximum speed based on actual hazards, and favors incentive payments to states that exceed the minimum requirements, rather than the penalty transfer approach.

Another criticism has been that the 55 mph urban interstate limits are unrealistic in some locations because they depend on population figures rather than on road and traffic hazards. Various studies seeking to prove that the 55 mph limit has had a long-term positive effect on highway safety have come up with mixed results.

Given the present federal law, however, more than local considerations are at stake whenever a police administrator considers a speed enforcement program, because a state has much to lose by not complying with the federal law and regulations. The administrator, therefore, must always implement speed enforcement programs with an eye to these federal mandates.

Speed Measurement Devices

Four primary speed measurement devices are currently used by police departments: speedometer clocks, radar, average speed computers, and LIDAR (LIght Detection and Ranging). Two additional types used to a lesser extent are aircraft and photo radar. Each has its own advantages and disadvantages.

Speedometer Clocks

Although often neglected in today's age of technology, speedometer clocks are the least expensive method of clocking speeders and can be extremely effective. Radar and LIDAR detectors are useless against an officer who is proficient in speedometer clocking.

The patrol car speedometer is used to pace vehicles. The most important component of this method is an accurate speedometer that is certified by the factory. A speedometer can be calibrated several ways: fifth wheel attached to the rear of the vehicle; using a stopwatch that has been certified to clock the patrol car over a measured course; or using a dynamometer, which allows the patrol vehicle wheels to rotate in place while the speedometer is checked against the device for discrepancy (probably the best method and also the most expensive).

The advantage to the dynamometer method is that it can be combined with maintenance procedures so the patrol officer does not have to certify the speedometer while on patrol. Using the dynamometer also allows more administrative control.

Radar

An acronym for “Radio Detection And Ranging,” radar involves the transmission of electromagnetic waves that reflect off a moving object. When the wave is reflected, it changes frequency and is interpreted by the radar unit in a speed calculation. This change is referred to as the Doppler effect or Doppler shift. Radar is used in a stationary or moving mode.

Although this is the most popular technology for speed enforcement, using radar has been extensively litigated throughout the country. Recently, police officers and others have raised health issues concerning the risk of cancer from using these devices. All recent evidence indicates these claims are groundless, but litigation is still pending. Since most cancer studies involve longitudinal research, 20 or more years may pass before scientists lay this issue to rest.

Average Speed Computers

Mounted in the patrol car, an average speed computer is a device that uses a programmed computer to measure speed by dividing the distance traveled by the time it took to travel the distance. Whereas radar and LIDAR devices are primarily used to measure *maximum* speed, average speed computers measure *average* speed over a specified distance. Average speed computers can be used in both a moving and stationary mode. Since it does not use electro-magnetic waves, it is undetectable by radar detectors. The most common brand of this technology is VASCAR.®

LIDAR

Laser or LIDAR (Light Detection And Ranging) has recently been adapted for law enforcement use in speed measurement. LIDAR devices use an infrared light wave emitted at frequencies that allow the beam to be focused into an extremely narrow target area. The devices are usually used in the hand-held mode. They can be used through the glass with reduced range; therefore, an open window or exterior use is preferred.

LIDAR has become more popular with the proliferation of radar detectors. Detection of laser beams is possible but the benefit of devices that detect the laser beam is limited. This is due to the fact that when the device intercepts the laser beam, this corresponds to the clocking of the vehicle with the LIDAR device. In addition, most of these LIDAR devices are mounted inside the vehicle, a location which reduces their ability to detect the laser beam.

The theory behind laser technology is that speed is calculated by dividing the distance by the time of the light pulses of the laser (S = D/T of light pulses).

Aircraft

This method of speed enforcement uses the combination of ground-based units and a fixed wing airplane. A measured course is identified by painted lines on the pavement. This method of enforcement is based on the formula Speed = Distance/Time. As vehicles travel on the measured course, a stopwatch is activated in the airplane. Once the course is completed, the speed is calculated and, if the vehicle was speeding, the description is broadcast to the ground units. The vehicle is pulled over and the vehicle and speed are verified. The aircraft, typically the high-wing design that allows an unobstructed view of the ground, can also be used for marijuana eradication activities, emergency transport, traffic monitoring, surveillance, and other law enforcement programs.

Photo Radar

A extension of regular radar, this technology uses photography to capture the vehicle and license plate when the violation occurs. The date, time, and speed can be superimposed onto the photograph. Some can also capture the image of the operator in the picture. Photo radar can be used in manned or unmanned applications. It is usually used in jurisdictions where specific legislation permits its use and where vehicles have both front and rear plates.

Drone Radar

This method uses an unmanned radar station to trigger motorists' radar detectors. The theory is that when the detector alarms sound, the drivers will slow their vehicles down because they will not know where the police officer is. These units can be mounted in moving vehicles, concealed in highway signs, or installed in highway work vehicles and many other locations.

The FCC and NHTSA have regulations that must be met in order to use this method of speed enforcement. Overuse of this method will reduce its effectiveness.

Testing Programs for Speed Measurement Devices

Each manufacturer of a speed measurement device has a method of certifying their units. All the manufacturers' guidelines should be followed. In addition, a technician, either employed or retained by a police department, should certify the units at least annually because most new devices come with a one-year certification from the factory. An annual check will help in quality assurance of the devices. There may also be legislative requirements in different

jurisdictions which should be followed. A judicial ruling may create a certification schedule in a given jurisdiction as well.

The IACP also has a testing program using regional testing laboratories located in; Warrensburg, Missouri; Davis, California; East Lansing, Michigan; and Jacksonville, Florida. This program was set up in the late 1970s after police radar had been in existence for several years. NHTSA and the LESL (Law Enforcement Standards Laboratory), a division of the National Institute of Standards and Technology (NIST), entered into a cooperative agreement to develop performance and safety standards. In 1982, the IACP began to publish the results of this testing. Most of the manufacturers of radar units submit units for testing and their products are listed on IACP's Consumer Products List (CPL).

To be listed on the CPL, a manufacturer submits its new units or prototypes to a testing laboratory. When the model passes, 200 production units must then be submitted for Critical Performance Testing (CPT), at the manufacturer's expense, before any units are sent to the field for actual enforcement use. In addition, three times a year, four units off the shelf are tested at the manufacturer's expense. If the testing reveals that insufficient units are passing, more units will be tested. If the failure rate is too high, then the units are recalled by the manufacturer and removed from the CPL.

If police departments do not have technicians available to test in-service units, the IACP radar testing program can provide this service at a minimal expense.

Safety Precautions

Department policies should specify certain safety procedures to be followed when operating police traffic radar. The antenna should be pointed away from the officer, and the unit turned off when not in use. A hand-held unit should not be placed between the legs when transmitting, or in any other location close to the body. However, the testing process to qualify for the CPL has shown that the typical police traffic radar unit emits less radiation than cellular telephones or hand-held portable radios.

Some police departments have gone the extra step to mount the radar antenna outside the patrol car to avoid excessive exposure to microwave radiation bouncing off objects in the vehicle's interior. This method is even more popular as today's police vehicles come equipped with driver and passenger-side air bags, thus limiting the amount of equipment that can be mounted on the dashboard.

The recent use of LIDAR or laser devices is being studied by IACP and NIST, with certification standards due as of this writing. The Michigan Speed Task Force has developed standards for the use of laser in its state and maintains a list of approved units. A Class 1 unit is recommended for safety and has the lowest classification of risk. Since a laser unit emits light waves, a eye safety issue has been raised. The Class 1 designation should make the unit safe for the eyes, but certain precautions are in order. Officers should not look directly into the aperture of the devices at a distance of closer than eight inches for an extended period of time. Precautions such as this should be discussed thoroughly during training.

A police department should keep both maintenance and calibration records for all units. These files should be kept for the life of the unit.

Speed Enforcement Policy

Every police department utilizing a speed enforcement program needs written policies and formal training guidelines. The policy should contain a statement identifying at what levels discretionary mandatory enforcement will take place. In some departments less a certain number of miles per hour over the posted limit is allowed discretionary enforcement and any speed over this amount requires a mandatory ticket. If you set such a requirement as this, recognize that not all motorists have accurate speedometers, and the tolerance should allow for at least normal speedometer error. Some departments allow their officers to issue warnings at differing speeds depending on time of day and road, traffic and weather conditions. Still other departments determine the 85th percentile speed—that is, the speed at which 85 percent or greater of all traffic is traveling below, and set a tolerance for each roadway depending on that figure. All policies should include a monitoring function to ensure compliance.

A policy should include the following areas:

1. Qualifications of officers
2. Recertification of speed measuring devices
3. Supervision
4. Selecting a Location
5. Positioning the Unit
6. Operation and Calibration of radar or LIDAR
7. Apprehension
8. Arrest and Detention
9. Prosecution
10. Written Warnings
11. Storage of the Radar or LIDAR Units
12. Logs (Implementation and Maintenance)

There also should be tickler files for the recertification of radar and LIDAR units and formal maintenance procedures.

Officer Training

The initial officer training can be conducted by the manufacturer of the unit to qualify officers as instructors. If a new mode or unit is being used, the manufacturer should agree to be available for court testimony in order to obtain case law on the unit as a valid measure of speed detection. In addition to manufacturers' guidelines, police departments should supplement this with their own training. NHTSA publishes a textbook entitled *Basic Training Program In Radar Speed Measurement* for both instructors and trainees. Other publications are also available to assist with instruction. It is important not only that the device is appropriate for speed enforcement, but that officers are qualified to use the units properly.

Purchase Guidelines

Purchasing guidelines for speed detection devices must take price, reputation, and service into account. Government purchasing and bid laws will also influence the purchase. All units purchased should be on the IACP Consumer Products List.

Individual needs also must be taken into account. One department may want a padded radar dashboard unit because of safety considerations, while another might want the unit with the top painted white to reflect heat. Each of these concerns needs to be negotiated with the company representative.

You may also wish to contact other police departments in the area to find out what units they are using and to determine if a larger purchase will affect the price. Mounting considerations in the new police vehicles may also dictate the type of unit that can be purchased. A department should try to obtain a unit or two for a trial basis so that line officers can comment on the units that they prefer.

Advantages and Disadvantages of Different Speed Enforcement Devices

Speedometer. One of the least expensive and readily utilized methods of speed enforcement is using the patrol vehicle speedometer to do clocks; however, this method can only be used in the moving mode. It can be used in any type of weather and terrain and during any light conditions. The speedometer must be calibrated regularly and must be used responsibly. This method is somewhat subjective because it is done by pacing. It is recommended that pacing be done for at least two-tenths to one-half mile, at a speed at which the violator's vehicle is gaining just slightly on the officer. When a speeding car is detected and the clock is completed, the vehicle should be pulled over. A violator should not be followed for miles in an attempt to determine his maximum speed. Since one of the purposes of speed enforcement is to make the roads safer, this is not accomplished by allowing a speeding vehicle to continue in a hazardous manner for long distances.

Traffic conditions, weather, and terrain may make a good clock difficult. Some jurisdictions have statutes that prohibit driving at a speed greater than reasonable, or careless driving, which may apply. If an officer is a good observer and can document that the vehicle passed all other vehicles, screeched tires while turning, jumped while going over bumps in the roadway, and exhibited other indications of speed, convictions can be obtained.

Radar. Radar is the most widely used and accepted speed detection device. The costs vary. A reliable unit may be purchased for under $2,000. These types of units have many advantages: they can be used in a stationary or moving mode, are available in a hand-held variety, and give both audio and visual indications of speed. Since the units are highly accurate and reliable, they are widely accepted in court. The units can be stored in a carrying case and moved from vehicle to vehicle. If a department has several, they should

devise an internal marking scheme to keep all the units accounted for and maintain the certifications with the proper unit.

One disadvantage of radar units is that, unless the operators have been properly trained, the wrong motorist can be cited for speeding. Radar has a wide beam combined with a range of three-fourths of a mile or more. Because the devices are not target-specific, but rely on the operator for accuracy, they are more difficult to use in congested traffic areas. Training can help officers use radar in congested traffic areas but it will be more difficult than using it in less congested areas.

LIDAR. LIDAR or laser units have some distinct advantages over radar but have their own disadvantages. LIDAR units are expensive when compared to radar—approximately $4,000 to $5,000 each. The units are target-specific: The vehicle aimed at is the vehicle detected. Unlike radar devices, these units are immune to electrical interference, such as that from car fans. LIDAR units work well in city environments and on heavily traveled roadways.

The disadvantages of LIDAR units are that they must be used in a stationary and hand-held mode. Their range is approximately 1,200 feet. This technology is not accepted in all courts. Once the technology receives judicial notice it should receive general acceptance in the courts. Rain and fog reduce a laser's range as well. When debating the purchase of radar or LIDAR devices, the issue is not that one is better than the other; each complements the other and are suited for its own purpose.

Average Speed Computers. The use of average speed computers is also worthy of consideration. It emits no beams and can be used in all weather and traffic conditions. It is target-specific and can be used in a moving or stationary mode. Some consider this a better measurement of speed, since it measures average speed over the target area, rather than maximum speed, as do other devices.

The disadvantage of the average speed computer is that it is permanently mounted in the patrol car. Reaction time by the operator could affect the determination of speed, although proper

training can resolve this problem. If any error occurs in the operation of the unit, it should be to the benefit of the offender. Since some jurisdictions use fixed sites, roadways may need to be marked by the highway department.

Aircraft enforcement uses the same basic formula that average speed computers use, but the measurement is usually accomplished by a certified stopwatch or a computer. The main advantage to this method is that it is very difficult to detect. Research by the Maine State Police has indicated that the actual productivity of combined ground/air enforcement exceeds those of ground enforcement units alone, and that aircraft enforcement is actually a very efficient means of apprehending violators.

In addition to the extra manpower required on the ground, aircraft enforcement has other disadvantages. The roadways must be marked and the area must also be free of any obstructions so as not to interfere with the identification of any suspected violator.

A police department will probably not purchase an aircraft solely for the purpose of apprehending speeders. The initial cost to purchase and then maintain an aircraft are expensive—one of the main disadvantages of using aircraft. More likely, traffic enforcement is one of many duties for which an aircraft will be used. Traffic enforcement is only one facet of the total mission for an aircraft.

Finally, this method requires additional officers for court testimony. Some agencies will attempt to limit the necessity to have aircraft crews testify in court by having officers from the ground accompany the pilot so they can testify when the case comes to court.

Photo Radar. Photo Radar uses the same technology as other radar units but can be used at both manned and unmanned locations. It is effective if set up properly and can also be used to photograph traffic light violators. The potential for detection is enormous since the violators are not stopped, but a permanent record is made of each for processing later.

Photo Radar. Photo radar is controversial because of the photographs and privacy issues. Vehicles must have front license plates so that both vehicle and driver can be photographed. A rear plate method can be used if driver identification is not required. This method may need legislation to make speeding charges the civil responsibility of the owner of the vehicle.

Although photo radar is technically sound, it may not be accepted by the community because a police officer is not operating the unit for each target vehicle. This method also does not allow any personal contact by the police officer who otherwise could exercise discretion by considering special circumstances, such as family emergencies or medical problems, that may cause an individual to speed. While some might view this as a disadvantage, photo radar advocates would argue that officer discretion is not uniformly or fairly administered. Photo radar eliminates any arguments about the speed of the vehicle from the discussion between an officer and the violator at the scene of an arrest and moves this discussion to an administrative or court hearing. Some feel that since the photo radar does not discriminate that this method is the most fair type of speed enforcement that exists. This method does eliminate the possibility of finding other violations of law such as carrying of contraband, or stolen property. Other offenses such as driving with a suspended license or without registration, or even driving under the influence are not discovered using this type of technology.

PART SEVEN:

Collision Investigation

Collision Investigation

Too often today, police agencies fail to investigate traffic collisions because of a lack of personnel and a shift in priorities. When this happens, we fail to "protect and serve" as we should.

Purposes of Investigating and Reporting Collisions

Ideally, a collision should be both *investigated* and *reported*. Police administrators must be mindful of the purposes of investigating and reporting. The ultimate purpose is to make our roads and highways safe. More immediate purposes are to combat criminal activity, promote safety, and ensure just results in civil litigation.

Detecting At-Fault Drivers. Although investigation frequently reveals who is primarily responsible for the collision, sometimes technical reconstruction is required. The at-fault driver can be charged with the violation(s) that caused the crash and, if convicted, can be punished or given remedial driver training. If the number of previous violations is sufficient for suspension of the driver's license, the individual can be taken off the road. If every collision is not investigated as a matter of policy, many individuals who should be charged will slip by and may become involved in other, possibly fatal, crashes.

Detecting Incompetent Drivers. A crash may be caused by a driver's physical or mental deterioration through illness or age. The investigator can request retesting to determine if that individual can still drive safely, if restrictions should be imposed on him, or if his driving privilege should be suspended or revoked. In the absence of an investigation, such a driver would continue to be a highway menace.

Apprehending Criminals. Finally, the crash vehicle may be stolen or being used for an unlawful purpose—transporting drugs or even abducting a kidnap victim. If the crash is not investigated, the stolen vehicle or contraband might never be recovered nor the abducted person rescued. The driver may be evading arrest or recapture. If injured in the crash, the driver may be unable to flee and can be apprehended by the officer arriving at the scene. Without an investigation, these criminal acts might not be discovered and penalized, thereby causing the deterrent value of our laws to be eroded and making enforcement more difficult.

Motor Vehicle Homicides. Vehicles have been used to cover up or carry out a homicide. A body lying on the road and showing signs of having been run over by a vehicle may look like an ordinary hit-and-run, when actually the victim was murdered earlier in some other location by some other means. A driver found at the bottom of a gorge pinned behind the steering wheel may appear to have fallen asleep and driven off the roadway, whereas he was really bludgeoned unconscious, buckled loosely into place behind the wheel, the accelerator pedal jammed in open throttle position and the selector lever pulled into DRIVE to send the vehicle over the brink. To the unpracticed eye, the injuries from the beating might be mistaken for those received from the impact of the vehicle with the bottom of the gorge. The victim's death may have resulted not from the previous blows but from internal injuries at impact. Unless such so-called “accidents” are thoroughly and critically investigated, sometimes with the help of a forensic pathologist, the foul play might not be discovered, and the perpetrators might get away with their crime.

Uninsured and Unlicensed Drivers. The above purposes of collision investigation are the most familiar to the public. Such cases are highlighted regularly on television and in the newspapers. Yet, other purposes that may not receive any publicity are essential to traffic enforcement and contribute toward making our roads safer. An investigation may reveal that the driver has no liability insurance coverage or a valid license. A victim suffering property loss, injury, or death of a family member may find it costly,

difficult, or impossible to receive compensation, without the findings of a collision investigation.

Defective Equipment. Equipment problems also cause collisions. The crash vehicle may be uninspected and have a leaky exhaust system or worn brake linings or pads. It may not meet the design and equipment standards mandated by law. This is especially important for heavy commercial vehicles, whose greater size and weight make them especially formidable in a crash; or for a taxi or bus, whose deficiencies can expose many riders to injuries or even death. Without an investigation, such vehicles might not be taken off the road.

Vehicle Design Defects. Investigations may uncover problems in the design of the vehicle or equipment. It may be prone to roll overs, have its fuel tank located where it is particularly vulnerable, or come equipped with tires susceptible to failure when underinflated. With no policy requiring the investigation of every collision, such findings might never come to light or be recorded; inherently dangerous designs would never be corrected. When the reports and the statistics do not support the charges, a record of the investigations of all crashes gives manufacturers a means to defend against wrongful accusations of faulty product design.

Roadway Defects. An investigation can reveal problems with the roadway design or conditions, or with traffic control devices. Such problems may have contributed to similar accidents in the past and continue, unless reported to the Department of Transportation. How many times have drivers skidded off a wet pavement while negotiating an incorrectly banked curve, or sideswiped a car when attempting a last-second lane change on a highway with confusing or awkwardly placed turn arrows, or an exit sign hidden by an overgrown shrub?

Insurance Settlements. Unrelated to safety but important to those affected, an investigation can provide a means for civil litigation to help the aggrieved parties recover just compensation, and establish a basis for insurance companies to determine payments for property damage, personal injury, medical expenses, and

disability. A perceptive, well-trained officer will detect crashes that have been staged to bilk insurance companies—a crime now of such proportions that it adds substantially to the cost of insurance for every motorist. If law enforcement settles for a filed report based solely on a telephone conversation between the desk sergeant and the driver, insurance fraud will flourish.

Collision Reporting

A collision should be properly investigated by a qualified officer; it is also important to file a standard accident report for every collision. These reports allow the federal and state governments and law enforcement agencies to compile statistics to assess objectively the effectiveness of police traffic enforcement. The concept of selective traffic law enforcement rests on data that shows the violations that actually cause serious crashes, and the locations and times when they are most likely to occur. These statistics also help the police gauge the level of enforcement within each area of their jurisdictions, beef up high collision areas, and move units from one location to another as required. Insurance companies use these statistics to sort collisions by sex, age, location and demographics, to aid in setting rates.

Levels of Investigation

The severity and circumstances of a collision will determine the proper level of investigation. In their order of complexity, the levels are usually called *at-scene investigation*, *advanced (technical) investigation*, and *reconstruction*.

At-Scene Investigation. Basic to any collision is an at-scene investigation. Ideally, the first responding officer will conduct this and file a standard accident report. Certain evidence, such as incipient skid marks or temporary view obstructions (a vehicle parked on the shoulder at the time of the crash), tend to be short-lived. The sooner they are recorded, the better. But the officer's

first task is to make the collision scene safe and prevent a second accident. Traffic must be immediately redirected by means of cones and flares. Next, the officer must care for the injured, summoning a rescue unit if needed, and then observe and record facts pertaining to the collision. These include all measurements, such as the length of tire marks and the final rest positions of collision vehicles and bodies from permanent reference points; the drag factor of the roadway surface; view obstructions; the condition of the collision vehicles, including lamps and tires; the condition of the roadway, traffic signs and signals; and the weather and environmental conditions (daylight or nighttime). A field sketch should be made to show the direction of travel of the vehicles and the location of all relevant objects.

To document damage, the officer should photograph the vehicles and the collision scene, and permit measurements to be made from the photos if necessary. Photos are particularly persuasive in court. Finally, the officer should check all drivers for indications of intoxication or other impairment, interview all drivers and witnesses, and record their addresses and telephone numbers.

The at-scene investigation is concerned primarily with data gathering and recording. It may also involve some interpretation of the collected data. For example, from the skid mark measurements and the drag factor, the officer can calculate the minimum speed of the vehicle at the beginning of the skid. Ideally, every officer should be qualified to conduct an at-scene investigation. An officer can become qualified by attending and successfully completing a state-approved course. Such courses generally consist of classroom and hands-on training of 40 to 80 hours. They may be conducted by a municipal police department, a county sheriff's office, the state highway patrol or state police, a POST council, or by a private law enforcement training organization or institute.

Application of Technology to At-Scene Investigation. The Washington State Patrol and other agencies have discovered that the use of LIDAR devices in their distance measurement mode can save considerable time at crash scenes, provide more accurate measurements, clear the roadway and restore the traffic flow in a

speedier fashion, and return the investigating officer to patrol duties.

Using LIDAR for crash measurements requires the proper training of the officers who will use it; in addition, laser targets must be developed, carried in the patrol vehicle, and deployed at locations where the point of object to be measured from does not present an adequate target for the LIDAR device.

Advanced (Technical) Investigation. Whereas an at-scene investigation should be conducted for *every* collision, an advanced investigation is undertaken only for *serious* collisions. Its purpose is to collect additional data for determining charges to be brought against one or more of the individuals involved, or for litigation reasons, or for laying the foundation for the next level of investigation, reconstruction.

Unlike the at-scene investigation, which is initiated immediately or as soon as practicable after the collision, the advanced investigation may take place at a later time. Data, including that from the at-scene investigation, will be interpreted as well as collected. Since much of the evidence at the scene may already have disappeared, the advanced investigation may depend heavily on the completeness and accuracy of the data recorded in the at-scene investigation.

The advanced investigation may be conducted by the same officer who conducted the at-scene investigation. He is expected to

- determine the drag factor of the skid surface(s) and the minimum initial speed of each vehicle (unless already caluculated in the at-scene investigation);

- determine time-distance relationships and solve momentum problems

- match marks on the roadway with the parts on the vehicle causing this damage to determine the point of impact;

- determine what is impact damage to the vehicle and what is contact damage;

- match the damaged areas of the vehicles to determine the principal direction of force (PDOF);

- correlate injuries with the parts of the vehicle impacted by the occupants (occupant kinematics);

- determine if headlamps and other lamps were ON or OFF at impact;

- determine if any fire damage occurred before or after impact;

- determine if a mechanical or electrical failure contributed to the accident (this may require the help of a specialist); and

- prepare a scale drawing of the scene from measurements and notes made at the scene or, if necessary, from photos (photogrammetry).

Officers can receive advanced investigation training by successfully completing a state-approved course at this level. The length of this training is up to 80 hours, and includes classroom instruction and hands-on activities. A prerequisite is usually the completion of a basic collision investigation course, such as at-scene investigation, or several years' practical experience in at-scene investigation.

Collision Reconstruction. Reconstruction is the highest of the three major levels of investigation, and is usually undertaken only in support of litigation or research. Its main purpose is to determine *how* the collision occurred. It deals primarily with direct and immediate causes of the crash. These frequently entail behavioral errors on the part of the drivers. The findings are mostly objective, supported by the facts uncovered or determined by investigation at any of the three levels. The purpose may be extended to attempt a determination of *why* the collision happened (called “cause analysis” and sometimes regarded as a separate and even higher level of investigation). This phase looks at all the

circumstances of the crash in order to identify the probable and possible contributing factors. The findings are to some extent speculative. Take, for example, a case where two vehicles crash head-on. The *direct* cause is that one vehicle suddenly crossed the center line and encroached on the opposite travel lane, placing this vehicle in the path of an on-coming vehicle. The probable *indirect* cause may be that the driver of the encroaching vehicle fell asleep, inasmuch as the collision occurred at 3:00 a.m., and the driver had been driving continuously since the previous noon.

Reconstruction expands on all the principles of at-scene and advanced investigation. In addition, it includes impulse, or the force exerted by each vehicle upon the other, and energy loss through crush, or the extent of deformation of the vehicle caused by the impulse. It may involve experiments to ascertain performance and other capabilities of the vehicle, or to determine driver and pedestrian behavior. Reconstruction entails assembling all the technical data required to build a case for court.

Among the duties of the reconstructionist are the following:

- cooperating closely with the attorney, if litigation is involved;
- interpreting photos, information contained in field notes, and all other recorded data from the at-scene and advanced investigations;

- matching paint, glass and vehicle parts found at the scene to the vehicle being sought after its driver fled;

- determining the driver of each vehicle;

- determining occupant movement (occupant kinematics) and how injuries were received;

- checking all calculations made previously and perform any additional calculations required;

- reaching conclusions as to how the collision occurred;

- being able to prove the conclusions or offer persuasive evidence in support of them; and

- preparing scale diagrams of the scene, vehicle and body positions, time-distance relationships, and momentum vectors as needed for the courtroom presentation.

Although a reconstructionist usually has greater depth of knowledge and broader experience than an investigator qualified only in at-scene or advanced investigations, and can make more inferences from existing data, he is very dependent on the thoroughness and quality of the investigations conducted at the scene, and may have to work largely with the evidence that has been preserved and recorded earlier.

Officers can receive training in reconstruction by attending a state-approved course of up to 80 hours in length. Such a course combines classroom instruction with hands-on activities. The prerequisite is usually successful completion of a state-approved course in advanced (technical) investigation.

Use of Statistical Databases

Computers make it easy to gather many facts into a database. Today, highway safety databases are available to government, law enforcement agencies, insurance companies, or any interested party. Their scope ranges from highly specialized to very broad. Several are compiled by the National Center for Statistics and Analysis (NCSA) operated by the National Highway Traffic Safety Administration (NHTSA).

NHTSA's Fatal Accident Reporting System (FARS), established in 1975, collects and tabulates data on fatal accidents from all 50 states, the District of Columbia, and Puerto Rico. NHTSA contracts with each state government to provide information on fatal crashes within the state. Using a standard format, analysts input data directly into NHTSA's central data file by microcomputer and modem. Each crash report has 90 coded elements that are reported on three forms:

(1) accident form (time and location of crash, first harmful event, if hit-and-run, if school bus involved, number of persons and vehicles, weather conditions);

(2) vehicle/driver form (vehicle type, role of vehicle in crash, impact points, most harmful event, driver's record and license status); and

(3) person form (age and sex of each person, whether driver/passenger/non-motorist; alcohol and drug involvement, injury severity, restraint use).

Although FARS is focused strictly on fatalities, its data may be used in evaluations pertaining to a wide range of issues, among them, legal drinking age legislation, motorcycle helmet legislation, repeat offenders, restraint use, 65 mph speed limit, safety design of cars and light trucks, and safety of large trucks on the highway.

NHTSA's General Estimates System (GES), was established in 1988 to identify highway safety problem areas, provide a basis for regulatory and consumer initiatives, and form the basis for the cost/benefit analyses of highway safety programs. It covers approximately 45,000 crashes per year of all severities, from property damage through fatals, reported on roads throughout the United States, and involving all types of vehicles. Coders contracted to NHTSA enter the data directly from a sampling of police collision reports.

The Federal Highway Administration (FHWA) also operates a number of database systems, especially those dealing with commercial vehicles.

Selective Enforcement Programs

Among the police traffic safety programs shaped by conclusions drawn from statistical databases, Selective Traffic Enforcement (STEP) probably has the widest recognition. This program addresses the kinds of traffic violations that are major causes of collisions, and concentrates enforcement at those locations where most of these violations and resulting collisions occur, at the times of day and days of the week when their incidence is the highest. With the limited resources available to law enforcement, the program attempts to maximize the productive use of officer time to achieve a meaningful reduction in fatalities, injuries and property damage.

The STEP program relies on the existence of an effective traffic records system. The system should be uniform within the state so that the data is recorded uniformly and facilitates proper analysis. Data from collisions should be analyzed as well as data from citations issued and reports generated by traffic officers. A database provides an objective guide to designing the program. It indicates where a problem *actually* lies, not where somebody *thinks* it lies. A program not matched to the problems pointed out by data will miss the mark, and can never bring good results.

In establishing an STLE program, an agency should appoint an effective manager. He should adopt practical measures that address the problems identified by the data, assign the required number of officers to each identified high collision-frequency location, and provide them with proper equipment. The agency should continue to collect data after implementation of the program, and use the resulting updated database when evaluating the program. Regular evaluation is essential to keep abreast of changes in violation and collision patterns, to discard a program revealed to be ineffective, and to introduce modifications to further improve an already effective program.

Liaison of Law Enforcement with Traffic Engineering and Roadway Maintenance

Although the police can control the drivers and vehicles on the roadways through enforcement and thereby make the roadways safer, they cannot directly remedy unsafe roadway design and markings or perform needed roadway repairs—functions that are also basic to roadway safety. They are nevertheless in a position to observe and discover these unsafe conditions, and report them to the local Department of Transportation, or whatever government office is responsible for traffic engineering and trafficway maintenance.

Certain collision data contained on the standard collision report form used statewide by all law enforcement agencies—number and types of vehicles involved, location, time of day, day of week, and violation(s) causing the collision—are reported to the state. The state tabulates and analyzes this information and, if the referral procedure is working, informs the Department of Transportation of any problems in their jurisdiction. If correcting the problem is complex or would involve a major change, the DOT may first initiate an engineering study to determine if correction is feasible and how best to carry it out. Since the referral procedure sometimes gets bogged down, the police agency that has observed an unsafe trafficway condition, or reported a collision in which an

unsafe trafficway condition was a contributory cause, should contact the local DOT office directly by telephone or memo. The effectiveness of this informal referral system depends on the dedication of both the reporting police agency and the local DOT office, and on the degree of rapport that exists between them. For law enforcement officers the lesson here, as in many other aspects of police work, is that law enforcement cannot accomplish every objective on its own. Good liaison and good relations with other organizations are essential.

Through the cooperative efforts of the groups specializing in each of the areas discussed in this chapter, our highways will be made safer.

PART EIGHT:

Commercial Vehicle and Hazardous Materials Regulation

Commercial Vehicle Safety

Commercial vehicle safety became a national priority only a few years ago. Before that, state and provincial authorities developed safety programs independently. The resulting welter of conflicting requirements created confusion for commercial vehicle operators, and an uneven effect upon highway safety.

Background

Federal Motor Carrier Safety Regulations: In 1986, the U.S. Department of Transportation's Federal Highway Administration (FHWA) responded to the proliferation of state programs by adopting the Commercial Motor Vehicle Safety Act. This act defined new national standards for commercial drivers, the equipment and maintenance of vehicles, and the fitness of operating companies. These standards are now incorporated in the Code of Federal Regulations (CFR), Title 49.

FHWA policy encourages states to enforce uniformly these regulations for both interstate and intrastate drivers and carriers. Federal regulations tend to focus on interstate transportation, whereas intrastate regulation becomes largely a state and local responsibility. Safety considerations dictate consistent application of commercial enforcement and inspection efforts in both realms.

Motor Carrier Safety Assistance Program: The FHWA also administers the Motor Carrier Safety Assistance Program (MCSAP), which provides grant funding to states seeking to enhance their commercial enforcement efforts, particularly those addressed to the safe movement of hazardous materials. A practical impact of MCSAP grants is significant expansion of on-highway truck inspections.

The awarding of MCSAP funds hinges on state submission of detailed state enforcement plans (SEPs), which must permit the state to adopt and consistently enforce federal commercial vehicle regulations or equivalent state rules; maintain state and local spending for commercial vehicle safety programs at levels existing prior to receipt of the grants; and emphasize enforcement of state and local laws related to commercial vehicle operation.

The Commercial Vehicle Safety Alliance: Several states recognized the urgency of devising uniform commercial vehicle inspection procedures, and in October 1980, they formed the Commercial Vehicle Safety Alliance (CVSA). This organization grew rapidly and now numbers 49 states, 10 Canadian provinces, Mexico, two U.S. territories, and the commercial vehicle industry. The alliance seeks enforcement and inspection compatibility between jurisdictions, which permits reciprocal acceptance of inspections performed by member jurisdictions.

A vehicle subjected to roadside inspection in one state is issued a CVSA windshield decal, which is recognized by the other states for 90 days, thus avoiding unnecessary and repetitive inspections.

Because CVSA has become the major arbiter of commercial vehicle inspection procedures throughout North America, the FHWA and other national organizations accept and recommend the use of CVSA Standards.

SAFETYNET: SAFETYNET is the information arm of MCSAP. This automated network accepts safety data collected through MCSAP by participating states, and makes it available to other participating jurisdictions.

Federal Motor Carrier Safety Regulations

Federal regulations deal with commercial (truck and bus) drivers, operating companies, and vehicles.

Drivers were brought under the umbrella of the federally required but state-issued commercial driver's license (CDL). A CDL requires advanced levels of knowledge and operating skill. Bus and truck drivers must demonstrate behind-the-wheel capability in the types of vehicles they seek to operate. Specific license endorsements are required to haul hazardous materials or to drive passenger transport vehicles, double/triple trailers, or tank vehicles.

The written knowledge exam for a CDL tests not only the fundamental areas of driving rules and safety considerations but also an understanding of air brake systems, hazardous materials, and pre-trip inspection procedures.

Drivers may hold only a single CDL issued by their home states, thus ending the formerly common practice of obtaining multiple licenses to circumvent license suspensions or revocations in a particular jurisdiction. CDL information is centralized in the Commercial Driver's License Information System (CDLIS), which is accessible to state motor vehicle licensing agencies. Applicants for a commercial license can be routinely checked through CDLIS. Federal standards also define circumstances that can lead to revocation of the CDL.

Carriers are subject to federal on-site review of vehicle inspection and maintenance procedures and records, driver qualifications and hours of service compliance, accident histories and related subjects. Carriers receive a “safety fitness” rating—certain aspects of the company's operating authority can be terminated for carriers judged unsatisfactory. Some states maintain similar or more restrictive statewide inspection and rating systems, which generally reach more carriers more often than the federal system. Carrier evaluations form an essential element of an overall commercial vehicle safety program.

Police officers who are unfamiliar with commercial vehicle enforcement frequently find it difficult to recognize who is the motor carrier when stopping a truck on the highway. In some cases involving an owner/operator, the driver and the carrier may be one and the same. In other cases, the carrier may be a third party other

than either the driver or the owner of the vehicle. The motor carrier will generally be licensed with an ICC (Interstate Commerce Commission) or the U.S. DOT identification number conspicuously displayed on the outside of the vehicle.

Vehicles must conform to federal requirements for equipment, markings, placarding, and operating condition. State requirements sometimes are more stringent than the federal ones. Most commercial vehicle inspections are conducted by state authorities, whether on-highway or in-terminal.

Commercial Vehicle Enforcement Programs

Effective commercial vehicle enforcement programs include three major elements: (1) on-highway enforcement against moving violations by officers on regular patrol; (2) inspections of both vehicles and terminals; and (3) the weighing of trucks.

Road patrol officers need no additional training to enforce truck moving violations such as speeding and unsafe lane changes. But for officers making even cursory checks of commercial vehicle equipment, maintenance and loading, special knowledge is essential, along with instruction in assessing the validity of truck registrations.

On-highway enforcement historically is complicated by trucker reliance on CB radios and other communications techniques to thwart patrol officers. Counter-strategies have sprung up. One of the more effective is police use of specially marked vehicles (patrol cars of different makes, models, colors, and markings) not readily identifiable as patrol cars. Some states employ completely unmarked vehicles, an equally helpful tool. Truckers who try to bypass weigh stations and safety checkpoints can be counteracted by additional patrol units on parallel routes, or chase cars.

The growing use of commercial vehicles to transport illegal drugs emphasizes the possibility that a traffic stop may harbor the

potential for a major drug seizure. How to recognize that potential, and how to proceed in a fashion that does not jeopardize subsequent prosecution, requires special training in commercial vehicle drug interdiction techniques.

Commercial Vehicle Inspections

Many states have standardized their commercial vehicle safety checks of trucks and buses, utilizing the CVSA standards. Under CVSA, there are five levels of inspection. Level I, the most thorough inspection, includes both vehicle and driver and requires approximately 42-48 minutes without placing the vehicle out of service. Trucks and buses that pass receive a CVSA decal, valid for 90 days. During that period, member jurisdictions typically waive repeat inspections, concentrating instead on vehicles without decals. This in-depth inspection is called the North American Uniform Driver/Vehicle Inspection Program (NUDVIP), also labeled North American Standard, or NAS.

Other levels of inspection are less pervasive and require less time, except Level V, the in-terminal inspection of a vehicle, which can be as detailed as NUDVIP and result in the issuance of a certificate.

The driver of a vehicle bearing a valid CVSA sticker might be subject to a “driver only inspection” that, among other procedures, checks his license, log book, safety belt use, driver sobriety, and the vehicle checklist completed by the driver.

A program of complete commercial vehicle safety must include size and weight limits, vehicle equipment, compliance with permit and federal motor carrier regulations requirements, towing, load and securement, and special vehicles, such as school buses, if applicable, and farm labor vehicles.

A comprehensive program reaches commercial vehicles in several possible locations to ensure reasonably thorough coverage, and

contacts carriers via terminal inspections. Vehicles are typically inspected and weighed at major scale/inspection facilities, and by roving commercial vehicle enforcement officers. Other facilities may include platform scales, pit scales, and multiple sites.

Terminal inspectors check driver timekeeping records and hours of service, maintenance procedures and vehicle condition, compliance with hazardous materials regulations, and safety practices of passenger stage carriers and hazardous materials transporters.

Everyone involved in the inspection process, from uniform police officers to civilian inspectors, must have completed the training pertinent to their assignments.

Some state agencies maintain computerized information on carriers and shippers, collating vehicle inspection data, accident and hazardous material histories, incident histories, on-highway enforcement information, and terminal inspection findings in one central database. SafetyNet, the FHWA database, attempts a similar national approach, utilizing information made available from the states. Driver and Vehicle Exam Reports that reflect the North American Standards of FHWA and the out-of-service criteria of the CVSA form the base for the federal SafetyNet information system.

Data Collection From Commercial Vehicle Citations

Various data are used as part of a national strategy to focus inspections on audits of commercial motor carriers. Crash statistics and information, as well as complaints, are collected to identify those carriers in most need of attention. The Congress has mandated that the Federal Highway Administration collect

citation data from state and local law enforcement agencies to be included in this decision-making process.

State-level police agencies are being asked to report moving violations to the FHWA and to collect this information from county and local agencies as well. A major concern of state police agencies is how to modify citation forms to include the U.S. DOT number, or some other carrier identification, since this data needs to be tracked to the motor carrier rather than to the individual driver. Another issue is how to transmit the data to FHWA.

Pilot projects were set up in several states to measure the effectiveness of this data in triggering terminal audits of motor carriers to uncover safety violations, as well as to determine the technical and administrative problems involved in capturing the data.

Hazardous Materials Transportation Enforcement

The U.S. Department of Transportation estimates that four billion tons of regulated hazardous materials move annually in America, much of it on highways. That huge and growing volume increases a chance that an accident or incident will release a harmful product, requiring a specialized response.

Federal emphasis on the safety of hazardous materials transportation, echoed strongly by the states, seeks to prevent spills and the crashes that can result in spills, and to increase state and local capability to handle spills with the least adverse consequences for people and property.

In 1986, the Office of Technology Assessment compiled a bellwether report on hazardous materials movement in America and concluded that most hazardous products are transported without incident, yet the potential remains for catastrophe. Singled out as a foremost problem were people who are poorly trained, who don't coordinate well, or who fail to communicate thoroughly.

For police and fire departments—the first responders to a hazardous materials incident—the most uncomfortable statistic was that only one in four uniformed personnel had received adequate training to deal with a hazardous material spill.

Today, that percentage has increased, but training remains a cardinal issue for law enforcement, particularly police traffic agencies, whose personnel invariably will be the first arrivers at any highway incident.

Federal Regulations

Title 49 of the Code of Federal Regulations contains the general requirements for hazardous material transportation in America. It classifies and defines hazardous materials; lists packaging requirements including design, testing, and labeling; describes vehicle loading, marking, and placarding requirements; explains shipping papers; lists necessary emergency response information; lays out employee training specifications; and addresses driving, parking, and route selection rules, with special reference to the movement of radioactive materials.

The federal Research and Special Products Administration (RSPA) has also produced guides describing procedures for inspecting shipments of hazardous materials, radioactive materials, and spent nuclear fuel, as well as cargo tanks. Some states have built upon these federal regulations by developing in more detail such elements as safe routes and stopping places, and handling of specific materials like explosives and radioactive substances.

Further federal transport requirements were formalized in the Hazardous Materials Transportation Uniform Safety Act (HMTUSA) of 1990. This act, which describes the urgency of developing a national program to promote public health and welfare, began to untangle the web of conflicting state and local requirements essentially by pre-empting them, and calls once more for far-reaching training of first responders.

An alliance for uniform hazardous material transportation procedures, made up of 28 state and local government officials, has been charged by HMTUSA to develop guidelines that state and local jurisdictions can use for registering and issuing permits to hazardous materials carriers.

The alliance was formed to present recommendations to the DOT for inclusion in future federal regulations. State registration and permit programs may be pre-empted unless they conform to these

regulations. To test its recommendations, the alliance developed a pilot state registration program which incorporated a “base state” process for the registration of hazardous materials carriers.

Cooperative Hazardous Materials Enforcement Development (COHMED)

COHMED is a joint federal-state-local-private sector effort to promote uniform enforcement of hazardous materials transportation regulations. The organization is administered by state enforcement officials, and parallels the CVSA in its intent to bring uniformity to the specialized area of hazardous materials regulation and enforcement.

An outgrowth has been the Hazardous Materials Information Exchange (HMIX), a two-way communication service through which state and local organizations can obtain information on training opportunities, conferences, and literature. HMIX participants can also communicate with each other via computer hookups.

Other training sources include the Hazardous Materials Advisory Council (HMAC), which sponsors a variety of specialized courses in conjunction with the RSPA; the Transportation Safety Institute (TSI), a federal training center located in Oklahoma City; and various hazardous materials program policy documents produced by state agencies.

Hazardous Materials Incident Emergency Management

The Superfund Amendments and Re-authorization Acts (SARA) of 1986 required the federal Occupational Safety and Health Administration (OSHA) to prepare regulations, now identified as Title 29 of the Code of Federal Regulations, to protect employees involved in handling hazardous waste. The regulations also define

the training requirements for personnel, including police officers, who respond to hazardous materials incidents.

CFR 29 now describes five levels of training for emergency responders. Three are particular pertinent to police: (1) *the first responder awareness level*, for a person who understands the hazards and risks of a hazardous materials spill and triggers the response necessary to protect life and property; (2) *the first responder operations level*, which requires knowledge of spill containment and how to minimize exposure risk; and (3) *on-scene commander level*, for a person with the capability and authority to take charge and direct all facets of protecting public safety and the containment and neutralization of the spill.

For the awareness level, training must be sufficient to ensure competency in understanding hazardous materials and the inherent risks associated with a spill or incident; recognizing the presence of hazardous materials and identifying their type, if possible; understanding the employer's emergency response plan and the need for site control; and making notification to the communications center in recognizing the need for additional resources.

First responder operations level training, usually a minimum of eight hours, must include the first responder awareness elements plus the knowledge to choose proper protective equipment for on-scene personnel; the ability to perform basic spill containment and confinement procedures consistent with equipment and personnel available at the scenes; an understanding of basic decontamination procedures and how to initiate them; and an understanding of operating procedures at the scene.

On-scene incident commander training, usually an additional 24 hours, must be sufficient to ensure competency in properly conducting the agency's incident command system, initiating agency emergency responses, and coordinating an emergency response with other agencies that may become involved. In addition, the trainee must know the risks faced by people working on-scene at a hazardous materials spill, including personnel

wearing chemical protective clothing; be aware of both the state and federal regional response plans or teams; and realize the importance of decontamination procedures and know how to conduct them.

The importance of constant police readiness emphasizes the need for thorough training, reinforced by frequent in-service updates for both management and line personnel.

Every police vehicle used for traffic patrol should carry in it the latest copy of the federal DOT *Emergency Response Guide*. This concise book contains a rapid reference by which officers can determine, from the numbers and other information on placards and shipping papers, the classification of hazardous materials being transported and the general cautions and instructions for containment of spills and evacuation of the public.

For further information on incident management and control, see Part Eleven, "Roadway Management Through Engineering and Enforcement."

PART NINE:

The Driver Licensing System

Driver Licensing

Licenses are generally issued by the motor vehicle administrators of the various states and provinces. As well as serving as a national identifier of persons, the driver's license system is used for

- the rapid identification of persons who are driving motor vehicles;
- the operation of a classified license system which provides separate written and skill tests for various types of vehicles such as motorcycles, passenger vehicles, and commercial vehicles;
- a point system for targeting unsafe drivers for license suspension or revocation to remove hazardous drivers from the roads; and
- identifying and tracking traffic violators through the court system and preventing persons from defaulting on traffic citations.

The License as a Positive Identifier

When first issued, driver's licenses were intended to verify that the holder complied with the regulations associated with vehicle operation.

Photographs were later added to aid in positive identification and to reduce fictitious usage. Strategies to prevent counterfeiting include the use of thumbprints and holograms. Many licenses even contain magnetic strips and bar codes to provide for the electronic recording of driver license information if a citation is issued in the field.

A driver's license typically contains a variety of information, including the driver's date of birth, his social security number as a primary or secondary identifier, his blood-type, an indication if

the driver is an organ donor, and certain physical characteristics such as height, weight, hair and eye color.

Over a period of time, the driver's license has assumed the role of a positive identifier. This acceptance is based upon the belief that an effective screening process is employed to verify that the license data is valid. Today, the license has become the means to use legal instruments, to obtain social benefits, and to gain access to restricted areas and services.

The state agencies issuing driver's licenses are finding that positive identification of applicants is nearly impossible because of the absence of a national identification system. The U.S. birth certificate system is ineffective for identification purposes. Coupled with the problems of identification presented by legal and illegal aliens, the use of a driver's license as a national identifier is not reliable.

In the past several years, the use of a digital image photo license has increased. Over 15 states and provinces are using this technological breakthrough, which provides more effective security and identification. In addition, photographic information can be transmitted via computer to officers in the field.

The AAMVA recently began a project to standardize identification means when issuing driver's licenses. The problem of alien identification remains an unaddressed issue at the national level.

Another major problem is the use of fraudulent driver's licenses by minors to purchase alcoholic beverages. A number of states have addressed this problem through the use of special licenses, or the addition of identifying features to the licenses of persons under the age of 2,1 so that they may be readily identified by law enforcement and other persons.

National Driver's License Compact

The National Driver's License Compact (NDLC) program has several administrative components, including an application to law enforcement.

Prior to the NDLC, a person in one state who was convicted of a traffic violation in a neighboring state would not have that violation reported or charged against his record in his home state. Also, nonresident drivers who were issued citations were often physically arrested and required to post bond or surety for court appearances for even non-jailable motor vehicle offenses.

Under the NDLC program, which is administered by the American Association of Motor Vehicle Administrators, the majority of states report violations by nonresidents to the driver's home state. The charges are then added to the offender's driving record as though the violations occurred in the home state.

For example, a driver charged with DUI in an NDLC state will have his license suspended in his home state as well. Also, nonresident drivers can promise to appear in court, or pay a waiver and be released without bond. If he fails to satisfy the court appearance, a mechanism permits the issuing state to revoke the driver's privileges until he complies with the laws of the other state.

A total of 43 states now participate in the NDLC.

Administrative License Revocation (ALR)

State government has traditionally retained the responsibility of issuing and regulating driver's licenses. Upon conviction, the courts have been committed to limit or suspend driver's licenses or operating privileges. A current trend is to remove the license sanction from the courts, to eliminate unnecessary delays associat-

ed with court backlogs, and to reduce the impact of plea bargaining.

The National Highway Traffic Safety Administration advocates the on-the-spot revocation by police officers who arrest drivers for driving under the influence of alcohol or drugs.

In states with this legislation, police officers are empowered to confiscate the driver's license of a person arrested for impaired driving when that person either refuses a chemical test of blood, breath or urine or tests above the prescribed limit. The license is usually forwarded to the licensing agency, and the holder is issued a temporary permit to drive pending a hearing. The benefit of ALR is that action is less complicated and immediately removes a known hazardous driver from the roads.

Most states have some version of ALR in operation; it is a condition for some states to receive additional federal highway safety funds.

Digital Image Photo Licenses

Advancement in technology now gives the ability to produce a digital photo driver license.

These documents offer advantages over the old photo technology. Central electronic image storage makes access to the pictures and information much easier. Many of the fraudulent practices that plagued photo technology are eliminated by digital imaging. Multiple duplicate driver's licenses, held by the same or different people, become practically impossible to obtain when the person applying for a duplicate license has himself compared to the digital image of the original applicant. Comparison under the old photo technology was either cumbersome or impossible.

Electronic auditing of driver license production also helps eliminate abuse by operators to create fraudulent licenses which are used in check and credit card fraud, drug trafficking, and, especially, illegal immigration.

The implications for law enforcement go far beyond these obvious benefits. With a central image database of every driver in a state, the public safety community has a ready-made storehouse of photos to be used in criminal investigations. Due to the electronic nature of these images, they can be obtained in seconds via a computer retrieval unit in the department or even faxed or thermal printed directly to the patrol car. These same images can also be brought into a photo array for suspect identification. The uses for these images are limited only by the wants and needs of the public safety community.

Not to be forgotten is the importance of the actual driver license itself. With the aid of computer technology, the license can now be made more secure and tamper-proof than ever before. Magnetic

stripe encoding, a technology currently employed in banking, can be used in tandem with this electronic record to provide even greater help to police traffic enforcement. Additionally, recent technological advances in two-dimensional bar coding enhances security and assists in providing additional data to the public safety community, specifically to the patrol officer. Citations can be issued much more quickly and efficiently. Use of this technology also eliminates multiple entry points for the information.

A typical traffic stop could go something like this: The driver's license with an encoded magnetic stripe and bar code is read by an in-car unit. This unit then transmits the information to the department's system which runs a standard check of traffic and criminal records on the individual. This information is returned to the car, either by the dispatcher or through an in-car computer. This same computer could also display the photo of the driver from the drivers license database. Information on the type of violation is then entered into the unit. This generates the printed citation to be given to the driver and at the same time updates the departmental computer and transfers the violation information electronically to the courts and the DMV. As can be seen, the benefits of this technology have far-reaching implications.

Fifteen jurisdictions have already converted to this technology, and many others are doing so presently. Work is progressing on digital standards (common data elements and compatible records) so that a national and, perhaps, an international network of digitized images can be established. This progress emphasizes the importance of public safety and particularly the law enforcement community's efforts to maintain a proactive relationship with motor vehicle departments.

These technological advancements must be continually monitored and promoted so that law enforcement can take full advantage of them and be able to use a secure document.

Generally, a committee is established in each jurisdiction to evaluate the needs of agencies affected by a plan to convert to a digital image photo license. This committee may also have the responsibility of evaluating vendor proposals to accomplish this conversion. Representation on these evaluation committees should be sought by the law enforcement community so that their needs and wants will be considered.

The public safety community and particularly law enforcement should be continually alert to legislation that limits and/or precludes the transmission of the digital image driver's license and pertinent information to a police officer.

Detecting Suspended and Revoked Driver's Licenses

The revocation or suspension of a driver's license is potentially very effective because it separates persons with physical or mental disabilities, or those with poor driving records or attitudes from the other users of our highways.

In practice, however, this strategy is not as effective because many persons continue to drive after their driving privileges have been suspended or revoked and are not detected by law enforcement. This problem leads to a breakdown in respect for the law, clutters our highways with dangerous drivers, and frustrates the criminal justice and driver licensing processes.

Although detecting and apprehending suspended or revoked drivers is difficult, few police activities yield higher dividends in improving traffic safety and promoting respect for the law.

Several associations, including the AAMVA, advocate strict enforcement of laws relating to the operation of vehicles while licenses are suspended or revoked. Repeated national studies indicate that license suspensions are the most effective sanction used in traffic law enforcement.

The Need for A Policy

Police agencies need policies to ensure that appropriate enforcement action is taken when a suspended or revoked driver's license is found. The policy should not permit an officer to lodge a charge of driving without a license as a substitute for driving after suspension. Policies should advocate that driving after suspension cases are pursued to conviction and not dropped as part of a plea bargain, especially when accompanied by DUI charges. When a

motorist displays a suspended or revoked license, the individual should be charged with that separate offense as well as driving after suspension. The license should be confiscated and returned to the state licensing agency.

Police agencies should form task forces to contact anyone who fails to turn in their license if it is under suspension or revocation. Officers should confiscate the license and return it to the licensing authority. The individual should be charged with failing to surrender a suspended or revoked license.

Violator-directed patrols are effective when police departments are notified by licensing agencies of the suspension or revocation of a person who is an habitual motor vehicle offender.

The National Driver Register (NDR)

The National Driver Register (NDR) is a central repository of information on individuals whose driver's licenses have been revoked, suspended, cancelled, or denied, or who have been convicted of certain serious traffic-related violations, such as driving while impaired by alcohol or other drugs.

When an individual applies for a license, state driver licensing officials query the NDR to determine if the individual's driving privilege has been withdrawn in any other state. Because the NDR is a nationwide index to driver records from all states, a state needs to submit only a single inquiry to obtain this information. The information obtained from the NDR assists the state driver licensing official in determining whether or not to issue a license.

The Federal Aviation Administration and the Federal Railroad Administration also use the NDR to process their inquiries for the detection of driving violations, especially alcohol-related, among their applicants for certification. In addition, the U.S. Coast Guard recently was authorized to receive NDR information regarding their applicants for certification.

Fifty states have established electronic access to the NDR file—a major step for states that issue licenses over the counter rather than require a waiting period.

During 1993, the NDR processed over 25 million file checks for all users of the NDR, which resulted in over one million probable identifications, or matches.

As required by Public Law 97-364, the NDR is converting to a Problem Driver Pointer System (PDPS) to improve the timeliness and reliability of NDR information. Under the PDPS, the NDR

will no longer contain substantive data. Instead, it will contain only identifying information to enable it to check whether or not adverse action has been taken against an individual—not specific information about *why* an individual's name appears on the NDR file; such information will be maintained by the state that executed the adverse action. When a match occurs with a record on the NDR file, the NDR will electronically point to the state where the adverse action is maintained, retrieve that information, and relay it to the state of inquiry. In this way, the state of inquiry is assured of receiving the latest information available regarding the driver's record.

PDPS conversion involves not only making system changes at the NDR but also providing technical and training assistance to states in their conversion efforts, including a Help Desk staffed by a small group of systems analysts.

Ohio, North Dakota, Washington, and Virginia—the four states that participated in the PDPS Pilot Test Program in 1987 to 1988—continue to operate under the PDPS concept. Florida will be the first new state to implement PDPS, scheduled for July, with an additional 11 to 15 states scheduled for implementation by the end of 1993.

Motorcycle Licensing Requirements

Motorcycle collisions contribute significantly to the large number of deaths and injuries occurring on our nation's highways.

They account for nearly seven percent of all traffic deaths in this country but represent only two percent of the nation's registered vehicles. More than 80 percent of all motorcycle crashes result in injury or death, and DWI on a motorcycle is an especially risky venture.

In a recent year, more than 2,400 motorcyclists were killed in traffic crashes. The death rate per 100 million vehicle miles traveled for a motorcyclist is over *20 times* that of an automobile occupant.

The Problem of Unlicensed Motorcyclists

A substantial number of the riders killed in motorcycle crashes are unlicensed or not properly licensed to operate a motorcycle. In 1993, of the total 2,435 motorcycle operators involved in fatal motorcycle crashes, 991 (40.7 percent) were not licensed to drive a motorcycle. Of those 991 operators, 158 (6.5 percent) had no license whatsoever, and 833 (34.2 percent) did not have a valid motorcycle license or endorsement. The number of improperly licensed motorcycle drivers involved in fatal motorcycle crashes has remained at approximately 40 percent for the most recent five years.

The following list of motorcycle validation codes is provided to assist officers who stop motorcyclists to determine if the license is valid for the operation of a motorcycle.

STATE	LICENSE CODE
Alabama	M
Alaska	M1,M2
Arizona	M
Arkansas	MD,M
California	M1,M2
Colorado	M
Connecticut	104,106,204,206,AM,BM,CM
Delaware	M
District of Columbia	M
Florida	MTCY
Georgia	MR,MU,MX
Hawaii	Class 2
Iowa	M,8
Idaho	No Requirement
Illinois	L,M
Indiana	MC
Kansas	D,M
Kentucky	M
Louisiana	4
Maine	I,J
Maryland	M
Massachusetts	M
Michigan	CY
Minnesota	M
Mississippi	E
Missouri	M
Montana	M
Nebraska	M
Nevada	M,MX,MZ,MU
New Hampshire	MC
New Jersey	M,E
New Mexico	Y,W
New York	M,MJ
North Carolina	M
North Dakota	M

Ohio	M,R
Oklahoma	M
Oregon	M,Q,M1,M2
Pennsylvania	M
Rhode Island	H
South Carolina	M,4
South Dakota	2,3
Tennessee	M,MP
Texas	M
Utah	M,O,U
Vermont	M
Virginia	M
Washington	M1,M2,M3
West Virginia	F
Wisconsin	M,CY
Wyoming	M

PART TEN:

Protection of Automobile and Motorcycle Occupants and Riders

Occupant Protection and Enforcement

A little more than a decade ago, highway safety priorities counted safety belt and child safety seat use as just one of many goals— an important one, but not a priority. The drunk driver commanded somewhat more attention but not to the degree this menace deserved.

Today that has all changed and we address both subjects with equal vigor—removing drunk drivers from behind the wheel and putting all vehicle occupants into approved safety restraints.

Alcohol-related fatalities dropped 26 percent between 1983 and 1993, declining nearly 10 percent in 1991 alone. Alcohol-related deaths still number almost 18,000 a year, slightly below half of all highway crash deaths. We are doing better, but not well enough!

The Role of Occupant Protection

Safety belt use saves over 9,000 lives and prevents 200,000 moderate-to-critical injuries each year. NHTSA estimates that, if all passenger vehicle occupants wore safety belts, nearly 10,000 additional lives could be saved per year. Studies show that the use of safety restraints cuts the number of deaths and injuries in traffic crashes by one-half.

The following statistics, provided by NHTSA, dramatically show the impact that safety belts can have in traffic crashes:

- From 1982 through 1994, an estimated 65,000 lives were saved by safety belts and more than 1.5 million moderate-to-critical injuries were prevented.

- Over the same eight years, safety belts prevented an estimated 770,000 moderate to critical injuries, 571,000 in jurisdictions that have mandatory belt use laws.

- Among front-seat passenger vehicle occupants over four years of age, safety belts saved 4,682 lives in 1991, 3,828 of them in jurisdictions that have belt use laws.

- Of 55,000 passenger car occupants involved in fatal crashes in a recent year, over half (52 percent) of the unrestrained occupants were fatally injured, while only 29 percent of the restrained occupants were fatally injured.

- Three-quarters of the uninjured occupants of passenger cars involved in fatal crashes were using restraints.

Safety Belt Use Laws

The July 1984 ruling by the U.S. Department of Transportation on automatic occupant protection began a wave of legislative action resulting in the enactment of safety belt use laws in many states. The goal of these laws was to promote belt use and thereby reduce death and injuries in crashes.

As of this writing, 48 states and the District of Columbia have belt use laws, some as a primary violation and some as only a secondary violation (enforcement action can only be taken if the driver is stopped for another violation). Reported safety belt use ranges from 24 to 83 percent, varying widely from state to state, reflecting factors such as differing public attitudes, enforcement practices, legal provisions, and public information and education efforts. NHTSA estimates that the implementation of state belt use laws has reduced traffic fatalities by seven percent a year.

Types of Occupant Protection Systems

Safety belts were first installed on passenger vehicles in 1956, and shoulder restraints were added in later years. Using a combined seat belt and shoulder restraint keeps the driver from hitting the dashboard, windshield, or rear-view mirror— "submarining under the dashboard."

The addition of automatic passenger restraints by some manufacturers resulted in miniature electric motors which deploy the shoulder strap when the driver sits in the car and the ignition is turned on. However, many drivers take no further action after the shoulder strap is deployed and do not fasten their seat belts. This defeats the engineering that went into the restraint system, because the shoulder restraint alone is not protective without the lap belt fastened.

In fact, the National Transportation Safety Board has highlighted instances of where motorists using the motorized shoulder belt without the lap belt have been decapitated in crashes.

Driver and passenger-side air bags are now mandatory in most new passenger vehicles. These devices contain sensors that detect rapid deceleration characteristic of a collision, and through an explosive device, deploy an air bag which blows up, similar to a balloon, and prevents the driver from impacting the interior of the vehicle.

The presence of an air bag does not relieve the driver or passengers from the responsibility of utilizing lap and shoulder belts. An air bag provides little protection in a side collision. Lap belts and shoulder harnesses provide the added protection of keeping the driver behind the wheel and in control of the vehicle to allow for last-minute emergency maneuvers, and preventing the driver and passengers from hurtling around the interior of the vehicle and colliding with one another.

Child Safety Seats

Law enforcement and education can make the difference between life and death for our children. All 50 states, the District of Columbia, and Canadian provinces have child restraint use laws. When used correctly, child restraints are 71 percent effective in preventing deaths and 67 percent effective in reducing injuries. In a recent year, 100 percent use of child safety seats nationwide could have prevented 455 fatalities and approximately 49,000 serious injuries to children under the age of five. The actual usage rate in that year was estimated at 80 percent, and approximately 247 lives of children under the age of four were saved as a result of child restraint use.

Even though child safety seats are proven lifesavers, many drivers still do not use them, purchase unapproved seats, or use them incorrectly. Incorrect use is a major contributor to the deaths and injuries each year.

Many cases of incorrect use are as simple as turning the seat toward the proper facing position for that age child—rear-facing positions for infants and forward-facing position for older children. The best position for rear-facing child safety seats is the middle position of the rear seat of the vehicle. Simply not following the manufacturer's instructions for properly installing the seat also nullifies its benefit. The best place for any child in a safety seat is in the rear seat of the car, properly secured with a seat belt system as recommended by the manufacturer of the safety seat.

Policies and Training Programs

The National Highway Safety Traffic Administration has a model OPUE (Occupant Protection Usage and Enforcement) Program that is available to law enforcement agencies to train members of their department to act as instructors. The training program uses a model curriculum which includes teaching participants to write

safety restraint enforcement policies. State POST Academies provide this training, and all law enforcement agencies are urged to have at least one member trained in OPUE.

Motorcycle Safety Helmets

The National Highway Traffic Safety Administration (NHTSA) issued Federal Motor Vehicle Safety Standard (FMVSS) 218, Motorcycle Helmets, on August 20, 1973. The standard went into effect on March 1, 1974, and was most recently amended on October 3, 1988.

All motorcycle helmets sold in the United States are required by law to meet or exceed the minimum performance requirements established by FMVSS 218. These requirements include minimum impact and penetration capabilities, chin strap retention qualities, and a 210-degree field of view, along with a number of labeling requirements. To certify that their helmets meet all the requirements of FMVSS 218, a manufacturer places the letters "DOT" on the back of each helmet. This lettering is often referred to as a "DOT label" or "DOT sticker."

If a manufacturer sells a helmet certified as meeting the FMVSS standard and NHTSA discovers the helmet does not, NHTSA conducts an investigation that can result in the manufacturer's having to recall the helmets in question.

Recently, the manufacture and sale of costume or novelty helmets has dramatically increased. These helmets, if not sold as motorcycle helmets, are not required to meet FMVSS 218. If the manufacturer does not place a DOT sticker on the back of the helmet, they are not certifying that the product meets FMVSS 218, and they do not claim that it offers any protection at all to the wearer.

A problem arises with a novelty helmet when its manufacturer or distributor encloses or offers a DOT label separately for the consumer to place on the back of the helmet. Reputable manufacturers place the DOT sticker on their helmets *before* shipping them to distributors.

Most state helmet use laws require motorcyclists to wear helmets that meet FMVSS 218. NHTSA has developed a training videotape and an informational brochure to assist law enforcement personnel in identifying helmets that do not meet this national standard. For copies of the video and brochure, call NHTSA at (202) 366-1739.

FMVSS 218 Requirements

A DOT label must be affixed to the center, lower back of each approved helmet.

FMVSS 218 also requires the manufacturer to sew into the helmet liner a label or labels that can be easily read without removing padding or any permanent part. This label must include following information:

1. Manufacturer's name or identification
2. Precise model designation
3. Size
4. Month and year of manufacture, which can be spelled out (June 1988) or expressed in numerals (6/88).
5. Instructions to the purchaser as follows:
    a. "Shell and liner constructed of (types of materials spelled out)."
    b. "Helmet can be seriously damaged by some common substances without damage being visible to the user. Apply only the following: (recommended cleaning agents, paints, adhesives)."
    c. "Make no modifications. Fasten helmet securely. If the helmet experiences a severe blow, return it to the manufacturer for inspection or destroy it and replace it."
6. A helmet must have an inner liner, about one-inch thick and made of polystyrene (styrofoam).
7. The chin strap must be strong and well-attached.
8. There can be no attachments or protrusions over two-tenths of an inch long.

Indicators Of An Illegal Helmet

The following is a list of items, in lay terms, that are indicators of illegal helmets.

1. If there are protrusions from the helmet such as the old German style with a spike on the top (World War I vintage), it will not meet the FMVSS standard. (Caution: Some helmets styled like World War II German helmets are legal. Some very reputable manufacturers produce them to meet FMVSS.)

2. If the helmet consists of a beanie that covers only the very top of the rider's head, it probably doesn't meet the standard.

3. If the helmet has a web liner, no padding, or padding only, or a thin shell of less than one inch of styrofoam on the inside, it likely will not meet FMVSS 218.

4. Fake helmets usually weigh less than one pound, whereas legal helmets usually weigh more than three pounds.

5. If the strap is less than one-half inch wide, or with a single strap attached to the helmet, it probably doesn't meet the federal standard.

6. If the strap is poorly attached with small rivets, it probably doesn't meet the standard.

7. If a DOT label is on the lower back of the helmet, but you suspect it really does not meet FMVSS 218, inspect the *inside* of the helmet to see if the manufacturer has complied with the labeling requirements previously described. If all labeling requirements are not met, the helmet does not meet FMVSS requirements.

8. Helmets may have labels from the American National Standards Institute (ANSI) or the Snell Memorial Foundation, which has somewhat different requirements. However, the DOT standard is the only one the helmet is required by law to meet.

This information was provided by NHTSA's Safety Countermeasures Division and compiled by the Licensing Department of the Motorcycle Safety Foundation.

PART ELEVEN:

Registration, Title and Inspection Enforcement

Motor Vehicle Registration

The system of motor vehicle registrations carried out in the various states and provinces serves multiple purposes, foremost of which are (1) to identify, for law enforcement purposes, the vehicles traveling our highways and (2) to raise revenue.

A vehicle's license plate provides law enforcement with a means of determining ownership, vehicle make, model, year of manufacture, and other items, all or any of which may prove instrumental in conducting law enforcement activities.

Two-Plate Reflectorized Registration

The proliferation of different plate types bearing the same characters creates problems in detecting stolen and wanted vehicles, and states should avoid issuing duplicate identification, if possible.

Mandating that all vehicles display registration plates on both the front and rear of the vehicle enhances law enforcement's efforts to identify a vehicle rapidly, whether it be from a frontal position or from the rear of a vehicle. Police officers are commonly trained to jot down the license plate numbers of oncoming vehicles they see while responding to an accident or crime scene, in an effort to identify possible fleeing perpetrators or eyewitnesses to the incident. Bicyclists, pedestrians and drivers frequently observe the plate numbers of suspicious vehicles and report them to the police. This assistance has been instrumental in solving many serious crimes over the years.

A study conducted by the IACP and published in 1979 revealed the benefit of two-plate registration. In addition to the rapid identification of a vehicle by police authorities, two-plate reflectorized registration also enhances officer safety. Through today's synthetic materials used to cover registration plates, a minimum

amount of light can illuminate the plate as an alert to the police officer for personal safety and for identification purposes.

If for no reason other than officer safety, two-plate reflectorized registration should be incorporated as a primary design for registration plates in every state. Additionally, a reflectorized plate prevents collisions with vehicles parked along streets in poorly lighted areas.

Enforcing the Two-Plate Requirement

From an enforcement perspective, vehicles required by law to display two registration plates are easier to identify, and the dual plate registration is effective in thwarting vehicle thefts.

In those jurisdictions where two plates are required, the absence of one plate provides an officer with articulable suspicion to execute a traffic stop for vehicle registration inquiry, leading to the detection of drunk drivers, persons operating under revocation or suspension, and persons transporting contraband.

In today's society, the general public supports laws and regulations that benefit them, even if they may involve an increased or new user fee. It should be the responsibility of law enforcement and other public agencies to demonstrate and convey to the public and legislative bodies the benefits from a two-plate system. Vehicle owners can see potential benefits in the event their vehicles are stolen. Citizens can appreciate how the two-plate system enhances police officers' abilities to detect criminals and simultaneously heightens personal safety.

Police executives and associations should be proactive in advocating two-plate systems in jurisdictions that do not have them and in fighting back attempts to go to a one-plate concept. However, justifying the need for a two-plate system is difficult unless law enforcement officers aggressively enforce the two-plate requirement by stopping vehicles with only one plate and issuing either a warning or citation to these drivers. Each police department should have a specific policy supporting enforcement against drivers with missing, mutilated, or illegible number plates.

Automated Data Collection At Roadside

Increased refinements in the field of electronics have opened up new vistas of exploration within the law enforcement profession. Sophisticated electronics and computer equipment are making their way into more facets of our daily routines, from the check-out counter at the neighborhood grocery store to the vehicles driven on our highways.

Electronic equipment such as bar code scanners, transponders, and computers can be utilized in law enforcement and highway safety disciplines to evaluate traffic flow patterns, determine traffic demographics, record vehicle registrations, issue parking tickets, and automatically collect highway tolls.

The progressive use of equipment and techniques that uniquely identify vehicles without requiring any action by the driver are evolving. An automatic vehicle identification (AVI) device can be attached to a vehicle, whether it be a bar code or a more sophisticated transponder, containing specific information about that vehicle. Through the use of a reader capable of interpreting the AVI, law enforcement personnel can instantaneously retrieve the information on the vehicle for their use.

Equipment of this type and capability can enhance vehicle registration requirements and enforcement without placing an officer in a situation of increased jeopardy.

Title Enforcement

Within the law enforcement community, title enforcement responsibilities usually do not generate discussion; however, without specialized training and concentration in vehicle titling and registration, the public can suffer astronomical fraud and economic loss.

Title enforcement requires investigating police personnel to have a comprehensive knowledge of state and local laws, regulations and ordinances, and the idiosyncrasies associated with various types of titles, reissued titles, duplicate titles, salvage titles, and manufacturer's statements of origin. As with most sophisticated law enforcement areas and functions, specialty skills have evolved that are essential to effectiveness.

Hidden VIN

Beginning in 1981, all motor vehicles manufactured in the United States or imported for sale for over-the-road use were required to have a 17-character vehicle identification number (VIN). In 1987, the Federal Motor Vehicle Theft Law Enforcement Act of 1984 became law. Through the enactment of this law, vehicles with a high-theft potential were required to use component part labeling or secondary sources of identification, so-called “hidden VIN's.” Specially trained officers use these hidden VIN's to verify the authenticity of a vehicle or a component part.

By law, this secondary source of identification must be indelibly printed on a label. This label must be permanently affixed to the component part on an interior surface or location, so that it cannot be damaged in a collision or during part installation, adjustment, or removal. It must be located in such a fashion as to prevent its destruction or defacement during normal dealer preparation, including any after-market installation procedures. The label must contain the manufacturer's logo, or some other unique identifier, plus the VIN. Any attempt to alter the label must either leave traces

of the original number or visibly alter the label's appearance. In cases of non-label identifiers, inscriptions to the part must be so that any removal or alteration visibly changes the appearance of the vehicle part.

Locating the secondary sources of identification is the responsibility of the manufacturer. In order to assist law enforcement, manufacturers must notify, in writing, the National Highway Traffic Safety Administration of their numbers and locations within 308 days of the date the vehicle line is offered for sale.

Having the special expertise to investigate cases where secondary sources of vehicle identification are utilized is invaluable to a police agency. The National Insurance Crime Bureau (NICB), a private organization funded by the automobile manufacturers and insurers, has special agents in every state who are available to law enforcement to provide training and other technical assistance in identifying hidden VIN's.

Periodic Motor Vehicle Inspection

Furthering highway safety and providing a safe travel environment for our citizens can be accomplished in a wide variety of fashions. Such is the case when a jurisdiction implements by law a periodic motor vehicle inspection (PMVI) program.

Approximately 22 U.S. jurisdictions, several U.S. territories, and the majority of the Canadian provinces have some type of PMVI program. Some jurisdictions require annual or semi-annual safety inspections at either a state-maintained or a private motor vehicle inspection stations licensed by state authorities. Annual inspections may be required of passenger cars and more frequent inspections of commercial vehicles and school buses. State-level law enforcement agencies are charged with additional inspections of school buses by specially trained troopers or inspectors.

In other jurisdictions, the periodic safety inspections by an authorized inspection station are not required, but officers are allowed to stop vehicles to conduct roadside safety inspections.

Increased concern by the Environmental Protection Agency (EPA) over air pollution caused by automobile emissions has led many jurisdictions to require periodic inspection of motor vehicle emission systems. This procedure can be effectively combined with periodic safety inspections in a single system. Law enforcement executives and associations are encouraged to lobby for enacting PMVI in those states and provinces where it does not currently exist.

Although variation exists within the types of PMVI programs, all ensure the periodic inspection of basic safety components such as steering, tires, suspension, brakes, lighting systems, and glass.

Effectiveness of PMVI Programs

Studies conducted by the National Highway Traffic Safety Administration (NHTSA) have identified vehicle defects as the sole cause of one out of every 43.4 fatal accidents studied. In addition, it has been determined that vehicle defects play a partial role in a much larger percentage of all collisions. The failure of essential mechanical vehicle components—such as ball joints, idler arms, rack and pinion steering units, shock absorbers or struts, tires, and brakes—can cause loss of control of a motor vehicle while it is in motion.

Each jurisdiction is responsible for using any available means to guarantee that vehicle safety components are examined and periodically reexamined to reduce the level of jeopardy that exists while a motor vehicle is being driven.

Public Support for PMVI

While PMVI programs are not always recognized for the benefits they deliver, widespread public support does exist for such programs. Public perception is that the benefits derived from the inspection far outweigh the inconvenience or cost of having to take a vehicle to a service facility for an inspection.

With the proliferation of self-service gasoline stations, no longer is the friendly local attendant looking over a vehicle when it comes in for fuel and advising the driver of the needed replacement of worn components or low tire pressure. Without a PMVI program, what would be a simple, low-cost replacement of brake pads often leads to the expensive replacement of rotors simply because the problem was not caught in time. Thus, PMVI programs can actually reduce the cost of motor vehicle maintenance, as well as enhance safety factors.

Law Enforcement Benefits and Concerns

Requiring an inspection sticker on a vehicle also gives the police additional articulable suspicion to stop a vehicle, and frequently

leads to the detection of drunken drivers, revoked or suspended operators, persons transporting contraband, or stolen vehicles.

The primary concern of state authorities responsible for a PMVI program is to ensure that a quality safety inspection is provided at a reasonable price; inspection facilities are reasonably accessible and convenient; and safety inspection is not utilized as a convenient excuse by unethical mechanics to sell unnecessary vehicle repairs. Periodic use of undercover officers and vehicles to run through the inspection process serve as an effective quality control measure for these programs.

With the conscientious efforts of state agencies, street-level enforcement officers, and public advocacy groups, a PMVI program can be effectively administered and enforced and contribute enormously to highway safety.

Rebuilt and Specially Constructed Vehicles

Rebuilt Vehicles

Rebuilt or reassembled vehicles are often utilized by motor vehicle thieves to conceal the identity of a stolen vehicle. Using the salvage parts of several stolen vehicles to rebuild the vehicle, the thief then represents the stolen vehicle as one rebuilt and is able to secure the proper documentation to legitimize the sale of the vehicle.

A second concern regarding rebuilt vehicles is the vehicle's level of safety provided to its occupants and its road worthiness. Law enforcement officials must take specific measures to ensure that stolen vehicles are not legitimately sold in the public market and that unsafe vehicles are not allowed to operate on the highways.

To prevent the sale of stolen vehicles, law enforcement personnel should examine all salvaged or rebuilt vehicles prior to issuing a title. Specially trained VIN examiners, generally at the state level, should closely scrutinize each such vehicle for signs of repair and the replacement of parts. The examination should include a review of the documentation to ensure all replacement parts are accounted for and that component part labels or inscriptions are intact and free of tampering. Any discrepancy should be thoroughly examined, including an examination of major component part labels and identifiers.

Rebuilt vehicles can offer an affordable alternative to individuals who otherwise could not purchase a vehicle, but unscrupulous or incompetent rebuilders may shortcut or overlook critical safety components. For this reason, all rebuilt vehicles should be inspected for safety compliance. A check of all vehicle safety equipment should be performed to assure compliance with applicable statutory requirements.

Through a systematic examination at the time of registration and title, the potential for fraud is significantly reduced while, simultaneously, unsafe vehicles are detected.

Specially Constructed Vehicles

Specially constructed vehicles, "street rods," and other assembled vehicles pose many of the same problems as rebuilt vehicles. A specially constructed vehicle generally is not visually recognizable as being produced by a particular manufacturer, while the assembled vehicle is distinguishable because its composition is by a well-known manufacturer of commercially produced vehicles.

When the owner of a specially constructed or assembled vehicle requests a title or registration, law enforcement and vehicle titling authorities should ensure that the vehicle is examined for safety compliance. Such vehicles should be required to meet and be in compliance with all state equipment laws prior to final inspection and the issuance of a title.

A particular problem involves vehicles fitted with oversize tires or "jacked up" by other means so that they are extremely high on the road and their centers of gravity have been drastically altered. Such alterations can impair the handling dynamics of the vehicle and lead to component failure and dangerous traffic crashes.

When such vehicles slip through the registration and titling process, street-level law enforcement officers are obligated to enforce state laws and local ordinances regarding such standards as bumper height requirements. Law enforcement agencies should have written policies encouraging their officers to enforce these requirements.

PART TWELVE:

Roadway Management Through Engineering and Enforcement

Enforcement and Engineering Liaison

The basics of an effective traffic safety program involve the “three E's”—enforcement, engineering, and education—working in conjunction for safer roads and drivers.

Some accidents are caused by vehicle defects. Adopting mandated federal motor vehicle safety standards, such as seat belts, air bags, collapsible steering columns, padded dashboards, child safety seats, and rollover and side impact protection, have reduced the number of injuries in traffic accidents. Periodic motor vehicle inspection programs in many jurisdictions assure us that vehicles maintain their road worthiness during their useful lives.

Aggressive traffic enforcement programs by state police and highway patrol agencies, county sheriffs' departments and local police departments deter unsafe drivers by suspending or revoking driver licenses for hazardous moving violations. In addition, enforcement efforts to detect vehicle equipment violations remove unsafe vehicles from the road.

Public information campaigns conducted by the National Highway Traffic Safety Administration, state governor's highway safety representatives, state and local law enforcement agencies and licensing authorities, and public groups such as MADD (Mothers Against Drunk Driving), and SADD (Students Against Driving Drunk), along with high school and commercial driver education programs, violator schools, and driver improvement programs, acquaint drivers with rules of the road and instill proper driving attitudes.

The Final E

The final E involves engineering. Design, construction, and maintenance of highways and traffic control devices can be instrumental in reducing collisions.

Seldom do enforcement and engineering work in concert to promote highway safety, despite the fact that police officers on patrol are perhaps the best eyes and ears that traffic engineers could have. By reporting obscured or nonfunctioning traffic control devices and dangerous highway conditions and providing feedback from citizen complaints and the study of traffic congestion problems, officers can offer important input for traffic engineers. Engineers can work with officers by making highway improvements such as changing speed zones, erecting new types of traffic control devices, and placing roadside objects, such as utility and sign poles and guard rails, so that out-of-control vehicles are slowed or stopped without causing injury to occupants.

The Precedent Is Set

Years ago, the Bureau of Public Roads, the forerunner of the present Federal Highway Administration (FHWA) held the first national joint enforcement/engineering conference. State traffic engineers and top law enforcement officials met for the first time, many after working in the same state for years.

At this conference, common goals and interests were promoted in the area of traffic safety and an efficient transportation system. It was recognized that, in planning new highways, cross-overs are needed on controlled access highways to provide access for law enforcement vehicles; as well, space is required for pulling commercial vehicles over for weight checks and safety inspections. It was also recognized that both the efforts of engineering and law enforcement are necessary: short-term traffic problems can often be solved efficiently by law enforcement actions, while long-term problems are often best removed by engineering solutions.

Out of this first national conference grew suggestions for regional, multi-disciplinary enforcement and engineering conferences throughout the nation, whereby state law enforcement and DOT engineers from multi-state regions could discuss problems and exchange ideas. Individuals attending from each state could expand this concept when they returned to their home states.

Finally, there developed a concept that state Department of Transportation officials and state, county and local law enforcement agencies could meet with their counterparts in both statewide conferences and regional meeting within states.

Jurisdictions could schedule regular meetings between these disciplines, even allowing engineers to ride with police officers and see at first-hand the situations that an officer was talking about. Construction conferences could be held during the planning stages of highway improvement jobs so that law enforcement would have strong input. The need for funding of patrols could be taken into consideration in budgeting for highway improvements. Work zone safety could be discussed and improved.

Resources Available

The Texas Engineering Extension Service (TEEX) of Texas A&M University in College Station, Texas, is an excellent resource on this concept, since TEEX is the driving force behind a successful engineering/enforcement liaison in the lone star state. Arizona, capitalizing on the Texas experiment, also holds regional and local meetings between DOT engineers and Department of Public Safety commanders and engages in the joint planning of safety projects, including engineering and enforcement concepts, with consideration of all the other disciplines that play a significant role. DOT's top managers attend DPS commanders' meetings and develop mutually agreed-upon policy statements, recognize differences of opinion and deal with them effectively, and emphasize risk management which has reduced lawsuits arising out of allegations of collisions caused by unsafe highway conditions.

In any state where these joint engineering and enforcement conferences are not currently in use, police executives and

associations and highway transportation planners and engineers should be proactive in bringing about such efforts.

Freeway Incident Management: Strategies for Relieving Congestion

The urban areas of the United States have experienced tremendous population growth over the past ten years. With this growth has come rapidly worsening traffic, as both passenger vehicles and freight carriers stretch the capacity of our road systems. While adequate mass transit facilities are generally available inside city limits, development patterns have placed both the people and the jobs just *outside* the city areas, creating new transportation patterns. The lack of mass transit to meet the needs of the growing suburban commuter force has left people stuck in their vehicles, typically one person to a car.

The increase in numbers of one- or two-occupant vehicles has overburdened our highway system to the point that peak periods of highway use ("rush hours") frequently extend to two or three hours. Traffic slows to 30-35 mph on roadways designed to move vehicles at 55 miles per hour or more. The result is more pollution, more frustrated commuters, and a higher cost of commuting due to increased fuel consumption.

Traveling in or around urban areas during a peak-use period is irritating at best, but it can be downright miserable when an incident further impedes the traffic flow. In a typical freeway lane capable of carrying 2,000 vehicles each hour, an incident that blocks one lane out of three will reduce that highway's capacity by nearly 50 percent. Thus, when blockage occurs, the cause needs to be eliminated quickly so that ordinary delays do not become extraordinarily long. Freeway Incident Management (FIM) can help reduce the delay caused by non-recurring incidents.

Problems Caused by Lane Closure

Traffic engineers estimate that, for every minute a traffic lane is blocked, it takes four minutes to restore the flow after the incident has been cleared. When an incident occurs during peak-use traffic periods, even a small reduction in the time taken to clear the incident can greatly relieve congestion.

In an average urban area such as Washington, D.C., and its suburbs, as many as 400 blockages lasting one hour or more will occur annually. Many more incidents will last less than one hour.

The FHWA has translated the average 20-minute lane blockage into a monetary figure to show how freeway incidents directly affect the national economy. If one lane of a three-lane freeway is blocked for 20 minutes—assuming the freeway is running at capacity—the delay caused to motorists will exceed 1,200 vehicle hours. At the FHWA-assigned value of $4.00 per hour for each vehicle hour of delay, the cost of the incident due to the delay alone is approximately $5,000.

The goal of FIM, in addition to saving lives and property, is to minimize the effects of such incidents on traffic congestion and reduce the possibility of secondary incidents.

This can be accomplished by the following:

1. Reducing the time spent for incident detection and verification;
2. Reducing response time by the appropriate agencies;
3. Introducing on-scene management of personnel and traffic;
4. Reducing the time spent to clear the incident from the roadway; and
5. Providing accurate and timely information to the public in order to divert traffic from the incident.

What Is An Incident?

An incident that causes significant delay on a freeway can be as simple as a disabled vehicle in a traffic lane or on a shoulder. It can be a lost piece of lumber from a truck that causes motorists to change lanes suddenly. Such minor incidents, if detected promptly, can be cleared rapidly with little residual affect on peak-use traffic.

Major freeway incidents on the other hand, generally include

1. Motor vehicle crashes involving serious personal injury;
2. Motor vehicles on fire;
3. Crashes where a load of cargo is spilled;
4. Crashes involving hazardous material cargo;
5. Fatal crashes;
6. Overturned cars or trucks;
7. Downed power lines across roadways; and
8. Structural failures of bridges or roads.

Such incidents result in delay, inconvenience, wasted fuel, frustration, and higher costs to motorists. Stopped traffic can create secondary motor vehicle crashes. Local streets can become gridlocked by motorists trying to avoid the incident scene.

What Can Be Done?

No single agency can effectively respond to and clear a major traffic incident. Traditionally, the agencies charged for the motor vehicle crash clearance are police, fire, and rescue services, and either public or private wrecker companies. If structural damage is done as a result of the incident, the local and state Department of Transportation (DOT) is called to respond, generally after the other agencies have cleared the scene.

With FIM, many other agencies can be involved. Acting together, these agencies can reduce the total time to resolve and remove incidents by more than 50 percent. Agencies and services that should be an integral part of planning for and responding to

freeway incidents include; the state police and law enforcement agencies having jurisdiction over surrounding areas, the state DOT, local transportation agencies, large and small rig wrecker companies, emergency medical services, fire departments, local media representatives, local traffic reporters, the Department of Public Works, traffic engineers, and public and private safety service patrols.

In the past, tasks were accomplished sequentially at a crash site: The police would secure the area around the incident, rescue personnel would work at rendering aid and removing victims, the police would investigate the crash and finally, wreckers would be called to tow the disabled vehicles. After the incident was cleared, DOT officials would be notified of downed signs or missing guard rails.

At each stage of the incident, responding emergency vehicles would arrive and park wherever the operator could find an open space. The result was a mixture of emergency vehicles often blocking each other for long periods of time, even when some vehicles were no longer needed.

Creating An FIM Plan

The first step is to examine the locality's needs. Whether an area is highly urbanized, with recurring traffic congestion, or rural, with traffic problems occurring only during major incidents, will determine the focus and extent of planning for freeway incidents.

The second step is to identify those public and private resources available to the locality that have a vested interest in transportation planning and safety. Once these various agencies and services are identified, a request is made for each to supply a command-level person to attend an initial conference.

The focus of the first meeting is on consensus building and determining that traffic incidents are a problem and that, by acting in concert, time-saving policies can be implemented within each agency.

During the next phase, a working group is established to identify tasks, resources, and existing capabilities of each entity focusing particularly on jurisdiction, agency perspective and responsibilities, interagency field communication, administrative coordination among agencies, legal ramifications, site management, political sensitivity, consensus building and goal setting.

In these early stages, the group determines how best to use existing resources to improve detection, verification, response, clearance, and recovery of freeway incidents. To assist states and localities in accomplishing these tasks, the FHWA makes available a four-hour upper management overview and a two-day workshop for practitioners, detailing step-by-step methods to create and implement FIM plans and response teams. You can access these services by contacting your FHWA state coordinator.

System Components

Freeway Incident Management can be broken down into seven components: pre-planning, detection and verification, response time, site management, clearance time, motorists' information, and recovery time.

1. Planning

When an incident occurs, the focus of FIM is to “keep the traffic moving.” Alternative route plans should be identified, specifying not only location but also the resources necessary to expedite traffic movement. Simply diverting traffic from the freeway to local surface streets is not enough, since traffic signals, stop signs, toll booths, or high-occupancy vehicle restrictions may interfere with the free movement of traffic. To remove these impediments, it may be necessary to make signal timing changes or to provide for manual traffic direction.

Planning for these problems will identify the resources needed and save 30 to 40 minutes of on-scene planning. This time savings in the initial stages of an incident equals a 90- to 120-minute reduction in traffic congestion after the incident has been cleared.

Management of an incident and the surrounding traffic problems is a team effort, and each agency has a specific role to play. Planning minimizes on-scene conflict and confusion, as well as redundant requests for additional services.

2. Detection and Verification

Once an incident is brought to the attention of the agencies responsible for maintaining safety and traffic flow, it is necessary to separate real incidents from false alarms and to determine the exact nature of the incident. The speed with which an incident can be detected and verified directly affects the amount of time required to respond to and clear the incident and restore traffic to its normal flow.

Fast, accurate detection often results in reduced traffic disruption and greater cost savings. Options to consider are CCTV cameras, CB radio monitoring, incident call-in lines for use by drivers with cellular phones, and visual observations through peak-period motorcycle patrols and dedicated freeway service patrols. Although more expensive options are available—including aircraft patrol, electronic loop detectors, and central information processing and control sites (traffic management centers)—initial planning for FIM should focus on maximizing *existing* resources and providing low-cost enhancements.

3. Response Time

Police and fire/rescue vehicles have an advantage when responding to an incident. They are equipped with emergency lights and sirens that assist their operators in navigating through traffic. Initial response by these agencies is already fast. However, the thrust of incident management response is aimed at getting the *appropriate* equipment and resources to the scene. Support agency vehicles—typically not equipped with emergency lights and sirens—lack the legal authority to respond at the same speed as police and fire vehicles. Alternate routes must be developed for these vehicles.

Response to major incidents is thus implemented through the planning process, where personnel available for major incident response are already identified beforehand. Often, police agencies think in terms of patrol officers as being the only ones to respond. In many agencies, however, a variety of officers could be called upon to assist in major traffic incidents—those normally assigned to educational, analytical or specialty units (such as Warrant Service or SWAT officers), for example. A list of personnel resources for all agencies must be established.

Consider such questions as where to find large front-end loaders to remove spilled cargo or construction barricades. Can auxiliary light units be found and moved to the scene? Where can asphalt be obtained at 2:00 a.m? A list of these resources, their locations, and contact persons should be maintained.

Assigning officers and service patrols to congested road sections during peak-use periods will reduce the travel time in that area once an incident has been detected. When assigned to a patrol area that includes a high-incident section of freeway, an officer can be directed to patrol the freeway during peak-use periods, when not on another call for service. Transportation departments can assign maintenance personnel to patrol tasks during peak-use periods. These actions will create greater patrol of congested areas and prevent routine maintenance activity from being conducted during peak-use periods.

Training of all personnel of the agencies involved in incident management creates a greater awareness of each individual's role in incident clearance. When properly trained, workers know what their tasks will be and can begin executing activities in accordance with the FIM plan for the specific incident.

A direct correlation exists between effective interagency communications and reduced response time. Transportation officials must be able to communicate with police or fire/rescue personnel on the scene to determine the correct response. Radio or cellular telephones can be used to relay response information to avoid delay, or make detailed requests for specific equipment and personnel from other agencies. Communications is particularly important when planned alternate routes must be modified due to construction or incident events (such as chemical fumes passing from incident site to alternate route).

Each local FIM planning team should consider pre-staged equipment storage areas, administrative traffic management teams, public education programs, central information, processing and control sites, and better identification of exact locations on freeways (more frequent mile-post markers, for example).

Like other facets of FIM, these must be evaluated as to cost, practicality, frequency of use, and overall benefit. Each planning team must select the options that work best in its locality, implement the procedures, and refine their use.

3. Site Management

The effectiveness of any incident response is directly related to the management at the scene. A well-managed response based on a less effective technique may be more successful than a superior technique that is mismanaged.

Incidents involving a single agency response require only that the personnel understand their own duties and are effectively supervised. Multi-agency response on the other hand, compounds the issue of site management. Each agency must understand not only its own role and tasks but also the other agency's respon-

sibilities. This creates a need for coordination and control which increases as the incident becomes more complex.

Administrators at the highest level of each agency must instill in subordinates the belief that fast, efficient and cooperative problem resolution is the primary goal. In the absence of such an attitude, “turf wars” can develop that will inhibit incident resolution.

A variety of methods can be used to coordinate and control multiple-agency response to incident resolution. The most effective method is to recognize from the outset that each agency must have its own operational command post, which reports to a centralized command post comprised of command or decision-making personnel who are not involved in the actual operational tasks of their respective agencies.

Established to coordinate and facilitate the activities of the individual agencies, the centralized command post would not attempt to tell a fire department how to manage a fire in a tractor trailer but would be responsible for ensuring that DOT equipment was properly staged to repair the road surface after the fire had been extinguished. It would also ensure that equipment needed to mark alternate routes was delivered and placed properly. Finally, the centralized command post could serve as the contact point for media information and motorists' advisories, so that conflicting information would not be disseminated.

5. Clearance Time

During incident clearance, the vehicles or debris are removed from the roadway so that they no longer present a hazard or distraction to motorists. Inappropriate or insufficient response of personnel or equipment will greatly lengthen the time needed to clear an incident from the road. On the other hand, clearance times can be reduced by such simple steps as giving directions for access to the site or providing a police escort for wreckers.

Clearance also refers to the sweeping or loading of debris deposited as a result of the incident. In most areas, towing and clearance are the responsibility of the wrecker company removing the vehicle. Police agencies usually request wreckers either by

contract or a rotation list; the latter method may perhaps result in an undertrained or minimally equipped wrecker responding to a call for service. Care must be taken to ensure that the wrecker companies on the list meet minimal equipment specifications and the operators of wrecker/recovery equipment are trained in the use of the apparatus.

Requests for wrecker services should specify the number, size, weight, load and types of vehicles to be removed, as well as the amount of damage and whether or not the vehicle is overturned. Maximum response times for the arrival of wrecker equipment at the scene should be identified as part of the requirements to be included in a wrecker rotation list or contract.

The nature or scope of the incident may require public agencies to help with removing the debris or vehicle. A spilled load of plywood would require a loader machine to move it quickly out of the way. Because a DOT loader is often more accessible than a private contractor's, it should be brought to the scene and put to use while the wrecker company is removing the vehicle.

Clearance time is reduced by coordinated multi-agency action during the clean-up phase. A wrecker company can be hooking the vehicles to tow trucks while the DOT uses a loader to remove large debris (such as a spilled load of gravel) and the fire department washes the minute pieces of debris to the shoulder.

6. Motorist Information

Often, when motorists are caught in the initial backup of an incident, they will devise their own alternatives. Some may attempt to drive on the shoulders of the road and thereby take the shoulder access away from responding emergency vehicles. Once at a dead stop and in a long backup, some motorists will leave their vehicles and walk to the incident site to see what is causing their delay. Even worse, they may abandon their vehicles and walk to telephones located off the freeway to advise family or child care providers of their delay.

As soon as practical, motorists must be told the reason for the delay and the location of the incident. Those not already at the site should be advised how to avoid the congestion. If they are expected to stay on designated alternate routes, motorists must be confident that these routes are visible and clearly marked. Persons unavoidably caught in a traffic backup, sometimes for hours, must be assured that public officials are working to free them from the circumstances. They should also be told how to obtain assistance if they require it.

Traffic jams caused by major incidents may dictate the need to provide water, fuel or emergency medical assistance. In one major backup in Virginia, more than 1,000 vehicles were stopped between exits for nearly 2-1/2 hours in 100-degree heat. During the clearing phase, 17 vehicles required fuel or booster starts, one motorist suffered a heart attack, and a baby was delivered.

There are many means by which motorists can be advised of the nature of the problem, alternate routes, and any specific instructions. Some examples include commercial radio stations, fixed and portable variable message boards, detour route signs, highway advisory radio systems, and vehicle-mounted public address units.

7. Recovery Time

Recovery time occurs after the roadway obstruction has been removed and all lanes are reopened for travel. Calculated to end when normal traffic conditions return, recovery time is enhanced by leaving diversion traffic control in place until the main roadway is again operating at a normal pace. Too often, traffic control procedures are dismantled as soon as the wrecker pulls off with the crashed vehicles. To be truly effective, traffic management must continue until the congestion has dissipated.

Incident management is a constant and dynamic process. A plan is devised, implemented during an incident, and finally reviewed afterwards for effectiveness. Most public safety agencies conduct after-action critiques of major incidents; police departments after SWAT operations; fire departments after major fires. The same review must be conducted for freeway incidents. Each agency must examine its own response. Then, each agency commander must meet and discuss the efficiency of their interaction with the other agencies involved.

Public and media criticisms of the incident should also be examined. News articles, editorials and letters to the editor or to politicians will identify the perceived strengths or weakness of the response. The team must review all these sources, honestly evaluate the group effort, and modify the plan as necessary.

With the Intermodal Surface Transportation Efficiency Act of 1991, resources from FHWA and NHTSA are available for states and localities to create incident management plans and teams.

For more information on a step-by-step approach to incident management systems, contact David Hellman, Federal Highway Administration, Room 6311, Nassiff Building, 400 Seventh St., SW, Washington DC 20590, regarding the FHWA Workshop, "Relieving Congestion Through Incident Management," Demonstration Project 86.

The Incident Command System

An issue for law enforcement is knowing how to manage frequent, complex emergency incidents effectively while avoiding the problems associated with past responses. The National Interagency Incident Management System (NIIMS) and its on-scene management component, the Incident Command System (ICS), offer the greatest potential for law enforcement application.

Genesis of the System

The ICS and its successor, the NIIMS, evolved from FIRESCOPE, a project in Southern California organized for potential emergencies in the early 1970s. A series of wild-land fires in 1970 in a seven-county area made it apparent that federal, state and local jurisdictions had no management mechanism or resources to allow effective response to wildfire emergencies, which recognize no jurisdictional boundaries. Funded by the United States Congress, FIRESCOPE was chartered to assist Southern California fire service agencies in multi-agency coordination of emergencies involving multiple jurisdictions and exceeding a single jurisdiction's capabilities. The project developed two interrelated and independent systems, the ICS and the Multi-Agency Coordination System (MACS).

Incident Command System

ICS operates on both conceptual and operational levels. At the conceptual level, it represents agreement on common organization and terminology for multi-agency personnel to manage resources and activities efficiently at incidents involving two or more emergency response agencies. ICS encompasses not only fire emergencies but all natural and technological emergencies, from

earthquakes to hazardous materials transportation incidents and civil disturbances. ICS works with, and parallel to, the MACS in defining and focusing information collection, processing and distributing resulting data, and identifying related human and material resource needs. Its effectiveness depends on voluntarily accepting its terminology and concepts into the daily operation of each agency, from handling of routine, single-agency incidents to complex, multi-agency operations.

Multi-Agency Coordination System

MACS is a coordinating process involving top agency managers. It integrates the collection, processing, and dissemination of information necessary in multi-agency operations, and provides for rapid allocation of required resources during major incidents.

National Interagency Incident Management System

The NIIMS, which became operational in 1982, evolved from and built upon the systems developed from the FIRESCOPE project. Publications providing explanations and details of the system are available from the National Fire Academy in Emmetsburg, Maryland.

Operational Characteristics

The ICS was developed and designed to meet a number of criteria critical to effective incident management, including the capability to provide for single jurisdiction/single agency involvements; single jurisdiction/multiple agency involvements; and multi-jurisdiction/multiple agency involvement. The organizational structure is adaptable to any emergency or incident, is applicable and acceptable to emergency responders throughout the country, and readily adaptable to new technology. It provides the ability to expand an operation logically from a single-unit response on up,

with common elements and organization, terminology, and procedures. It can be implemented with the least possible disruption to existing systems.

ICS consists of eight components utilized interactively. These components include common terminology, modular organization, integrated communications, unified command structure, consolidated action plans, manageable span of control, predesignated incident facilities, and comprehensive resources management.

ICS consists of five major functional areas: command, operations, planning, logistics, and finance/administration. Through these major functions and subordinate functions in each category, the incident commander has all the management tools necessary to handle any size or type of emergency.

Law Enforcement Application

ICS is readily adaptable to law enforcement and other emergency response disciplines. Since its adaptation by the San Bernardino, California Sheriffs Department in the early 1980s, law enforcement agencies began recognizing its value in managing police emergencies. It was successfully used to manage the July 1989 DC-10 airliner crash in Sioux City, Iowa, and the October 1989 Loma Prieta earthquake in California.

In the Sioux City incident, which resulted in over 100 deaths and numerous injuries, rescue operation supervisors claimed that one of the most important factors contributing to the successful management of this emergency was the use of an ICS.

During the Loma Prieta earthquake, which affected a significant area from Oakland to Santa Cruz some 75 miles to the south, emergency crews began to respond from hundreds of miles away, many without any type of formal request. The ICS system was integral to managing this massive disaster response, as a planned procedure in some jurisdictions and conceptually in others. It provided a more organized and systematic structure for the management of the large volume of resources that assembled for the incident. Many jurisdictions operated under the ICS unified

command structure, while law enforcement, the fire service, and other emergency response disciplines shared management responsibility for emergency operations.

Adaptation and Training

The key to the success of law enforcement ICS is the ability to modify and adapt the system to regional and law enforcement needs while keeping it completely compatible with the fire service. For effective and efficient operations to occur, the management mechanism of major emergency response disciplines (fire, law enforcement, EMS, and transportation departments) must have readily interchangeable and recognizable components and terminology. Unlike the fire service, which is likely to have a company officer and several firefighters responding to an incident on a given piece of apparatus, law enforcement response generally consists of a single officer/single patrol unit. This reduced manpower situation requires the initial police responder to perform both command and tactical functions (in a simple motor vehicle accident, this would be overall management and investigation), unlike the fire service response, whereby the company officer assumes command and subordinate personnel perform the tactical functions. To adapt the ICS system successfully, police personnel must be trained and ICS must be integrated into daily operations.

The effectiveness of ICS training increases when an integrated approach involves regional law enforcement agencies and representatives of other emergency disciplines. This enhances closer working relationships and on-scene coordination and cooperation. Training conducted by the Massachusetts State Police includes not only state police supervisors but also representatives from other law enforcement agencies, the Massachusetts Department of Transportation and Turnpike Authority, representatives of towing associations, Port Authority supervisors, and representatives of other emergency response providers. Interagency relations have been improved, and the concept of teamwork, vital to the management of complex incidents, has been established and reinforced.

Traffic Management and ICS

Typical traffic incidents consist of disabled vehicles, accidents, or load spillages. They are a major cause of traffic congestion. The FHWA estimates that the nation loses 1.3 billion vehicle-hours of delay due to incident congestion each year, at a loss of nearly 10 billion dollars. This figure does not take into consideration the economic cost of wasted fuel and environmental damage by vehicles idling in incident-related queues. Congestion can be minimized by clearing incidents as quickly as possible and diverting traffic before vehicles are caught in the incident queue. The time saved by an ICS program depends on how well the four stages of an incident—*detection and verification, response, clearance, and recovery*—are managed.

The ICS is the most effective and efficient on-scene management process available to law enforcement agencies today. It is particularly applicable to the response, clearance and recovery stages of traffic incident management. Its concepts of initial scene control and management, integrated operations, and teamwork approach result in reduced clearance times for traffic incidents of all types. This reduction mitigates the effects of traffic congestion at the incident site. Major traffic accidents and hazardous material spills require the participation and expertise of numerous emergency response disciplines. ICS provides a mechanism for these disciplines to work together in an integrated and coordinated manner, toward a shared goal of rapid incident clearance.

ICS As An All-Risk System

In addition to its effectiveness at highway transportation incidents, the ICS has evolved into an all-risk management process for all types of emergencies and all law enforcement activities. Response to the natural and technological disasters, civil disturbances, security and crowd control details, and the entire gamut of law enforcement activities can be managed through the ICS implementation and use. The ICS is a widely accepted tool among law enforcement agencies because it is logical and easy to implement yet still compatible with the ICS utilized by fire and

other primary emergency response disciplines. It has been accepted and endorsed by the IACP Highway Safety Advisory Committee as the preferred method of handling major highway emergencies.

Abandoned Vehicles and Shoulder Collisions

Each year, thousands of vehicles break down and are left abandoned on highway shoulders. Law enforcement officers have long considered these abandoned vehicles as traffic hazards, regardless of how far off the road or how short a time they are allowed to remain. If the Washington State Patrol had its way, *any* abandoned vehicle would be defined as a traffic hazard. Although this position may sound extreme to the motorist who runs out of gas on the way to work, it is not without good cause.

Over a ten-year period, Washington State experienced more than 3,000 collisions involving abandoned vehicles—resulting in 40 deaths, 1,774 injuries and nearly 36 million dollars in economic loss. Police efforts to remove these vehicles have been hampered by the issue of property rights, weak impound legislation, and a general resistance on the part of the courts and the public to recognize abandoned vehicles as traffic hazards.

Overview

The Washington State Department of Transportation has stated, “Millions of dollars are spent each year to make highways safer and the roadside features more forgiving to errant drivers. Why, then, do we tolerate parked or abandoned vehicles to remain along our highways for extended periods of time? We have designed standards that require a 'clear zone' on limited access highways. Nothing can be placed in this zone without providing protection to the motorist in the form of a guardrail, barrier, crash cushions, or break-away supports. Yet, we allow heavy vehicles to stand a few feet or even inches from the traveled lanes.”

The prompt removal of abandoned vehicles is necessary in the interest of traffic safety; however, because removal involves a tow bill for the vehicle's owner, the issue has always been

controversial. A motorist who runs out of gas and is going to return in a few hours becomes upset to learn that the police removed the vehicle and he must now pay a tow company to recover the vehicle. Yet the same motorist who balks at paying the tow bill is first in line to file a claim against the state for "failure to protect" when he discovers his vehicle has been vandalized, stolen, or damaged.

In Washington, state law allows a 24-hour grace period for vehicles stopped along the roadway before they are deemed to be a traffic hazard. Although several state laws forbid such stopping and standing, this rule clouds the issue.

The Washington State Supreme Court supported abandoned vehicle impoundment when it ruled that police impounds were appropriate as a part of a police "community caretaking function, if the removal of the vehicle was necessary in that it was abandoned, impeded traffic, or posed a threat to public safety and convenience." Even with this judicial support, however, resistance has persisted in the lower courts. When an officer makes a decision to impound, the agency risks paying the tow bill. In one year alone, the Washington State Patrol paid more than $21,000 for 160 tow bills at the direction of the courts.

The Washington State Patrol has explored the relationship between aggressive impound policies and shoulder collision rates. In 1985, the impound policy was more lenient in response to public pressure and judicial rulings. In 1986, a more aggressive policy encouraged impoundment if the trooper judged a vehicle to be a traffic hazard. Shoulder collision rates in three counties in the Puget Sound metropolitan area decreased 18.3 percent by the end of the year.

Problem Areas Identified

To document the problem of abandoned vehicles, the Washington State Patrol conducted a study focusing on four areas of concern:

1. Whether or not stopped, parked, or abandoned vehicles in the right-of-way of limited access highways jeopardize public safety.

2. Agency impound policies;

3. State highway shoulder collision rates; and

4. Court reaction to law enforcement-initiated impoundment of abandoned vehicles.

Analysis quickly identified three problem areas in analyzing interstate shoulder collision data over a nine-year period:

1. Shoulder collision rates on urban interstate highways were extremely high compared to rural interstate highways.

2. Injury rates for shoulder collisions were substantially higher than the rates for all other accident categories.

3. The average age of vehicles struck was 9.6 years.

The study noted that 70 percent of all shoulder collisions had occurred in the state's three most populous counties; 41 percent involved injuries.

The study recommended a two-hour impound policy for all abandoned vehicles on limited access highways where the speed limit was 55 mph or less, and four hours for all other limited access highways. It also suggested urban areas should post restrictive signs advising that abandoned vehicles were subject to impound.

Following the study, the state Department of Transportation looked at the shoulder collision problem again and found that, over a 7-year period, 3,165 shoulder collisions had occurred on interstate,

limited access, or other state highways; 57 percent of them occurred in urban areas, 43 percent in rural areas. Additionally, 55 percent occurred at night. These collisions caused 40 deaths and 1,774 injuries. These findings reinforced the need to remove abandoned vehicles in all areas, urban and rural, day and night.

Determining Impound Policies

When considering any state's liability in determining impound policies, a “catch-22” situation clearly arises. If vehicles are promptly impounded, the accident potential is reduced, but the state's likelihood of paying a contested tow bill increases. If vehicles are not promptly removed and are vandalized or struck, the state's liability is even greater when the relatively small cost of a tow bill is compared with potentially large costs of wrongful death or serious injury lawsuits. One wrongful death award can cost the state much more than paying hundreds of $100 toll bills.

Police departments who patrol high-speed highways should choose the most aggressive impound policy that is legal, in order to protect the public interest and reduce liability. An aggressive public information campaign can help raise awareness of the abandoned vehicle problem. Additionally, law enforcement agencies should lobby their legislatures to request changes to eliminate length grace periods contained in motor vehicle codes.

Agencies that fail to develop and enforce impound policies may face court-imposed costs, and shoulder collision rates likely will rise, thereby increasing the agency’s potential liability. It is hoped that sufficient evidence is now available to convince court officials, the public, and police administrators that vehicles abandoned anywhere upon highway right-of-ways are hazardous to the public safety.

Reducing Crime in Rest Areas

Law enforcement agencies throughout the country are plagued with rest area crimes. These crimes irritate and annoy the public, make them fearful, and frequently harm tourism.

The first step in attacking the problem is to determine the crime problem, its location, and extent and to identify or profile the people causing these crimes.

Developing a Plan

To develop a plan to eliminate rest area crime, law enforcement must coordinate efforts with other agencies, such as the DOT or the Department of Parks and Resources, that manage the rest areas. It is important to elicit the opinions and support of the officers on patrol and the personnel of these other agencies. We should consider multiple concepts to eliminate crime, including the installation of signs, rest area maintenance, officer and citizen awareness campaigns, and enforcement. Goals and objectives should be set for any plan and should correspond with the police department's mission and goals.

Crimes occurring in rest areas include prostitution, homosexual activity, vandalism, thefts of abandoned vehicles, open-air drug markets, panhandling, vagrancy, car jacking, and car-clouting.

Establishing Operational Procedures

When a plan has been devised, the department needs to establish the operational procedures to carry it out. One of the first steps is to set up a covert surveillance in order to determine the extent of the problem and the specific behavior to be targeted.

Typically, a covert surveillance will reveal such problems as an extraordinary number of men cruising in cars or on foot and seeking sex with other men. Often these men will be openly drinking or using narcotics in public, exposing themselves, vandalizing the toilet areas with graffiti, and cutting holes in toilet walls. Illicit sex acts, homeless persons using rest areas for a place to live, and criminals lying in wait to commit a crime of opportunity will soon be observed, along with their intended victims, the motoring public—tourists, travelers, and truck drivers who use the rest areas for their intended purposes.

Once information is obtained from covert surveillance, it is best to solicit volunteer officers to perform an undercover enforcement operation. Planning should go into such areas as

- the type of clothing undercover officers will wear;
- the number and location of backup officers and when they will be deployed;
- various communications signals and emergency signals;
- the role of the supervisor;
- tactics to be used in contacting subjects, arrest procedures including bookings, transportation, and issuing citations;
- providing undercover officers with false identification, tactics and strategies;
- notification of patrol commanders and working units that an undercover operation is in progress;
- subtle identification means undercover officers can use to identify themselves to on-duty officers; and
- any necessary equipment for the operation.

Training Requirements

The most important step prior to implementing a rest area enforcement operation is training all the persons involved. This training should focus on

- the laws to be enforced (elements of the crime),
- descriptions/profiles of targeted individuals, areas, and crimes,
- communications procedures,
- equipment use, and
- guidelines for arrest, supervision, and operational procedures.

Implementing the Operation

Immediately prior to beginning the operation, all involved officers should be gathered for a thorough briefing and be identified to one another. Any equipment, such as a surveillance van and video, should be checked to ensure it is in proper working condition. The laws of arrest and entrapment and preferred methods of making an arrest while out of uniform should be reviewed.

Typically, arrests will be made for such offenses as patronizing a prostitute, public indecency, possession of a controlled substance, minors in possession of alcohol, possession of drug paraphernalia, open containers of alcohol in a motor vehicle, DUI, and other traffic offenses.

Critique Procedures

Following each shift and at the conclusion of the operation, a critique should be held for not only the officers and their supervisors but also other agencies involved, such as the DOT and the Fish and Wildlife Service. Participants should brainstorm on how the operation worked and how it can be improved. All participants should have an opportunity to express their ideas.

Collection and Analysis of Data

Reporting procedures should be established at the beginning of the operation and carefully followed. Data should be input and analyzed to determine the effectiveness of the operation and to defend against possible later public criticism.

Monitoring Rest Areas for Further Problems

Once covert operations have ceased, officers on routine patrol, as well as DOT employees and others, should be impressed with the necessity for continued monitoring of the rest areas and notifying supervisors if illegal activities reappear. A brief, intensive period of enforcement will have a "halo" effect for a few weeks or months, but unless the operation is repeated from time to time, the problems will reappear.

What Departments Have Learned

Some departments, such as the Washington State Patrol, have had great success in implementing rest area enforcement operations. A great deal can be learned from the experience of these agencies. Some of the things that the Washington State Patrol identified include the following:

1. More than six hours of training is required to prepare officers adequately for this type of operation.

2. Not everyone can play the role of decoy. Troopers who have worked their entire careers in uniform and in marked cars may find it difficult pretending to be a male prostitute; few can play this role effectively. Most are uncomfortable, especially when they must listen to men talk about sexual experiences, likes and dislikes. Nobody likes working the toilets, looking for open sex acts or men exposing themselves. In addition, they are

sometimes subjected to ridicule and joking by their peers. Officers can become burned out very quickly; for this reason, all officers assigned to these programs must be *volunteers* and be rotated as frequently as necessary.

3. By beginning the program with undercover surveillance before arrests are made, you will learn that certain times, much more than others, are productive for working rest areas.
4. Men seeking sex will be found at the rest areas both day and night. Sometimes, there will be so many that it is over-powering for the officers. Suspects are easily spooked, but they come back. A rest area can be cleaned out, but thirty minutes later it will be full again. Some persons seeking male prostitutes will parade the sidewalks, while others will hang around picnic table areas or cruise the woods. Open sex acts may occur in both these locations. Other people will loiter or sit in the toilets for long periods of time, and open masturbation and oral sex acts can be observed. All males seeking sex at rest areas seem to park their cars at the rest areas for very long periods of time, some for hours. Very few will be willing to pay money for sex.

5. The most common forms of vandalism are spray painting mirrors; scratching phone numbers on the walls, mirrors, and toilet stalls; placing graffiti and phone numbers on walls with black grease markers; and cutting holes in the walls of stalls. An inexpensive solution to the latter problem is to have DOT place stainless steel panels over walls to prevent the holes from being cut.

6. Vandalism to the rest area grounds will include holes cut in chain link fencing, trees broken off, trails through brush which disturb vegetation, and littering the area with beer cans and bottles, used condoms, needles and syringes, used toilet tissue, and pornographic magazines.

7. Alcohol and narcotics use will consist of drinking in public, personal use of marijuana, and the use of harder drugs.

8. Problems with vagrants and homeless people will include people living in their cars in the rest areas and attempting to

beg money, food and drinks from rest area patrons. Some of these people are frightening in appearance and tend to scare away tourists. Because of First Amendment considerations, it is generally recommended that prosecutors or departmental legal advisors be involved in the planning stages of the operation to determine to what extent homeless people can be removed from the rest area.

9. Moving traffic violations are abundant and may occur so often that there will not be enough officers to contact all violators. These offenses include improper or unsafe backing (usually by a lone male driver looking for a better place to sit) and driving the wrong way (usually involving a lone male looking for a partner). When the rest area is so full of vehicles with lone male drivers, incoming drivers must turn and go the wrong way in order to find a place to park on the travel trailer side of the rest area. Because of the open container and drinking-in-public violations, officers should also look for DUIs. Parking violations are usually caused by over-full rest areas or by people looking for places to park where they won't be bothered by men seeking sex.

10. Because of the multitude of problems which appear, it is best to enforce *all* violations occurring at rest areas. In this way, the maximum deterrent effect is realized.

Organizing the Detail

In a busy rest area, it is advisable to have as many as six officers on an assignment, set up in teams, with each team assigned with a decoy and surveillance person. The surveillance person is responsible for keeping all of the members aware of the decoy's whereabouts and activities at all times. A marked unit, if available, would be assigned to the program to provide transportation to jail for those arrested. If an extra marked unit is not available, then nearby officers should be notified of the operation, and a marked unit called to assist in booking suspects. Because of the wide use of police radio scanners, officers must be extremely circumspect in radio transmissions affecting the operation.

With a six-person team, one officer is given the assignment of being a decoy and allowing men to approach him and discuss sex, while three additional officers, a detective, and a supervisor provide surveillance and look for other crimes.

The decoy, during his conversation with suspects, tells them that he charges for his services—that he only "plays for pay." When an offer of a specific sex act with an agreement for a fee is reached, the suspect is arrested for prostitution. The decoy may or may not allow the suspect to touch him, and, if he does so, only the arm, shoulder, or leg area should be touched. Officers playing the role of decoy should not allow themselves to be touched in the area of the groin or buttocks.

Decoys should tell suspects who try to touch them that they do not allow themselves to be touched prior to payment. If touched in the groin area, they should immediately tell the suspect to stop. If the suspect continues, he should be arrested for assault or a similar offense that prohibits unprivileged physical contact.

Unit members not playing the role of decoy should be told to arrest anyone who touches them in the groin area or anywhere they do not want to be touched, especially while using the toilet facilities or areas where it is known that sexual practices occur.

Supervisors should review each arrest and determine whether or not the officer has probable cause to book the suspect or issue a citation and release the individual on a written promise to appear.

Information on arrests should be logged into a computerized program, and as a suspect goes through the court system, the arresting officer should be notified of the case disposition, which is then added to the computer file.

Each officer assigned to surveil a decoy should be equipped with a portable radio that communicates with the other officers and the command post. Each decoy should have a pre-arranged signal to alert the surveillance officer and others when an arrest is to be made. The surveillance officer is responsible for keeping supervisors and others aware of the decoy's whereabouts at all times.

Media Coverage

Departments should not overlook the advantages to be gained by effective media coverage of efforts to clean up rest areas. At the same time, a department contemplating such a program must be aware it is absolutely essential to conduct it in such a manner that does not penalize persons for lifestyle choices but, rather, focuses on illegal sexual behavior that is harmful to the community.

Preventing Wrong-Way Accidents on Freeways

In some localities, many serious accidents result from wrong-way driving on freeways, and the prevention of these violations becomes an important public safety issue.

According to a report issued by the California Department of Transportation's Division of Traffic Operations, half of the wrong-way driving on freeways results from deliberate, illegal U-turns. Measures taken to improve ramp operation would not affect this half of the wrong-way problem.

For the other half, none of the physical barriers tested to date appear appropriate. Methods other than physical barriers have, however, proved helpful in decreasing incidents of wrong-way driving.

Effective Treatments

Effective treatments include repainting or adding wrong-way pavement arrows; reorienting, moving, or adding wrong-way sign packages; modifying the trail-blazing freeway entrance packages; placing edge lines in pavement markings; upgrading signs of high-intensity reflective sheeting; and modifying lighting.

Occasionally, more extensive measures can be used to solve the problem at unique locations, including airport-type pavement lights, modifying the design of ramp terminals, and adding ramps to incomplete interchanges.

Important to note is that three-quarters of the fatal wrong-way accidents are caused by drivers involved with alcohol or drugs. This fact presents a difficult challenge in terms of developing appropriate engineering solutions.

Additional wrong-way pavement arrows may be beneficial. The use of larger “Do not enter” signs may be considered if an off-ramp continues to have a problem.

Larger, highly reflective signs may be helpful for confused or elderly drivers. Using red pavement lights activated by wrong-way drivers may be considered at locations where traditional treatment is not effective. The condition of wrong-way signing packages at off-ramps and directional signs is important.

Always consider the option of using a second set of wrong-way and “Do not enter” signs and wrong-way arrows farther along an off-ramp. The option of using additional signs and markings on selected ramps may give drivers a second chance to realize that they are headed the wrong way before they enter the freeway.

Results of Studies

Because wrong-way accidents are tragic, they have been under intensive study by the California Department of Transportation for over 30 years. Wrong-way fatal crashes account for about three percent of the fatal crashes on California freeways, and about 5 percent of the fatalities.

Remedial Measures Taken

Wrong-way signs and 24-foot white wrong-way pavement arrows have been developed and installed on many of California's freeways. White-on-green freeway entrance signs at either side of on-ramp entrances have also been posted to aid motorists in finding the correct way onto the freeway. Further studies on wrong-way sign colors indicate that white-on-red is seen the earliest of any color; thus, the “Do not enter” and the “Wrong way” signs should both be red and white. In fact, these signs and pavement arrows were adopted as a national standard in 1967 in the Manual of Uniform Traffic Control Devices.

"Do not enter" signs should be located low enough for good visibility to the headlights of vehicles entering the wrong way.

Camera surveillance reveals that the most effective corrections for wrong-way movements include the installation of freeway entrance signs at on-ramps, and "Do not enter" and "Wrong way" signs at off-ramps; posting supplementary trail-blazing signs and extra lighting at on-ramps; reducing the off-ramp throat opening, and eliminating the free right turn from the off-ramp.

More than half the fatal and injury crashes occur at locations where sight distance is less than 1,200 feet on mainline freeway lines. A few types of ramps and interchanges, such as the cul-de-sac, buttonhook, trumpet, and two-leaf clover have a greater number of wrong-way accidents than other types. Also, left-hand off-ramps can appear to be on-ramps to the wrong-way driver and should be avoided during design and construction.

California has installed red-backed reflective pavement markers on the lane lines on freeways, and the Department of Motor Vehicles has educated the public to the concept that the driver who sees red reflectors is going the wrong way. Because these reflectors have proven to be of limited value with drunk drivers, they are now installed only in the vicinity of off-ramps as a secondary treatment.

Parking lot spike barriers have been tested to determine if they could be used at off-ramps to stop vehicles from entering the wrong way; however, they were found unsuitable. The spikes, even when modified in shape, would not cause tires to deflate quickly enough to prevent a vehicle from entering the freeway. Under high-volume traffic the spikes broke, leaving stubs that would damage the tires of right-way vehicles. It was believed that some right-way drivers, upon seeing the spiked barriers, would hit their brakes and create a hazardous situation.

California designed movable gates to bar traffic from high occupancy vehicle lanes. The gates are designed to stop even the heaviest vehicle; however, they take approximately 20 seconds to lower or raise—far too slow for a wrong-way vehicle entering a ramp. With the present state of the art, gates are not appropriate for retaining a wrong-way vehicle.

Georgia has tested a pump-up device that presents a physical curb-like barrier to the wrong-way driver, but it was found unsuitable for reasons similar to those of the spike barriers.

California tried adding horns and flashing red lights over the wrong-way signs, but these were found to be ineffective and drew complaints from neighbors.

One device that did show promise was red, airport-type pavement lights, embedded in the pavement across an off-ramp, activated by wrong-way vehicles. These were shown by camera monitoring to reduce further wrong-way entries. About half of the wrong-way drivers at these ramps braked before reaching the wrong-way sign. Nearly half continued past the signs but braked before the pavement lights. Some, however, continued past the pavement lights and went out of view of the camera.

A check of the driving records of typical wrong-way drivers indicate that they have received more traffic violations and felony convictions and have been involved in considerably more accidents of all types than the average motorist. The majority of wrong-way drivers were male. Another complicating characteristic is that many make intentional U-turns on freeways—they do not enter via an off-ramp. Nearly half of the wrong-way crashes are caused by U-turns, and half from wrong-way entries via off-ramps.

Field reviews must be conducted by transportation officials to make sure that signs and markings at these locations are in good repair, and that there are no conditions which could mislead drivers.

High-intensity reflective sheeting for signs can be adopted for wrong-way and freeway entrance sign replacements and upgrades. Using larger signs also provides more visibility, especially for elderly drivers. Thermal plastic pavement wrong-way arrows can be installed. They have high reflectivity and great durability.

Synthetic materials have been developed for anti-theft signs in urban areas with high instances of vandalism, motivated by the aluminum resale value. An anti-graffiti coating has also been developed. Innovations in reflective coatings continue to be made. The electronic system for pavement lights should be carefully selected for its reliability under varying moisture conditions.

Wrong-way accidents show distinct patterns by time of day, a trend that may have implications for directed patrol enforcement. These crashes peak at around 2 to 3 a.m., although this is more noticeable in the urban areas. The bars are required by law to close at about this time. The higher traffic volume during the day in urban areas probably depress the wrong-way crashes during these hours. Urban areas have a much greater number of wrong-way crashes than rural areas.

Enforcement Efforts

State police, highway patrol officers and local police can make a valuable contribution in combating wrong-way driving.

Most vehicle codes contain provisions such as sobriety, turning movements, and sign theft, which can be enforced to good advantage by the police.

Crash reports reveal that the typical wrong-way crash is caused by a driver who is either driving under the influence of alcohol or drugs, or had been drinking or consuming drugs. Various police programs can help remove these drivers from the road.

One important program is the Sobriety Checkpoint program. Its aim is to detect and remove drinking drivers from the road and to reduce alcohol-caused collisions. In any state in which state law and appellate court decisions allow the use of sobriety checkpoints, they should be seriously considered as a means of preventing wrong-way accidents on freeways.

Highway-Rail Grade Crossing Safety

Police should not overlook intervening variables in traffic safety that can be affected directly or indirectly by the private sector. For instance, railroads maintain private roadbeds that intersect more than 160,000 public highways in the United States. More than 5,000 collisions occur at these intersections each year, resulting in almost 600 fatalities and 1,800 injuries. A motor vehicle/train collision is many times more likely to produce fatalities than a roadway collision.

Highway-rail grade crossing traffic enforcement should be given every consideration in the aggressive pursuit of traffic safety. Collisions that occur at these intersections usually are a result of motorist inattention or impatience, which is especially apparent after observing motorist behavior at these crossings.

Law Enforcement Liaison with Private Sector Traffic Safety Programs

The Federal Railroad Administration (FRA), using data provided by United States railroads, maintain a detailed analysis that may prove beneficial to police when conducting safety studies within their communities. By using this data in conjunction with programs offered by the private sector, agencies can implement effective enforcement strategies. Such programs are supported by federal and state funds, such as the OOT (Officer on the Train) and GCCI (Grade Crossing Collision Investigation) programs for police.

OOT is a highway-railroad grade crossing safety awareness program coordinated through a national railroad safety program, Operation Lifesaver, which places police officers aboard trains to radio traffic violations to other officers strategically located at or near grade crossings. The selection of these sites are based on previous collisions and traffic violations.

The GCCI course is a highway-railroad grade crossing safety awareness program coordinated through the Operation Lifesaver program. Tailored to specific law enforcement agency needs, the course usually lasts one to three days and is provided at no cost to the agency.

Section 402 manpower funding may be available from the U.S. Department of Transportation National Highway Traffic Safety Administration (NHTSA) for these programs.

Operation Lifesaver is a nationwide, nonprofit public information and education program dedicated to reducing crashes, injuries, and fatalities at highway-rail grade crossings. You can obtain more information by contacting

Operation Lifesaver, Incorporated
1420 King Street, Suite 401
Alexandria, VA 22314
800-537-6224

PART THIRTEEN:

Pedestrian Safety

Pedestrian Safety

After vehicle occupants, pedestrians represent the second largest category of motor vehicle deaths. In a recent year, motor vehicle crashes claimed the lives of 5,797 pedestrians in the United States. Approximately l00,000 more were injured. Over a 12-year period, between 14 and 17 percent of all traffic deaths annually have involved pedestrians.

The loss of human life and suffering caused by these crashes is a serious national health problem. Each year, the economic cost of salary loss and medical expenses also amounts to billions of dollars.

The federal government has designated pedestrian safety as one of the national priority highway safety program areas. Pedestrian safety is a nationwide concern, and effective countermeasures exist to address the problem. In order to combat the problem, each law enforcement agency must take the initiative.

Reasons Behind Lax Enforcement

Although pedestrian safety has been identified at the federal level as a serious problem, it may not be perceived as such at the state and local level. Many communities are unaware of pedestrian safety issues or are forced to overlook them because of budget constraints.

Law enforcement activity on pedestrian safety has been limited because of several reasons. One of the biggest reasons is a significant lack of technical information available to the law enforcement community. Some departments give pedestrian law enforcement a low priority because of other demands, such as violent crime, drug intervention, increased calls for service, or lack of manpower. In these circumstances, concerned police agencies are faced with the challenge of creating a demand for

enforcement of pedestrian laws within their agencies or communities.

A police agency becomes more involved with pedestrian safety issues for a variety of reasons, one of the most common of which is a local tragedy. The publicity surrounding such an event often sends the community to the police for leadership in solving what may be a pedestrian safety problem. Another reason for police involvement is the identification of pedestrian issues through the analysis of accident reports. Whatever the reason, it then becomes time for someone within the agency to develop expertise in pedestrian safety issues.

Changing Attitudes and Behavior

As with other traffic safety programs, a pedestrian safety law enforcement program requires using the "3-E" (enforcement, education, and engineering) approach.

Changing pedestrian and motorist behaviors and attitudes about pedestrian safety is an ongoing process that requires an ongoing commitment. The commitment will not take a great deal of time nor drain resources, but it will demonstrate to the community that your police agency takes pedestrian safety seriously. Other community organizations may be encouraged to follow your lead, and together you can utilize community policing concepts to improve pedestrian safety.

The Pedestrian Crash Picture

Children, the most inexperienced users of the road system, have nearly 43 percent of the pedestrian accidents although they comprise only 30 percent of the population. Their resiliency to injury is probably the reason for the disproportionate percentage of fatalities experienced by this age group. Of the child pedestrian mishaps, 2.6 percent result in death.

Target Group	Percent of Population	Percent of Total Crashes	Percent of Fatalities
Children (0-19)	28.9%	42.5%	19.9%
Working Adults (20-64)	58.7%	48.7%	56.6%
Older Adults (65 +)	11.95	8.8%	22.3%

The fact that working adults have years of experience using the road system may explain why this group, comprising 60 percent of the population, has only 50 percent of the pedestrian crashes. The resiliency of youth fades in this group, however, and it experiences a fatality rate equal to its population numbers. Of the mishaps happening to working adults, 6.8 percent result in death.

Older adults have fewer mishaps than would be expected for the size of this age group due to, perhaps, their many years of experience and a lowered use of the road system. But a frailty factor likely operates here, and a large percentage of these mishaps—16.1 percent— result in fatalities.

When pedestrians are involved in motor vehicle crashes, the results are usually disastrous. Close to 6,000 pedestrians are killed each year in traffic crashes, often the result of alcohol use by the pedestrian, the motorist, or both, plus excessive speed by the motorist. These causes account for almost 15 percent of all annual fatalities.

Males account for about 70 percent of the pedestrian fatalities, making them over-represented. The male pedestrian fatality rate is 3.24 per l00,000 population—more than twice the rate for females.

Nearly the same number of pedestrians are killed on weekday days as on weekday nights; however, weekend nights see almost twice as many pedestrian fatalities as do weekend days.

Approximately 60 percent of pedestrian fatalities occur at night. Half of the victims under 16 years of age are killed in crashes that occur between 3:00 p.m. and 7:00 p.m.

Seventy percent of the pedestrian fatalities occur in urban areas, and 82 percent of fatally injured pedestrians are at non-intersection locations.

People 65 years and older have the highest pedestrian fatality rates and are more likely to sustain serious injury or death if struck by a motor vehicle. They account for 18 percent of all pedestrian fatalities.

Twenty-eight percent of annual pedestrian fatalities involve children under the age of five. Pedestrian mishaps are the single largest cause of death of children ages 5-9 years. More than 25 percent of the traffic fatalities under age 16 are pedestrians.

Alcohol involvement, either for the driver or pedestrian, is reported in more than half of the motor vehicle crashes that result in pedestrian fatalities. Nearly one-third of the pedestrians involved are intoxicated, with BAC levels of 0.10 or greater. While the percentage of alcohol-related traffic accidents involving drivers and passengers in motor vehicles has been steadily declining, the percentage of alcohol-involved pedestrian accidents has remained relatively constant.

Pedestrian Safety Programs

Commitment by the law enforcement agency's chief executive is essential to the success of a pedestrian law enforcement program. Involving the community in the planning and implementation of such a program is equally important.

The goals of a pedestrian safety law enforcement program are to have citizens be aware of and comply with the pedestrian laws and to have police officers enforce these laws.

It is only logical to have both the police and the community working together on a program aimed at citizen behavior. Probably no single organization has a great deal of time to devote to pedestrian safety; however, by pooling resources you can have a significant impact.

The method agencies use to train officers placed on traffic assignments enhances the effectiveness of a pedestrian program. Recruit schools and traffic commanders need to explain and emphasize the reasons why pedestrian law enforcement is important. They need to sell their officers on enforcement by using educational efforts.

Suggested training tools for educating police officers about pedestrian law enforcement include using the same safety messages communicated to the general public by television, radio, or brochures; placing articles about pedestrian safety and enforcement concepts in police memos and bulletins; and developing enforcement videotapes to be shown at roll call.

When issuing a citation to a pedestrian or motorist for a pedestrian violation, officers should be encouraged to run a check on the violator's license. The officer may find that the violator is a wanted criminal or is driving on a suspended license. Officers will then see that they are not only reducing the pedestrian problem but also responding to other crimes.

For traffic officers to enforce pedestrian laws and be dedicated to the program, police supervisors must communicate their support and provide positive reinforcement, and top management must trust its commitment.

Obstacles to Enforcement

Throughout the country, police agencies run into obstacles when trying to enforce pedestrian laws. These obstacles include a lack of interest or understanding, the severity of other law enforcement programs, insufficient training or funding, weak laws governing impaired pedestrians, and inadequate support from the judicial system, where many judges do not support efforts to ticket pedestrian safety violators.

By decriminalizing public intoxication, lawmakers intended that public drunks would be treated rather than punished. However, when that law changed and the resources directed toward public health facilities for alcohol treatment never materialized, police officers were left with no permissible law enforcement response and no places to take public drunks. In some jurisdictions, the increased emphasis on anti-DWI programs has led to more intoxicated persons on foot and an increase in the number of alcohol-involved pedestrian crashes.

We can often remove some of the obstacles to pedestrian safety enforcement by learning from the successes of other jurisdictions. Invite police officers or commanders from other agencies to explain how pedestrian laws are enforced, and how tickets are issued in their jurisdictions. Inform judges and prosecutors about your program and the statistics concerning pedestrian crashes. Involve members of the judicial system in planning your pedestrian law enforcement program.

Planning to enforce pedestrian laws where they have not been enforced before will only lead to resistance unless the public is educated beforehand. The pedestrian safety program is effective only when it successfully integrates enforcement, education, and engineering. Once a community has been educated about pedestrian safety and understands the importance of following the laws, it is more likely to support a law enforcement program. Educational programs can mobilize community support for pedestrian law enforcement, which is crucial to its success. Ten years ago, people did not expect to be arrested for DWI and if arrested, expected minimal punishment. Today, DWI is considered a serious offense and carries serious penalties and a social stigma. The difference often is attributed to organized public support and demand for enforcement from groups like Mothers Against Drunk Driving (MADD).

Educating the public will change attitudes, improve skills, and increase knowledge about pedestrian safety issues.

Pedestrian Education Issues

Some pedestrians dart out into the street without stopping or looking for traffic, and others cross at intersections without checking for turning traffic.

Pedestrians sometimes do not understand what flashing “Don't walk” signals mean. They mean, “Continue your trip but do not start if you have not yet begun.” Pedestrians often begin crossing the street as the “Don't walk” signal is flashing, instead of waiting for the next signal cycle. Some pedestrians also disregard crossing signals altogether and cross the street when they *think* it is clear.

Pedestrians frequently do not realize the importance of being able to see motorists as well as being seen by them. Some walk along the roadway in the direction of traffic and cannot see traffic coming up behind them. Others walk in the street or along the roadway at night without any reflective clothing.

Pedestrians are unaware of the dangers involved by stepping out of a vehicle once it has been disabled. When pedestrians step out

of a car, they often walk too closely to the road. When they cross they may misjudge the speed of oncoming vehicles, especially on high-speed roadways.

Children do not perceive moving vehicles in the same way adults do. They frequently lack the ability to judge the speed of oncoming vehicles. Pedestrians crossing high-speed roadways or rural roads are often unable to judge the speed of oncoming vehicles. Some pedestrians walk through parking lots or pass driveways without looking for moving vehicles.

Crashes usually involve a behavioral error on the part of the pedestrian, the motorist, or both. Motorists' behavioral errors can be seen in exceeding the speed limit; failing to slow down when driving through residential areas in which children are playing; and failing to reduce their speeds on city streets, in shopping areas, or in the vicinity of crosswalks where pedestrians are abundant. Many motorists turn without looking for pedestrians crossing their paths, particularly in right-turn-on-red situations. They ignore the law requiring them to yield or stop for pedestrians in crosswalks.

Motorists may back up without checking for pedestrians behind the vehicle, a particular hazard for delivery trucks calling on households. Also, motorists may pass stopped vehicles, such as school buses, and thus endanger pedestrians.

Properly planned and sustained enforcement programs and public education make people adopt intelligent practices for both walking and driving. You can assist by developing a public information campaign, with a media packet—containing information about pedestrian laws, high-risk behaviors, accident statistics, and particularly dangerous intersections or areas of your community—to be distributed to newspapers, radio, television, and community bulletins.

Publicity Efforts—A Necessity

Holding a media conference when pedestrian issues are more likely to gain attention, such as when schools open or close, can be a particularly effective time to kick off a pedestrian safety program.

Newspaper articles can be used to ask the public to identify the most hazardous areas in the community for pedestrians. Active or retired officers can provide public information at scheduled programs in local schools and clubs.

Dispatching a brochure about pedestrian safety with all traffic citations and written warnings is another effective method of educating the public. You may also wish to consider including a survey about pedestrian safety as a means of obtaining information about how much individuals know about this topic.

You can ask public transit agencies to include pedestrian safety advertisements on the exteriors and interiors of their buses. Motor vehicle authorities should be encouraged to include a section on pedestrian laws, rights, and obligations on driver's tests, in driver education programs, and in violator schools.

In your educational efforts, personalize the issue by showing how a loved one could be a pedestrian at risk. Victims' stories told from a point of view as survivors are effective in such campaigns. Because most drivers also walk, appeal to them from both perspectives. How do they behave toward pedestrians when they are driving, and how do they expect a driver to behave toward them when they are walking?

Utilities, banks, and other institutions and organizations can be encouraged to include pedestrian safety information in monthly billings and mailings. The state Motor Vehicle Division can be asked to include such information with automobile registration and driver license renewal notices. Senior citizen groups and youth groups such as the Boys Scouts can be used to assist with mailing tasks.

Encouraging and supporting a pedestrian advocacy operation is also useful. When preparing educational material, stress safety and not punishment. Inform citizens about situations that can be dangerous for pedestrians, rather than telling them about the jaywalking tickets they can receive.

A good idea is to integrate pedestrian safety with corporate health and traffic safety programs, such as occupant protection, impaired driving, smoking cessation, and weight control. Your message can reach many more people than it would if you were doing it alone, and your limited funding and resources are thus maximized for a greater impact.

Your pedestrian safety program will be much more effective if you gain the support of government officials, community leaders, and organizations by forming a pedestrian safety committee of individuals who have an interest in traffic safety issues. Potential members can include representatives from government, the Safety Council, the school system, media, automobile clubs, youth, civic, and senior citizen organizations; traffic engineers; and hospital or trauma center personnel. Networking with community groups is an excellent method for obtaining citizen input as you develop and implement pedestrian safety programs.

Cooperation with Engineers

Traffic engineering countermeasures can improve pedestrian safety by modifying the physical environment. Solutions can range from painting crosswalks to constructing pedestrian overpasses.

Engineering and enforcement interventions to improve safety can include modification of stoplight signals to increase pedestrian

crossing time, new roadway markings to emphasize crosswalks, pedestrian signals on median islands, oversized speed limit signs, and increased police enforcement of the speed limit.

City planning departments should be made aware of pedestrian issues and consider them when approving site plans. Typical urban problems, such as traffic volume, limited resources, and crime, pose problems for pedestrians that may not be addressed as a community grows.

Engineering factors regarding pedestrian safety should be integrated into the community plans, including overhead cross-walks, sidewalks, marked crosswalks, street lighting, shortened city blocks, and curb ramps for the disabled.

Strategies for High-Risk Populations

Specific pedestrian populations have been identified as being high-risk. They are either over represented in pedestrian crashes, or they put themselves in vulnerable positions as pedestrians. These high-risk individuals include older adults, alcohol-impaired pedestrians, and children.

Increase enforcement in areas where there are high concentrations of older adults. When pedestrians see officers ticketing violators, they will be more law-abiding themselves.

Crossing guards can be assigned to high-concentration areas during peak times or at designated times publicized to older adults. Placing crossing guards in concentrated areas greatly reduces the opportunities for motorists to violate pedestrian laws. Sometimes, volunteer crossing guards can be obtained through organizations such as the AARP (American Association of Retired Persons) or retired police officers' groups.

Determine where older pedestrians walk to shop, eat, or exercise, particularly in areas with high concentrations of older adults, such as retirement communities. The Department of Social Services or senior citizen centers can help police departments identify such locations, as well as the times when older adults are most likely to

be in high-traffic areas. Suggestions can be made to older adults about the safest times to be pedestrians.

Many older pedestrians are killed while crossing legally in crosswalks. A high rate of older pedestrian are involved in right-turn-on-red and left turn crashes. Radio and television public service announcements, which reach a wide audience, can stress messages aimed at older adults to make them more aware of their limitations and adjust their driving and walking behaviors accordingly.

Video or slide presentations can be made to older adult organizations, including church groups and social clubs, who are frequently eager to have programs of interest presented to their members.

Mature motorists programs are available from the AARP and the American Automobile Association. These training programs cover the issue of dealing with back or neck problems that may interfere with an older driver's ability to check for pedestrians before backing out of a driveway or parking space and other issues, such as slowed response time, sensory deficiencies, mental deficiencies, and other behavioral defects.

Inform traffic planners of the engineering needs for older adults. Offer suggestions for countermeasures that will aid older adults:

- bigger signs;
- timed push-button crossing lights to allow a longer pedestrian crossing time;
- refuge islands to provide a safe haven for those unable to cross the street during one pedestrian crossing signal cycle;
- high-visibility crosswalks with overhead lighting, flashing lights, or reflectors to allow motorists and pedestrians to see them better;
- delayed green lights on all-ways stop for motorists so that pedestrians can cross in any direction or get a head start on crossing before vehicles make their turn; and
- the construction of fences and barricades to direct pedestrian flow to intersections and discourage mid-block crossings.

Alcohol-Impaired Pedestrians

Law enforcement options for handling intoxicated pedestrians are limited now that public intoxication has been decriminalized. Education is the best way to encourage pedestrians to look for alternate forms of transportation when drinking. Your agency can also participate in legislative action to criminalize walking while intoxicated.

The message to be communicated to the public is that intoxicated pedestrians present a hazard to law-abiding motorists as well as to themselves. You can develop a public service campaign addressing the relationship between alcohol and pedestrian crashes, and expand public education about DWI to include the risks of walking while intoxicated. Enlist the participation of anti-DWI groups in a campaign to highlight the dangers to pedestrians caused by drunk drivers, and of drunk pedestrians to themselves.

Campaigns can be developed to alert restaurant and bar industries to the problems related to drinking and walking, especially if you involve the Alcohol Beverage Control Board in your jurisdiction.

Child Pedestrians

Educational countermeasures are most effective with this age group. Enforcement agencies can play a significant role from an educational perspective by developing safety materials for parents; delivering training materials to pre-school programs and day-care centers to train child providers to teach children about traffic safety skills; developing programs for school crossing guards to instruct children to identify and report maintenance problems such as broken pedestrian lights or signs that need replacing; and developing school-based educational programs on pedestrian traffic safety.

One simple initiative is the installation of a mechanical arm that swings out ten feet in front of a school bus so that children must walk around it to cross the street and will be more visible to the bus driver.

Other High-Risk Populations

Other populations at risk are pedestrians on high-speed roadways and tourists. Convincing the highway engineering departments to construct overpasses and barricades, so that pedestrians are prevented from crossing high-speed roadways, can help reduce collisions in these locations. Distributing information about the dangers of crossing high-speed roadways can also be effective when they address vehicle distance and speed as well as alcohol impairment problems.

Motorists need to be aware of the risks they take when they get out of disabled cars on high-speed roadways. Pedestrians have been killed while standing in the road wondering what to do, while working on their cars, or while attempting to flag down assistance. It is extremely important to distribute information on the dangers and safety precautions motorists should take when their vehicles becomes disabled. Transportation departments should be encouraged to install telephones along expressways so that pedestrians can call for vehicle assistance, and to post signs instructing motorists what to do if their cars break down.

Police can work with hotel and motel associations to develop public information and education materials for tourists, including information on the dangers of walking after drinking. Hotels and motels can be encouraged to distribute pedestrian safety materials to guests as they arrive and to develop maps with safe pedestrian routes. Pedestrian educational materials can be placed at rest stops along interstates and can be included on, or attached to, state tourist maps.

Construction Zone Safety

An enforcement program is the best approach to deal with the safety of construction workers on high-speed roadways.

The Michigan State Police developed a program called Construction Zone Accident Reduction (CZAR). It involved a pre-enforcement study period, an enforcement period, and a post-

enforcement study. Prior to any enforcement efforts, the study indicated that cars averaged 56 mph in a posted 45 mph construction zone. Undertaking vigorous enforcement efforts, state police issued speeding tickets during the times when construction workers were present. A post-enforcement study indicated motorists had reduced their speed by an average of 8 mph.

In the state of Pennsylvania, a double fine is imposed for speeding in construction zones. Signs describing the fine for each incremental speed violation and the amount if doubled are posted to inform motorists of their financial liability.

Federal Funds

Federal funds available to highway and traffic safety initiatives in states and local areas are known as Section 402 funds. These formula grant program funds are intended to aid the states in conducting approved highway safety programs, under the direction of the governor's highway safety representative. City and county government agencies are eligible for 402 grants to fund activities in priority program areas such as occupant protection, police traffic services, alcohol and other drug countermeasures, emergency medical service, traffic records, motorcycle safety, and pedestrian/bicycle safety. For information on these programs, contact your state governor's representative for highway safety.

Federal funds are also available to conduct research, develop new technology, and demonstrate new strategies and technology in the field of highway traffic safety. Referred to as Section 403 funds, they are awarded through grants, contracts, and cooperative agreements with state governments, universities, and consultants.

Several other sources of federal funding are available for highway safety strategies. These are incentive grants, awarded to states meeting certain legislative and program requirements.

Section 153 funds are awarded to states that have safety belt and motorcycle helmet use laws and that reach certain usage levels specified by law. Section 408 and 410 funds are awarded to states that have passed legislation such as administrative license

revocation, mandatory jail for repeat alcohol offenders, and lower legal BAC content levels, and that have programs that control access to alcohol by use, conduct sobriety checkpoints, and have self-sustaining alcohol programs. For more information on any of these programs, contact your governor's representative for highway safety.

Available pedestrian safety materials include the *AAA Traffic Safety Services Catalog*, published by the American Automobile Association, Traffic Safety Department, 1000 AAA Drive, Heathrow, Florida, 32746; and the *Pedestrian Accident Reduction Guide*, distributed by the National Highway Traffic Safety Administration, NTS-23, 400 7th Street, S.W., Washington, D.C., 20590. The *Walk Alert Program Guide* is published by the National Safety Council, 444 North Michigan Avenue, Chicago, Illinois, 60611-3911. The National Safety Council also produces a "Watchful Willy Preschool Pedestrian Program" aimed at preschool children to modify behavior and increase safety awareness. The AAA also produces a booklet entitled, *Older Adult Pedestrian Safety*, that gives local communities guidelines for the development of programs that meet older adult pedestrian safety problems. The National Safety Council has a similar brochure entitled *Walk Alert: Pedestrian Safety for Older Adults*.

The National Association for the Education of Young Children, 1834 Connecticut Avenue, N.W., Washington, D.C., 20009 has a program, entitled "Walking in Traffic Safely (WITS)." This traffic education curriculum package for young children, aged preschool to six years old, is designed to teach them about streets and cars. Any of these programs are yours for the asking.

PART FOURTEEN:

Public Information and Education Programs

Public Information and Education Programs

From the smallest police departments where the chief must handle formal public relations efforts to larger municipal police and sheriffs' departments, state police and highway patrols that have formal public relations units within their organizations— police everywhere need to tell their story. And nowhere is this need more relevant or important than in the field of traffic and highway safety.

In too many instances, the department's spokesperson may have little, if any, training or experience, either in communicating with the media or in organizing and managing an effective public relations campaign. Often the person in charge of public relations may be at a loss to know what is expected of him, or where to obtain assistance.

For many years, the National Highway Traffic Safety Administration (NHTSA) has urged law enforcement agencies to establish comprehensive traffic safety programs. One way to accomplish this with a public information and education (PI&E) program that creates a “perception of risk” among the public, so they will support proactive traffic enforcement. Public information programs are needed not only to educate but also to keep the topic of traffic safety before the media and, thus, the public.

Public Information

The public perception of the police is directly affected by the image you portray. You can gain public understanding, support, and confidence with a positive impression created through effective, ongoing contacts with the people you serve. A positive climate for these relations between your officers and the public can be fostered by successful media relations.

In larger departments, a person or a unit may be responsible for implementing a public information program. However, even in a

department where such a unit is not possible, a good public information program can be created. What is needed is a strong commitment by the head of the agency to lead by example.

The task of public information consists of two important areas—external and internal information.

External public information informs the public of departmental activities, develops good relations with the local media, performs traffic safety education and community services, develops an effective liaison with the legislative and judicial branches of government, and enhances overall department image.

Internal public information disseminates information on internal activities and employee achievements to department employees.

Media Relations

Media relations is the most important tool at your disposal in your quest for a good public affairs program. The majority of the public has no direct contact with you. Their perceptions are greatly influenced by what they see, hear, and read on television, radio, and in the newspapers. Positive publicity generates positive opinion, and negative publicity can destroy what took years to accomplish.

Too often, we fear close contact with the media, either because of an incident in which we received unfair treatment, or as a result of a "horror story" from a fellow officer. Sometimes, we react to such painful experiences by withdrawing into a shell and refusing to cooperate or even talk with the press. When we do this, we risk digging a hole for ourselves so deep that it will take an unbelievable amount of work and determination to regain public trust. Our programs suffer as a result of being unable to inform the public adequately of what we are doing.

Upon closer examination, we may find that the negative repercussions could have been avoided if we handled the media differently. Proactive media efforts can often identify a potential problem and manage its probable outcome. Make media relations

a high priority in your department because, without them, effective public relations programs are impossible.

Community Programs

Community programs are formal services that serve a demonstrated need within a particular community or area. They are sponsored totally or partly by the law enforcement agency and aimed at mitigating a particular problem, or advising a segment of the population about a specific program. These activities can include both crime prevention programs and traffic safety projects. Examples are neighborhood watch, operation identification, DARE, rape and assault prevention, child molestation prevention, bicycle safety programs, Halloween safety, departmental appearances, tours, speaking presentations, and ride-along programs.

Public Perception of Risk

The goal of traffic safety programs is to convince the public that violating traffic laws leads to crashes, serious injury, or death. Too many people take the use of vehicles for granted and think, “It can't happen to me!” Effective PI&E programs address this perception of risk, to help the public understand that the risk of dying or being seriously injured in a traffic crash is real. They must be shown statistics that will convince them of this. A comparison of traffic statistics to crime statistics will show that, although people are more fearful of being the victim of a crime than being involved in a crash, traffic crashes are violent events that are more likely to happen, even in a high-crime area.

This same theory can be applied to enforcement strategies. Regardless of how many violators your officers stop, the only people that will be aware of this activity are those who are stopped or ticketed. To give the general population the idea that, “I might get caught, too,” and thus secure additional voluntary compliance with the traffic laws, you must introduce timely public information with your enforcement efforts. For the same reason, highly visible

enforcement programs such as sobriety checkpoints, wolfpack patrols, speed saturation, and occupant restraint and equipment checkpoints, have a great deterrent effect as the public observes a number of police units in the area.

Working With the Media

Public information officers must recognize and understand the needs and requirements of the media and help the media understand the methods, policies, and constraints governing law enforcement. Then the best possible image of the department can be conveyed to the public, and the media can perform its primary mission to educate and inform.

Newsworthy events occur almost hourly, many directly or indirectly involving law enforcement. We may secretly believe the media has no business investigating these police matters and should stay clear until they are told differently by us; yet the media believes its responsibility is to inform the public about every detail of a story it considers newsworthy. If an event provokes media interest, the fact is that the story will go out, with or without our help. Law enforcement needs the media as an ally, but the media does not need us to do a story—their existence doesn't depend on us.

The print media (newspapers and magazines) are more interested in the smaller details of a story than television and radio reporters, who must tell the story in a few seconds. However, newspapers, too, revolve around deadlines. Being familiar with the deadlines of the various newspapers will help you time releases to accommodate schedules, ease the workload of reporters, and help your relationship with them. Despite the reporter's insistence, you may be able to take time to prepare your response to certain news events.

Radio media operate 24 hours a day, just as we do, and constantly require information from us. With stories introduced and updated around the clock, deadlines seldom exist. Broadcasts, which are short and concise, do not require a lot of detail. The desired format is a quick, factual release of the main parts of the story. Be

prepared to condense a release of information into a nine- to fifteen-second time period to accommodate radio's format. Half the battle of getting your story aired is minimizing editing by the station to fit it into their time frame. A snappy, factual, and appropriately timed release that requires little or no editing helps guarantee that your release will be broadcast as is, with the facts you want included. It also eases the workload of the station staff and helps your relationship with them. Radio has the largest audience during the morning and evening commuter rush hours, and requests for updates and comments will increase during those times.

Radio stations frequently request a taped phone interview for broadcast. Before you comment, ask if you are being taped. Avoid personal opinions—remember, you are representing the department. Feel free to ask a reporter, before the taping starts, what questions they will be asking. If you make a mistake, realize it and correct it, either by making the correction or retaping the interview.

The radio format is especially valuable for getting out traffic and emergency information, such as detours, evacuations, and temporary parking restrictions. Officers can also serve as guests on talk shows and provide information about departmental activities.

The television media can be summed up by the old adage, “A picture is worth a thousand words.” TV, like radio, must fit the story into a short, concise package suitable for viewing. However, unlike radio, TV has fixed deadlines, because time is required for editing and preparing raw video footage of an incident or interviews to meet scheduled air times.

If you are being interviewed on camera, discuss the interview outline with the reporter until you feel comfortable about it. If you know in advance, do some research on the topic. It is possible to stop the cameras if you make a mistake and tape that portion of the interview over.

As TV news crews have become more mobile, live television interviews at the scene of an event are commonplace. Your officers in the field must be trained to respond to these live requests.

Television, because it combines news with the impact of visual images, can enhance your PI&E efforts. Use TV whenever it can help your efforts.

National News Media

Radio and TV network reporters and national wire services will descend on you whenever you have news of more than local interest—a riot, a public demonstration, or even a severe storm. You must be prepared for this to happen.

Good coordination is the key to dealing with the national media. Designate one spokesperson or public information officer to do all the interviews if possible. This avoids releasing conflicting information or making it look as though you are hiding something. In disaster situations, designate a media staging area where they can work and you can interface with them. Don't overlook your local media simply because the national people are on the scene. When the national attention goes away, you must face the local media 365 days a year.

Public Service Announcements

Radio and TV stations broadcast public service announcements (PSAs). In addition, many newspapers will print free public service ads as a community service.

If you wish to use PSAs, remember that they are a form of advertising. Develop them as an advertising agency would develop an advertisement or commercial. They should have a theme, present a concise and easily understood message, and be factual and entertaining. Sometimes, the use of a celebrity or radio or TV professional as the voice over, or "talking head," will help to get your message across. If you produce your own PSAs, be sure they are of broadcast or print quality, or you can be assured that they will not be used. Frequently, a local advertising agency will assist

you, free of charge, as their own contribution to the public well-being.

Managing The Media

Learn, either by attending journalism or police-media courses or from a friendly media representative, how to write a good news release—one which contains the "who, what, why, when, where, and how" in the first paragraph and adds details of diminishing importance in subsequent paragraphs, so it can be easily edited to fit the space available.

Get to know the names, addresses, phone and pager numbers of the movers and shakers in your local media. Be accessible to them. If you send news releases out, do not address them generically to the news desk, but send them to someone you know. Top department officials should also develop friendly relationships with managing editors, publishers, and those who set editorial policy. Have a formal policy on handling the media, and consider

issuing press cards to bona fide media representatives, to allow them the closest possible access to a scene without disrupting operations or destroying evidence. Regular meetings every few months between the department management and media representatives provide both parties an opportunity to break bread together and iron out any differences.

How to Obtain Further Information

NHTSA has a booklet entitled, *Law Enforcement Public Information*, as well as examples of video and audio-taped PSAs, that is free for the asking. You can obtain copies by contacting

Police Traffic Services Division (NTS-41)
National Highway Traffic Safety Administration
400 7th St., S.W.
Washington, D.C. 20590

PART FIFTEEN:

Uniformity, Reciprocity, and Federal Programs

Uniformity and Reciprocity of Federal Programs

Currently, more than 170 million licensed drivers are driving about 188 million vehicles over two trillion miles a year on our streets and highways. Our efforts in highway safety have reduced the death rate to less than two deaths per hundred million vehicle miles traveled. In the 1930s, the mileage death rate was approximately 15.

The terrible loss of life on our streets and highways called for action, and a group of visionaries in the 1920s and 1930s saw the need for highway safety programs. Among these was the need for uniformity of traffic laws, and reciprocal agreements between and among the states to improve the safety, mobility, and efficiency of our roadway system.

The History of Reciprocity

The conceptual framework of reciprocity and uniformity was formalized in 1924, when Secretary of Commerce and later U.S. President Herbert Hoover convened a group of people to develop a national, rather than federal, set of proposed laws. The purpose was to achieve uniformity from state to state and to enhance both intrastate and interstate motor vehicle travel. Reasonable uniformity of state motor vehicle laws would then establish a framework for interstate reciprocity and the free flow of goods and people.

The Uniform Vehicle Code

Today, there is the National Committee on Uniform Traffic Laws and Ordinances (NCUTLO) which has maintained the Uniform Vehicle Code (UVC) since 1926, when the first edition was published. The first edition was what we now know as the part of the UVC called the “Rules of the Road.”

Over the years, other chapters were added to the UVC. Everything was combined in a single edition of the UVC shortly after World War II.

The NCUTLO is still active today in producing what is generally accepted as a national guideline for uniform state traffic laws and local ordinances. The code has been revised approximately every four years since 1926.

Interstate Compacts and Institutions

Over the past six or seven decades many individuals, organizations, and institutions have dedicated intellect, time, and funding to providing a safer, more efficient highway transportation system.

Presidents Truman, Eisenhower, Kennedy, and Johnson established national committees which became known as the President's Committees for Traffic Highway Safety. Advisory groups were formed to establish action programs ranging from accident records, laws and ordinances, driver licensing, police traffic services, engineering, and public support and information, to research and development. These programs, and the many dedicated people who worked on them, soon recognized the need for coordination, balance, and comprehensive concepts, which in later years became known as the "systems approach."

The U.S. Constitution provides that, before the various states can enter into a compact, they must have the consent of the Congress. Representative Beamer saw the need for consent ahead of time to encourage state compacts in the traffic safety field. In 1958, the so-called "Beamer Resolution" passed Congress, and gave permission for states to pursue such compacts. This legislation resulted in the National Driver License Compact, the Non-Resident Violator Compact, and the Motor Vehicle Safety Equipment Compact.

A number of institutions were established such as the Automotive Safety Foundation, the Traffic Institute at Northwestern University, the American Association of Motor Vehicle Administrators, the Traffic Division of the International Association of Chiefs of Police (later to become the Highway Safety Advisory Committee to the

IACP), the Institute for Traffic Engineering, the National Safety Council, the American Association of State Highway Transportation Officials (formerly known as AASHO, now AASHTO), the Bureau of Public Roads of the Department of Commerce (now the Federal Highway Administration of the U.S. Department of Transportation), the Traffic Court Program of the American Bar Association, the Safety Education Commission of the National Education Association, and the American Automobile Association Motor Clubs.

The Federal Aid Highway Act

In 1956, the Federal Aid Highway Act was passed by Congress and signed by President Eisenhower. This created the system of interstate and national defense highways, and the Federal Highway Trust Fund. It also called for a study of the federal role in highway safety. A document entitled "The Federal Role in Highway Safety" was published several years later and became one of the studies that influenced the landmark legislation in 1966 (Senate Resolution 3005, to provide for a national safety program for the establishment of safety standards for motor vehicles and interstate commerce, and Senate Resolution 3052) to provide for a coordinated national highway safety program known as the Highway Safety Act of 1966. This act called for the establishment of national standards. Eventually there were 18 program standards which, in the view of some, have been diluted in recent years.

The National Highway Safety Bureau (later changed to the National Highway Traffic Safety Administration) and the Federal Highway Administration were established. Note the distinction of one being “national” and the other “federal.”

The 1966 legislation was an expansion of the concepts of the 1956 Federal Aid Highway Act. The Highway Safety Act called for statewide planning, focus of responsibilities through the governor of each state, local planning and participation, and funding mechanisms.

Relationship to Highway Safety Program Standards

Highway Safety Program Standard No. 6 calls for the elimination of all major variations in traffic codes, laws and ordinances among the political subdivisions of a state, in order to increase the compatibility of these ordinances with a unified overall state policy on traffic safety codes and laws, and to further the adoption of appropriate aspects of the Rules of the Road section of the UVC among the states.

The standards section calls for each state to develop and implement a program to achieve uniformity in traffic codes and laws throughout the state. The program was to provide a plan to achieve uniform rules of the road in all of its jurisdictions, and a plan to make the state's unified rules of the road consistent with similar unified plans of other states. Additionally, it calls for continuing comparisons of all state and local laws, statutes, and ordinances with comparable versions of the Rules of the Road section of the UVC.

For many years, several states did, in fact, make comparative studies with the UVC, but very few, if any, go through this process today. For over 60 years, the National Committee on Uniform Traffic Laws and Ordinances has encouraged states to use the UVC to achieve and maintain reasonable and realistic uniform traffic laws and ordinances. For without such uniformity, how can

reciprocity between and among the states be recognized and practiced?

The Future of Reciprocity and Uniformity

Advances in technology as applied to the highway environment and to the motor vehicle include, but are not limited to safety restraints, anti-lock brakes, passenger containment protection, and steel belted tires. As we review these advances, together with program advances addressing uniform laws, alcohol/drug abuse, driver licensing, police traffic supervision, and some behavioral changes, we better understand our achievements in the area of highway safety.

We must not, however, forget that the foundation of all these advances are the federal, state, and local laws, which enable and authorize the creation, enactment and implementation of all of these factors in a comprehensive, uniform, systematic way. As a result, the states can and do enact reciprocal agreements between and among themselves so that each citizen/motorist can drive intrastate and interstate with the confidence of being in compliance with the law.

Federal Agencies and Grants

The following is a summary of the various federal agencies that are active in highway safety and traffic enforcement, along with their roles and responsibilities.

The U.S. Department of Transportation National Highway Traffic Safety Administration (NHTSA)

The National Highway Traffic Safety Administration (NHTSA) was established by the Highway Safety Act of 1970, as the successor to the National Highway Safety Bureau, to carry out safety programs under the National Traffic and Motor Vehicle Safety Act of 1966 and the Highway Safety Act of 1966. It also administers consumer programs established by the Motor Vehicle Information and Cost Savings Act, enacted in 1972.

NHTSA is responsible for reducing deaths, injuries, and economic losses resulting from motor vehicle crashes. This is accomplished by setting and enforcing safety performance standards for motor vehicles and items of motor vehicle equipment, and by funding grants to state and local governments for conducting effective local highway safety programs.

NHTSA also investigates safety defects in motor vehicles, sets and enforces fuel economy standards, helps states and local communities reduce the threat of drunk drivers, promotes the use of safety belts, child safety seats and air bags, investigates odometer fraud, establishes and enforces vehicle anti-theft regulations, and provides consumer information on motor vehicle safety topics.

402 Funds

The State and Community Highway Safety Grant Program was enacted by the Highway Safety Act of 1966 as Section 402 of Title 23, United States Code. Grant funds are provided to the states, the Indian nations, and U.S. territories each year according to a statutory formula based on population and road mileage. The grants support state planning to identify and quantify highway safety problems, provide start-up or "seed" money for new programs, and give new direction to existing safety programs.

These funds are intended to catalyze innovative programs at the state and local level and leverage commitments of state, local, and private resources. The Section 402 grant process has been successful in directing resources to national and state priority safety programs.

403 Funds

The Research and Demonstration Grants Program was enacted by the Highway Safety Act of 1966. Grant funds are provided to conduct research and demonstration projects on developing the most efficient and effective means of bringing about safety improvements.

Incentive Funds

Section 408: The Alcohol Traffic Safety Program Act (Public Law 97-364), enacted in 1982, created Section 408 of the Highway Safety Act. It authorized $125 million in incentive grant funds to encourage state and local agencies to deal more aggressively with the impaired driving problem. These grants assist and provide recognition to states that establish laws and programs to deter drunk and drugged driving, such as certain and swift arrest, license suspension, and rehabilitation of drunk driving offenders.

Section 408 is administered by NHTSA. Grants are awarded to the states through their designated Highway Safety Offices.

Section 410: This is a section in Title 23 of the United States Code that establishes a federal alcohol incentive grant program designed

to encourage states to enact strong, effective anti-drunk driving legislation and improve the enforcement of these laws. Section 410 also promotes the development and implementation of innovative programs to combat impaired driving. The program is administered by the NHTSA. Grants are awarded to the states through their designated Highway Safety Offices.

Section 153: Section 153 is a federal incentive grant program enacted by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) as Section 153 of Title 23, United States Code. It promotes the passage of state safety belt and motorcycle helmet use laws and compliance with those laws. Section 153 grants are administered by NHTSA. The grants are awarded to the states through their designated Highway Safety Offices.

The Federal Highway Administration

The Federal Highway Administration (FHWA) was established as a component of the Department of Transportation in 1967 as a result of the Department of Transportation Act (49 U.S.C. app. 1651 note). The agency administers the highway transportation programs of the DOT in accordance with the provisions of section 6(a) of the act and other pertinent legislation.

The FHWA carries out a broad range of highway transportation activities including the coordination of the highway mode with other modes of transportation and ensuring that the nation's highway transportation system is safe, economical, and efficient with respect to the highway's impact on the environment and social and economic conditions.

Federal-Aid Highway Program

The FHWA administers the federal-aid highway program of financial assistance to the states for highway construction and improvements. This program provides for construction and preservation of the approximately 42,500-mile national system of interstate and defense highways and the improvement of approximately 800,000 miles of other federal-aid primary, secondary, and urban roads and streets.

The agency also administers the Highway Bridge Replacement and Rehabilitation Program to assist in the inspection, analysis, and rehabilitation or replacement of bridges both on and off the federal-aid highway systems.

The FHWA is responsible for carrying out several highway safety programs. These safety programs provide funding for projects which remove, relocate, or shield roadside obstacles; identify and correct hazardous locations; eliminate or reduce hazards at railroad crossings; and improve signing, pavement markings, and signalization.

The agency promulgates and administers highway-related safety guidelines providing for the identification and surveillance of accident locations; highway design, construction, and maintenance; traffic engineering services; and highway-related aspects of pedestrian safety.

Office of Motor Carrier Safety (OMCS)

Under the authority of the motor carrier safety provisions of Title 49 of the U.S. Code, the FHWA, through the Office of Motor Carrier Safety, exercises federal regulatory jurisdiction over the safety performance of all commercial motor carriers (trucks and buses) engaged in interstate and foreign commerce. The agency's motor carrier safety investigators conduct safety reviews at the carriers' facilities and at roadside to determine the safety performance of the carriers' operations. Compliance reviews are conducted to follow up on problem areas identified during the safety reviews and at times result in prosecution or other sanctions against violators of the federal motor carrier safety regulations or the hazardous materials transportation regulations.

Grant Funds

The Motor Carrier Safety Assistance Program (MCSAP) provides grant funding from the federal government to the states to enforce uniform federal and state safety and hazardous materials regulations and rules applicable to commercial motor vehicles and their drivers. To qualify for participation, a state must adopt and enforce the Federal Motor Carrier Safety Regulations (FMCSRs)

or similar state rules compatible with the FMCSRs and the Hazardous Materials Transportation Regulations.

Commercial Driver's License (CDL) Program

All drivers of vehicles with a gross vehicle weight rating of 26,001 pounds or more (what the vehicle and cargo would weigh fully loaded) and those of any size transporting hazardous materials that are required to be placarded must possess a CDL. For buses, the law applies to drivers of vehicles designed to carry 16 or more people.

Research and Special Programs Administration

The Research and Special Programs Administration (RSPA) manages a number of diverse and intermodal programs that include hazardous materials transportation safety, pipeline safety, transportation safety training, emergency transportation involving national defense and resources, aviation data collection and gathering statistics, and research and development.

Programs

The Office of Hazardous Materials Transportation is responsible for hazardous materials transportation safety regulation and enforcement. It develops and issues safety standards addressing every aspect of hazardous materials transportation for all types of transportation except marine bulk packaging. Each of the DOT modal administrations inspects and enforces the hazardous materials regulations applicable to their mode.

Federal Law Enforcement Training Center

The Federal Law Enforcement Training Center (FLETC), a bureau of the U.S. Department of the Treasury, is an interagency training facility for the personnel from approximately 70 federal law enforcement organizations. Facilities are available for exten-

sive physical training and driver training complexes, indoor and outdoor firearms ranges, and numerous practical exercise areas.

Approximately 20 federal law enforcement agencies maintain on-site training staffs. FLETC's interagency training mission for the federal participating organizations is threefold: to provide basic training; to provide advanced and specialized programs geared to a common need; and to support organizations conducting their own advanced and specialized training.

Programs

The National Center for State and Local Enforcement Training was established at the FLETC in 1982. The National Center is mandated to provide training for personnel from state and local law enforcement agencies. The center's primary goal is to provide state and local law enforcement agencies with training or technical assistance in subject matter areas generally unavailable elsewhere. National Center policies focus not only on creating needed training, but also on encouraging networking and operational interaction after training. Such interaction among federal state, and local agencies is viewed as critical.

NHSTA Regional Offices

Regional Administrator
NHTSA - Region I
Transportation System Center
Kendall Square Code 903
Cambridge, MA 02142
(617) 494-3427

Regional Administrator
NHTSA - Region II
222 Mamaroneck Avenue
Room 204
White Plains, NY 10605
(914) 682-6162

Regional Administrator
NHTSA - Region III
BWI Commerce Park
7526 Connelley Drive, Suite L
Hanover, MD 21076-1699
(410) 768-7111

Regional Administrator
NHTSA - Region IV
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PART SIXTEEN: U.S. Constitution and Traffic Law: Decisions of the U.S. Supreme Court

Legal Issues

The following is a synopsis of the appellate court decisions pertaining to traffic law enforcement.

DWI

- **Chemical Test**:
  A driver was injured in collision. The investigating officer made an arrest at the hospital and persuaded a doctor to draw blood sample over the protest and without consent of the driver. At the time, California had no im-plied consent or other law that would muddy the waters. The Court held that the officer had probable cause and arrest was legal under California law. Thus, the search and seizure of blood sample was constitutional incident to the arrest.

  The court held that there was no violation of the privilege against self-incrimination as that constitutional right did not apply to physical evidence. The privilege covers testimonial-type evidence.

  There was no violation of due process of law since the blood sample was taken by qualified personnel under proper medical procedures in a hospital environment.

  The driver's right to counsel was not violated even though his counsel had advised the driver that he did not have to submit to a chemical test. *Schmerber v. California*, 384 U.S. 757 (1966).

- **Admissibility of Refusal of Chemical Test:**
  Where a driver refused a chemical test, this refusal could be admitted into evidence at the trial, and it does not violate his constitutional rights. *South Dakota v. Neville*, 459 U.S. 553 (1983).

- **Saving Breath Sample for Defendant**
  The U.S. Constitution does not require the prosecution to preserve a breath sample so that a defendant can have it analyzed at a later time. *California v. Trombetta*, 467 U.S. 479 (1984).

Hit and Run

Requiring a driver involved in an accident to stop and return to the scene and identify himself does not violate his constitutional rights. *California v. Byers*, 402 U.S. 424 (1971).

Parking

The government may create parking districts and prohibit nonresidents from parking on public streets in such areas. It does not violate equal protection of the law, since classifying parkers into residents and nonresidents was a reasonable classification. *County Board v. Richards*, 434 U.S. 5 (1977).

Stopping Drivers

An officer cannot pull a single driver from the stream of traffic without at least an articulable suspicion of wrong doing. *Delaware v. Prouse*, 440 U.S. 648 (1979).

Roadblocks/DWI

As long as law enforcement officers conduct a nondiscretionary roadblock, it does not violate the Fourth Amendment. How many impaired drivers are arrested is not relevant. *Michigan v. Sitz*, 496 U.S. 444, 110 S. Ct. 2481 (1990).

Driver's License

The Court held that a driver's license is an "important interest" and cannot be taken away or denied without affording the person due process of law. The Court avoided calling it a "right" or a "privilege." *Bell v. Burson*, 402 U.S. 535 (1971).

However, later decisions have made some exceptions to the *Bell* case. In *Dixon v. Love*, 431 U.S. 105 (1977) it was held that no opportunity for a hearing was required under a point system. In *Mackey v. Montrym*, 443 U.S. 1 (1979), under an implied consent law the license could be revoked first and the hearing could come later. In *Illinois v. Batchelder*, 463 U.S. 1112 (1983), an officer's affidavit for refusal under the implied consent law does not have to recite the reasonable grounds the officer had that the driver was DWI.

Miranda

Where a DWI driver is transported to the police station and held, he is in custody for purposes of *Miranda*. Questioning in custody requires *Miranda* warnings in misdemeanor cases. *Berkemer v. McCarty*, 468 U.S. 420 (1984).