U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

Auto Theft and Recovery

Effects of the Motor Vehicle Theft Law Enforcement Act of 1984

**Report to the Congress
March 1991**

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National Highway Traffic Safety Administration

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Executive Summary

In 1984 Congress enacted the Motor Vehicle Theft Law Enforcement Act (the 1984 Theft Act) which is designed to reduce the incidence of motor vehicle thefts and facilitate the tracing and recovery of stolen motor vehicles and parts from stolen vehicles. It is estimated that the annual economic loss resulting from vehicle thefts could be as high as $5.4 billion dollars.

The Department of Transportation implemented the act in October of 1985 by issuing the Federal Motor Vehicle Theft Prevention Standard (49 CFR Part 541) which requires manufacturers of designated high theft passenger car lines (those with theft rates exceeding the 1983-84 median value) to inscribe or affix the vehicle identification number (VIN) onto the following major parts: engines, transmissions, fenders, doors, bumpers, quarter panels, hoods, decklids, tailgates and hatchbacks. The standard does not apply to any other classes of vehicles. The standard took effect for designated high theft car lines in model year 1987 at an average cost of $4.14 per car, costing consumers $15,400,000 annually.

This report is an evaluation of the impact and effectiveness of the regulation. Did the standard reduce theft and what changes, if any, are appropriate to make the regulation more effective?

The theft and recovery data for this report comes from the FBI's National Crime Information Center (NCIC), with more than 5 million records for 1984 through 1988. This data base is the most comprehensive available, but it does not disaggregate theft data by motive. Thieves steal motor vehicles for many reasons. It is estimated that between 10 and 16 percent of all thefts occur in order that parts can be removed and sold for profit (chop shop operations). An additional 4 to 17 percent are believed to be stolen for export and a further 9 to 38 percent are stolen in relation to fraud involving insurance and retagging. Because the parts marking provisions of the Theft Act will probably most affect the 23 to 71 percent of thefts committed for profit, conclusions based on the total data cannot show definitively the effectiveness of the Act. Nevertheless, the data base is the best available, and analysis of this information provides important insights into various aspects of the vehicle theft problem.

In 1988, there were 1,206,699 motor vehicles stolen, a rise of 35 percent since 1984, and almost 12 percent since 1987. Passenger cars account for 73 percent of all motor vehicle thefts; light trucks, vans and multipurpose vehicles account for 18 percent. The remaining 9 percent represent thefts of heavy trucks, buses and motorcycles.

In the report, theft rates are calculated in terms of thefts per 100,000 registered vehicles. The rate for passenger car theft has increased by 22 percent since 1984 and the rate for light truck theft has doubled. The rate for motorcycle theft increased by 8 percent over 5 years and the heavy truck theft rate actually declined by 12 percent since 1984. The recovery rates since 1984 have remained fairly constant, reaching 88 percent for passenger cars in 1987.

The effect of parts marking was analyzed by comparing theft rates of marked and unmarked model year 1987 and 1988 car lines to their respective predecessor lines in 1985 and 1986. When this was done it showed that the theft rate of marked high theft cars increased 3.4 percent in comparison with prior years (1985 and 1986). The theft rate of low theft, unmarked cars increased 13.5 percent. The higher increase in the theft rate of low theft vehicles in comparison with high theft cars continues a trend that has existed for several years and, therefore is not necessarily an indicator of the success of the Theft Act.

After applying an adjustment for pre-existing trends, the difference in the change in theft rates between marked and unmarked cars was found to be statistically insignificant. Similarly, an analysis of recovery rates showed no statistically significant differences between marked and unmarked car lines.

Evaluating the theft standard using this approach results in conclusions that are neither clear nor definitive. As mentioned above, the data base that must be used does not permit analysis of theft rates for profit alone. Moreover, overall trends have not changed markedly following implementation of the Theft Act. Under such conditions no meaningful statement on the effectiveness of parts marking can be made using the available national data sets.

Given the uncertainty of these results, other data were examined. Analysis of theft claims costs of seven large insurers showed no evidence that parts marking had reduced auto theft.

Insurance costs had increased for both marked and unmarked cars. Here too, however, it was necessary to adjust the data to account for pre-existing trends and the analysis, by itself, also does not produce statistically significant results.

The relative rates of recovery of "in-part" marked and unmarked cars were also examined. These are vehicles missing a major part, usually as the result of a chop shop operation. Here too, there was no difference between recovery rates for marked and unmarked cars. If the parts marking standard was reducing chop shop operations, one would expect an increase in the relative recovery rate of the marked cars.

In short, evidence of the effectiveness of the theft standard cannot be obtained through analysis of the data sets examined. The Department has, however, found wide support for parts marking in the law enforcement community.

Those whose concerns focus on the prevention and deterrence of theft or the capture and prosecution of perpetrators believe that marking parts provides them a valuable tool. For the most part, these groups favor expanding the coverage of the standard and making the markings used more permanent. Of course actions to expand the use of marking will raise the cost of implementing the regulation.

A series of tests were conducted to determine whether the adhesive labels used to mark auto parts could be removed. Among the many tests, one method was found that will remove all traces of the label. The Department is concerned that the current parts marking system may not be good enough and is undertaking a study to see if there is a better way to mark parts.

A Preliminary Report was published for public comment, as required by the Congress. The Department issued a notice (Friday, July 22, 1990, 55 Federal Register 30786) announcing a 45 day opportunity for public comment. Forty commenters responded with views ranging from terminating the theft prevention standard to extending parts marking to all vehicles. A summary and discussion of comments are included in Appendix 2 of this report.

The Department has considered the views of respondents and the outcome of its own analyses in developing recommendations to the Congress. At this time the Department recommends that the theft prevention standard be continued with several minor changes. A complete set of recommendations is presented in the following section of the report.

Recommendations

Section 614(b)(3) of the Theft Act requires the Department to "...include recommendations for (A) continuing the standard established by this title without change, (B) modifying this title to cover more or fewer lines of passenger motor vehicles, (C) modifying this title to cover other classes of motor vehicles, or (D) terminating the standard for all future motor vehicles." Additionally, the statute states that the report [to Congress] may include, as appropriate, legislative and administrative recommendations.

Analysis of the available data leads to the conclusion that existing data are inadequate and inconclusive for determining whether the parts marking standard is effective in reducing theft. Therefore, we believe that it would be premature and costly at this time to extend parts marking to cover other classes of motor vehicles or to cover more passenger motor vehicles; however, we also do not believe that the data supports a conclusion to terminate the theft standard. Rather, we believe the program should be continued with several changes to enhance its efficiency.

Therefore, we recommend the following three legislative amendments.

The first recommendation is that the statute be amended to allow the Department to establish a median theft rate every year based upon more current year data than that for Model Years (MYs) 1983/84. This would allow the Department to determine the likely high-theft designation of a car line for each new model year by comparison with the median theft rate for the most current year for which data are available to allow for a more equitable determination of car lines introduced after MYs 1983/84.

Currently, Section 603(b)(2) of the Theft Act directs the Department to designate likely high-theft car lines based on their expected relationship to the median theft rate which was established for MYs 1983/84. Thus, the expected theft rate of a new model is compared to the established median theft rate of 3.2712 for model/calendar years 1983/84. However, theft rates of all automobiles have shown an increasing trend over time. Consequently, comparing each model year to the prior MYs 1983/84 median theft rate, could eventually result in most car lines falling above the median and thereby nearly all lines being designated as high-theft car lines and therefore subject to parts marking. Allowing the Department to use the most current theft rates (to determine the median theft rate) would provide for a more realistic assessment of which vehicles are truly "high theft"; i.e., above the median.

To illustrate this issue, the median theft rates for MYs 1983/84 through 1989[1] are as follows: 3.2712, 3.4539, 3.6023, 4.1476, 4.4158, and 4.1959, respectively. Thus, the theft rate has increased by 28 percent since MYs 1983/84. To further demonstrate the inequity of the present situation, the Department had designated 81 car lines as likely high theft for MY 1987 (based on the MYs 1983/84 median theft rate) and compared their theft rates against the actual MY 1987 median theft rate. (Ten of these 81 designated car lines were not produced for MY 1987.) Thirty-seven of the designated car lines fell above this theft rate, while 47 fell above the MYs 1983/84 rate. (More than 47 lines (81) were selected because our selection process calls for decisions in advance of the vehicle's introduction date for new vehicles and continuation of selection for previously designated high-theft car lines, whether or not they are actually high theft).

Furthermore, of the 86 car lines selected as likely high theft for MY 1988 (17 of these were not produced), 37 fell above the actual MY 1988 theft rate, but 49 fell above the established median for MYs 1983/84. In reality, 49 of 69 car lines fell above 3.2712 or 71 percent. For MY 1989, 92 car lines were subject to marking (26 were not produced).

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[1] MY 1989 theft rate data are preliminary.

Of the 66 produced, 32 (48 percent) fell above the actual median for MY 1989, and 39 (59 percent) fell above the established median theft rate for MYs 1983/84. Thus, under the present system, we are requiring more car lines than are necessary to have their parts marked. Using a fluctuating theft rate would be more equitable than continuation of the current procedures.

We believe this recommendation is warranted since the current procedure requires marking of a significant additional number of car lines which are not above the current median theft rate. We believe the specifics of determining the median theft rate for each year (and modifying it, if necessary) can be accomplished through the regulatory process. This flexibility would enable the agency to modify the base theft rate for comparison if, in the future, theft rates should actually exhibit a downward trend.

Additionally, the Department has two other recommendations that we believe would enhance efficiency in the implementation of the Theft Act.

The second recommendation relates to the first one, in that once a car line has been designated as being likely high theft, the existing Act requires that it remain in that category indefinitely. The Department recommends that the statute be amended by allowing the Department to redesignate a car line from likely high theft to likely low theft if that line has proven to be below an established median theft rate for a designated number of years.

Presently, Section 603(5)(d) of the Theft Act states once a car line has been designated as likely high theft, it will be subject to the requirements of the Theft Act unless it receives an exemption from the marking requirements pursuant to Section 605 of the Act. On the other hand, the statute does not preclude the Department from redesignating a likely low-theft car line to a likely high-theft line.

We believe that this recommendation would preclude proliferation of marked car lines if lines that were once designated high theft and had a theft rate that did not rise above the median (for whatever established year or years), could be redesignated to low theft. Many car lines are inaccurately designated high theft because of the uncertainty of predicting future theft rates at the time the designations are made, either by the Department or by manufacturers themselves. For example, as discussed earlier, when using the MYs 1983/84 median, 86 car lines were designated as high theft for MY 1988 (17 lines were not produced, making it 69 actual car lines that were produced and designated). However, only 49 of these actually had theft rates above the median value as established for MYs 1983/84. Thus, more than 28 percent (20 of 69) of the designations were later proven most likely unnecessary. For MY 1989, 92 car lines were designated high theft (26 car lines were not produced) but only 39 had actual theft rates above the established MYs 1983/84 median -- a more than 40 percent error rate (27 of 66).

We therefore suggest that the Department be given authority to redesignate high-theft car lines and allow us to establish the procedures through the rulemaking process.

The third recommendation that the Department suggests is to amend the statute to allow manufacturers an unlimited number of exemptions per year for the antitheft devices to be used in lieu of the parts marking requirements on designated high-theft car lines. Presently, Section 605(a)(2) states that "For each subsequent model year [after the model year to which the standard applied], the Secretary may grant exemption for not more than 2 additional lines of any manufacturer...." These exemptions are for antitheft devices installed as standard equipment and are applied in lieu of marking the vehicle's major component parts. The Department believes that to encourage manufacturers to use antitheft systems as standard equipment on its vehicles, there should not be a ceiling on the number of lines to be authorized an exemption. We believe use of these systems should be encouraged because, based on preliminary MY 1989 theft data, a new antitheft system that at least one manufacturer has installed in one of its car lines, has reduced the theft rates for that line by up to 70 percent.

Discussion of Recommendations Received from Commenters

Section 614(c)(4) states that at least 90 days before submitting this report to Congress, the Secretary shall publish the proposed report for public review and for an opportunity for written comment of at least 45 days. The Secretary shall consider such comments in preparing the final report and shall include a summary of such comments with the final report.

A total of 40 commenters recommended changes to the Theft Act ranging from modifying the Theft Act by covering other classes of motor vehicles, to terminating the standard for all future motor vehicles. Listed below is a summary by issue of recommendations received from commenters.

Extend Parts Marking to Other Vehicles

Twenty-four commenters comprising law enforcement agencies and their respective associations; insurance companies and their associations; label manufacturers; automobile associations; and car rental associations all recommended extending parts marking to cover other than high-theft passenger cars. Of those commenters, 10 specifically wanted the standard extended to light trucks, vans, and MPV's; and 11 recommended parts marking for all vehicles. Those 11 recommendations were not

specific enough for the agency to determine whether "all vehicles" is inclusive of heavy vehicles, such as tractor-trailers, buses, and motorcycles.

RESPONSE

The Department does not feel that this is the appropriate time to make a recommendation to extend parts marking. As pointed out in the body of the report, the Department can not conclude that parts marking is effective. Therefore, there is no supporting basis to conclude that parts marking would yield reductions in theft of other types of vehicles.

Extend Parts Marking to Additional Parts

Six commenters (Avery Label Systems (Avery), Avis Car Rental (Avis), the National Automobile Theft Bureau (NATB), the International Association of Chiefs of Police (IACP), the Jefferson Group, and the Houston Police Department) recommended marking of additional automobile parts such as; radios, wheels, seats, T-tops, and other components which can be stripped from a car, because these components are highly marketable and are quick resale items.

RESPONSE:

Based on the lack of results of the effectiveness of parts marking as cited in this report, the Department believes it would be premature to recommend the marking of additional parts. The fourteen parts originally chosen for marking were also judged to be highly marketable and the

Department cannot conclude that marking is effective for these parts. Therefore the marking of additional parts cannot be justified, based on a cost-benefit analysis, at this time.

Terminate the Parts Marking Standard

Five commenters (Chrysler, Ford, GM, Volkswagen and the Motor Vehicle Manufacturers Association) recommended termination of the parts marking standard stating that the report did not yield quantified data to substantiate the continuance of the standard.

RESPONSE:

Even though this report does not contain data that indicates that parts marking is having a dramatic effect on decreasing motor vehicle theft, it also does not conclude that parts marking is not having a positive effect in this area or in other areas of the theft problem. Law enforcement agencies have stated many times how parts marking assists in the apprehension and prosecution of motor vehicle thieves. The Department believes that to recommend termination at this time would be an untimely decision that could have a negative impact for law enforcement and other agencies involved in the deterrence of motor vehicle theft.

At this time, the Department is not recommending extension or termination of the program, and believes that analyses of future years' theft data will enable a more informed decision to be made.

Voluntary Parts Marking

Two commenters (International Association of Auto Theft Investigators (IAATI) and the 3M Company (3M)) recommended that voluntary vehicle identification standards be issued.

RESPONSE:

The Department has not yet issued a voluntary standard. We were awaiting the completion of this report to determine the effectiveness of the parts marking program. Based on the lack of results in this report, the Department cannot justify issuing a voluntary standard, without a clearer trend in theft reduction. Issuing a voluntary standard would cast additional costs on the automotive industry and others. As an aside, there are no rules which preclude manufacturers or any person from marking vehicles on a voluntary basis.

Stamped Parts Marking

Several commenters including the IACP, IAATI, NATB, California Highway Patrol, American Association of Motor Vehicle Administrators (AAMVA), and the AAA of Michigan, recommended that a more permanent marking system using methods such as engraving, etching, or stamping be required, in lieu of labels. Other commenters including Avery, Allstate, 3M, the Jefferson Group, and AVIS suggested that security marking be improved and/or that security standards be raised.

RESPONSE:

The Department does not consider this recommendation a viable option at this time. After conducting a series of tests to remove adhesive labels, the Department is concerned that the current parts marking system may not be good enough and is undertaking a study to see if there is a better way to mark parts. The determination that stamping parts is more effective than labelling cannot be made, based on the available information.

Derivative VIN be stamped on Engine and Transmission

The IACP and NATB recommended requiring the VIN derivative (last eight characters of a VIN) be stamped in uniform or "standard" locations on the engine and transmission. IAATI recommends manufacturers continue to stamp numbers on the engine and transmission.

RESPONSE:

Currently, manufacturers stamp the VIN or derivative thereof onto predetermined areas for engines and transmissions. Presently, all car lines have these stamped parts. The Department does not deem it necessary to impose additional legislation on manufacturers to perform a specific task that they are presently doing voluntarily.

Additional Years of Data Needed

Twelve commenters recommended that more years of data should be collected and analyzed since the report was based on only the MYs 1987 and 1988 theft experience with the parts marking standard. Most of these commenters stated more time was needed to measure the effect of the standard. Drs. Clarke of Rutgers University and Harris of the University of Texas at San Antonio suggested that retrospective parts marking of the entire existing fleet be considered and they recommended more research into the auto theft problem.

RESPONSE:

The Department concurs with the conclusion that additional years of data may be useful in order to make an informed decision on whether to recommend extending the parts marking standard, or to consider termination of the standard. But, based on the information that we do have, we are recommending continuation of the program.

To address Drs. Clarke and Harris' comment regarding retrospective parts marking, the Department believes it would be cost prohibitive to require parts marking for car lines produced prior to MY 1987 since the data available are not persuasive that parts marking is effective in reducing theft.

Anti-theft Devices

Allstate Insurance Company recommended that exempted car lines (i.e. those with standard equipment antitheft devices approved by the Department) also have their parts marked. The California Highway Patrol recommended the exemption process be eliminated and State Farm Insurance Company states the Department is "too liberal" in granting exemptions. The Vehicle Security Association (CASA/VSA) urged that the Department not consider any Federal design standard, nor consider a regulation requiring manufacturers to install antitheft devices as standard equipment.

The CASA/VSA stated that standardized antitheft systems can easily be defeated on many cars once thieves know how to defeat the system on one car.

RESPONSE:

Section 605 of the Theft Act permits a manufacturer of a designated high-theft line to petition the Department to exempt it from the parts marking requirements of the theft standard for any car line which is equipped as standard equipment with an antitheft device which the Department determines is likely to be as effective in deterring motor vehicle theft as compliance with the standard. The Department believes requiring exempted car lines to also include parts marking, or to eliminate the exemption process, would not be beneficial in reducing theft

or encouraging manufacturers to utilize new and future technology to enhance the performance of antitheft devices. Several antitheft devices on the market today have proven to be very effective in deterring motor vehicle theft. In granting exemptions, the Department utilizes criteria as outlined in Section 605 of the Theft Act. These requirements are generic enough to encourage manufacturers to create new and innovative devices, but at the same time citing specific performance criteria for manufacturers to utilize when developing antitheft devices. The Department does not plan to issue any Federal design standard or to require manufacturers to install antitheft devices on car lines in lieu of parts marking at this time.

Vehicle Identificaton Number (VIN) is Restrictive

The NATB believes the definition of the ID used for marking parts is too restrictive; any number used by a manufacturer should be acceptable.

RESPONSE:

When promulgating the theft prevention standard the Department held a public meeting and received comments on the use of the full 17-digit VIN. The Department decided to use the full VIN, for three reasons: 1) the full VIN represents a unique signature which cannot be repeated on any two vehicles during a 30-year period; 2) the full VIN is the basis for the National Crime Information Center's (NCIC) vehicle theft reporting system; and 3) since the full VIN is now common use for all law enforcement agencies, minimal disruption would be incurred, since over 26,000 police jurisdictions report to NCIC on motor vehicle thefts. Consideration was given to the use of VIN derivatives, but NCIC informed the Department that any theft inquiries using less than 17 digits would be rejected by their reporting system.

Discontinued Car lines Removed from Listing

Toyota recommended that a discontinued car model should not be included indefinitely on the list of vehicles subject to the theft standard. Toyota also recommended that if the theft rate of a "high theft" car line falls below the median theft rate for a to-be-determined period of time and is projected to remain below the median, then the "high theft" classification should be reversed. Toyota suggested a more reasonable amount of lead time in cases where a previously determined "low theft" line rises above the median theft rate.

RESPONSE:

The Department agrees with Toyota and has therefore, included as one of the legislative recommendations in this report, that a car line be allowed to be redetermined from likely high-theft to likely low-theft, if the line's theft rate decreases to below the median theft rate.

Ranking System for Theft Resistance

Jaguar suggested that the Department specify basic measures to hinder access to vehicles and recommended establishment of a joint government/insurance industry ranking system for theft resistance to stimulate improved security without requiring legislation.

RESPONSE:

The Department understands Jaguar's suggestion that certain basic measures be established to hinder access to vehicles with antitheft devices; and that a ranking system should be established so that legislation would not be required. As stated in a previous comment, the Department utilizes the

criteria as established in Section 605 of the Act, and believes that additional criteria may hinder the creativity and innovation of manufacturers when developing antitheft devices. If, in the future, the Department concludes that a need for additional criteria exists, we have the authority to seek changes through the rulemaking process.

Promote Uniform Titling Laws

Active participation in promoting uniform state laws for titling, registration, and vehicle transfer was recommended by Allstate, 3M, the Jefferson Group, AVIS, and AAA. The efforts in the State of Michigan were cited by Ford, GM, and AAA Michigan as programs which other States or localities might emulate to reduce auto theft.

RESPONSE:

The Department encourages and endorses uniformity of State titling and registration laws and is involved with motor vehicle trade organizations and other associations that promote such an effort. The Department is aware of efforts by State and local government associations, legislators, police agencies, insurance companies and others that have progressed towards creating laws and statutes dealing with titling, inspections and licensing of vehicles and vehicle parts. The Department realizes that the leniency of State laws and particularly the lack of consistency between States in titling, registration of motor vehicles, and the inadequate documentation for the disposal of salvage vehicles can hinder the enforcement and monitoring efforts of State and local law enforcement officials in controlling motor vehicle theft, and as stated encourages uniformity.

The Truth in Mileage Act and the subsequent odometer disclosure requirements issued by the Department require that all titles and other documents used to transfer titles be set forth by secure processes. This provision may make it harder to counterfeit or alter a title and will thus help deter the theft of vehicles intended for resale.

Auto Theft and Recovery

Introduction

Every year, more than one million motor vehicles are stolen. Estimates indicate that the economic loss resulting from these thefts could be as high as $5.4 billion dollars. Police report that there are numerous reasons for stealing cars -- for transportation, joyriding, export, and for obtaining expensive stereo equipment and selling it to buy drugs. A substantial economic loss, however, appears to result from thefts motivated to meet the demands for replacement parts.

Because of the escalating number of car thefts, Congress enacted the Motor Vehicle Theft Law Enforcement Act of 1984 (the 1984 Theft Act). The Theft Act is designed to reduce the incidence of motor vehicle thefts and facilitate the tracing and recovery of parts from stolen vehicles. The Act directed the Secretary of Transportation to issue a theft prevention standard that would require manufacturers to inscribe or affix numbers or symbols on major parts of high theft lines of passenger cars for identification purposes. The Act also addressed other issues such as criminal penalties, exportation of stolen motor vehicles, and comprehensive insurance premiums.

In October 1985, the Department issued the Federal Motor Vehicle Theft Prevention Standard (49 CFR Part 541) which requires manufacturers of designated high theft passenger car lines to inscribe or affix the vehicle identification number (VIN) onto the following major parts:

engines, transmissions, fenders, doors, bumpers, quarter panels, hoods, and decklids/tailgates and/or hatchbacks. In the case of engines and transmissions, either the VIN or an eight digit VIN derivative must be engraved or stamped. Manufacturers can meet the affixation requirement with indelibly marked labels which cannot be removed without becoming torn or rendering the number on the label illegible. The labels must also leave a residue on the part after being removed.

The Standard took effect for 81 designated high theft car lines for model year 1987. The number rose to 86, 92, and 103 for model years 1988, 1989, and 1990, respectively. (These car lines include 10, 17, 26, and 25 lines that were designated, but not produced for model years 1987 through 1990, respectively.)

Section 614 of the Theft Act directs the Secretary to submit a report to the Congress five years after the promulgation of the theft prevention standard in October 1985. This study comprises the five year report.

Congress required the Secretary to include the following information in the report: motor vehicle theft and recovery statistics as well as their collection and reliability; the extent to which motor vehicles are dismantled and exported; the market for stolen parts; the cost and benefit of marking parts; arrest and prosecution of auto theft offenders; the Act's effect on the cost of comprehensive premiums; the adequacy of Federal and State theft laws; and an assessment of parts marking benefits for other than passenger cars. The Department obtained data from sources specified in the Act and available elsewhere, including the FBI's National Crime Information Center, and Uniform Crime Reporting Section; the Executive Office for U.S. Attorneys; the Bureau of Customs; the Highway Loss Data Institute; the National Automobile Theft Bureau; insurance companies; surveys of, and interviews with state, county and city enforcement, motor vehicle administration and court officials; auto manufacturers; autobody repair shops and various associations and individuals.

As required in 15 U.S.C. 2034(b)(4), the Department published a Preliminary Report for public review and issued a notice (Friday, July 22, 1990, 55 Federal Register 30786) announcing a 45 day opportunity for public comment. Forty comments were received which are summarized and discussed in Appendix 2.

In preparing the report, the Department consulted with the Department of Justice. Comments from Justice on the preliminary report were taken into account in writing the final report.

Motives and the Market

Thieves differ in their motives for stealing motor vehicles. It is estimated that between 10 and 16 percent of all thefts occur in order that parts be removed and sold for profit (chop shop operations). An additional 4 to 17 percent are believed to be stolen for export and a further 9 to 38 percent stolen in relation to fraud involving insurance and retagging. Chop shop operations, export, and insurance fraud are believed to account for a significant proportion of the 200,000 vehicles, 168,000 of which are passenger cars, which are stolen and never recovered each year.

Estimated counts and costs for chop shop operations, fraud and export for the year 1988 follow:

- Between 88,000 and 141,000 passenger cars valued from approximately $500 million to $1 billion are believed to have been stolen for chop shop operations;

- Fraud of all kinds accounted for anywhere between 79,000 to 353,000 stolen passenger cars, valued from $400 million to $2.3 billion; and

- Between 35,000 and 146,000 of the almost 170,000 unrecovered passenger cars are believed to have been stolen for export, with an estimated value of $200 million to $1 billion.

Primarily as a result of crash damage, major sheet metal parts were replaced in approximately 31.9 million passenger cars during 1988 at an estimated cost of $28.6 billion. The used/rebuilt portion of this market is thought to be about $1.6 billion (4 to 5 percent). Stolen parts comprise a portion of this used parts market.

In collecting motor vehicle theft data, it became clear that information on theft motives is scarce. Estimates on the number of thefts, and/or their associated economic loss, for any particular motive, are broad ranges. This leaves a potential for substantial overlap when estimating the consequences of interventions directed at a particular motive. Since it was not possible to count thefts according to their motives, only total thefts for all motives could be measured.

Exports of stolen vehicles are particularly difficult to estimate and it is not possible to assess the impact of the Theft Act nor the Theft Prevention Standard on such exports. Customs agents seized 1,292 stolen passenger cars in fiscal years 1988 and 1989 - most during reentry from Mexico. In May 1989, the U.S. Customs Service implemented regulations that require a potential exporter to present the vehicle and documentation of lawful ownership at the port of embarkation three days prior to lading when the vehicle is to be transported by vessel or aircraft, or three days prior to exportation when the vehicle is to be transported by rail. Law enforcement officials believe that most stolen vehicles and components are exported via sealed containers or crates.

Thefts and Recoveries

The FBI's National Crime Information Center (NCIC), with more than 5 million records for 1984 through 1988, was the source of theft and recovery data for this report. Each record contains the make, line, theft and recovery dates of individual stolen motor vehicles. The Uniform Crime Reports (UCR), also prepared by the FBI, contains summary theft and attempted theft statistics reported by local police agencies.

UCR statistics are 15 percent higher than those obtained from NCIC, because they include attempted as well as successful thefts. However, theft trends over time are similar in both data sets.

In 1988, there were 1,206,699 motor vehicles stolen, a rise of 35 percent since 1984, and almost 12 percent since 1987. Passenger cars account for 73 percent of all motor vehicle thefts; light trucks, vans and multipurpose vehicles account for 18 percent. The remaining 9 percent represent thefts of heavy trucks, buses and motorcycles. Annual motor vehicle thefts since 1984, the earliest available statistics, are as follows:

MOTOR VEHICLE THEFTS

Motor Vehicle Type	Calendar Year in Which Thefts Took Place				
	1984	1985	1986	1987	1988
Passenger Cars	655,225	681,507	752,690	786,641	882,676
Light Trucks, Vans, Multi-Purpose Vehicles	129,475	141,326	162,889	186,577	222,273
Motorcycles	72,030	75,356	75,414	70,746	64,801
Heavy Trucks and Buses	39,651	37,753	37,649	37,671	36,949
TOTAL	896,381	935,942	1,028,642	1,081,635	1,206,699

Source: Federal Bureau of Investigation
National Crime Information Center

From the standpoint of rates (thefts in relation to registrations) the theft problem has worsened. The rate for passenger cars has increased by 22 percent since 1984 and the rate for light trucks has doubled. The rate for motorcycles increased by 8 percent over 5 years, while the heavy trucks theft rate actually declined by 12 percent since 1984.

Vehicle age was not found to be a factor in the rate at which cars are stolen nor in the recovery of a motor vehicle.

The number of recoveries have kept pace with thefts, i.e., recovery rates since 1984 have remained fairly constant. A problem with using NCIC recovery data for the latest year available (1988) is that recoveries continue to be made beyond the cut off date for 1988. They are expected to increase.

Passenger cars have the highest recovery rates, followed in order by heavy trucks, light trucks, vans, multipurpose vehicles, and motorcycles. The number of recoveries and recovery rates since 1984 are:

RECOVERIES BY MOTOR VEHICLE TYPE

Number of Vehicles Recovered and Recovery Rates

Calendar Year in Which Theft Took Place

Vehicle Type	1984	1985	1986	1987	1988
Passenger Cars	499,963	539,249	611,120	644,342	707,299
Rate - Percent	84	86	88	88	81
Light Trucks, Vans	73,012	83,073	96,758	109,979	123,592
Rate - Percent	74	77	77	77	75
Heavy Trucks/Buses	54,257	55,018	58,834	62,346	66,610
Rate - Percent	81	81	82	82	76
Motorcycles	43,879	47,197	46,006	42,165	34,138
Rate - Percent	61	63	61	60	53
TOTAL RECOVERED	671,111	724,537	812,718	858,832	931,639
	81	83	84	84	78

Source: Federal Bureau of Investigation
National Crime Information Center

Marking 12 to 14 parts of high theft passenger cars was designed to deter thieves from stealing cars for parts, and to make recoveries of vehicles and/or their parts easier because of the ability of investigators to trace stolen parts. Since the theft and recovery data do not indicate the motive

for the crime, any changes observed in the statistics cannot be directly related to any particular motive. However, it was hypothesized that a substantial change in the theft rate of high theft passenger cars with marked cars relative to unmarked cars would indicate that parts marking was a successful deterrent for thefts motivated by profit.

The annual motor vehicle thefts since 1984 of current and one year old model cars with and without marked parts, are as follows:

Stolen Passenger Cars
With Marked Parts, and With Unmarked Parts

	Calendar Years in Which Cars Were Stolen				
	1984	1985	1986	1987	1988
Cars with Marked Parts					
Current Yr Models	31,261	28,047	30,178	21,347*	23,364*
One Yr Old Models	26,977	37,072	36,223	35,838	27,217*
Unmarked Cars					
Current Yr Models	16,625	19,072	23,209	27,148	32,037
One Yr Old Models	13,777	20,212	25,239	28,613	36,706

* Stolen cars with marked parts; stolen cars for other years are predecessors.

Source: Federal Bureau of Investigation
National Crime Information Center.

Fewer high theft (marked) cars were stolen in 1987 and 1988 compared to prior years in contrast to the experience of unmarked cars. When adjusting the number of car thefts by their respective number of registrations, the theft rates are as follows:

Theft Rates for Passenger Cars
With Marked Parts and Unmarked Parts
(Thefts per 100,000 Registered Vehicles)

	Calendar Year in Which Cars Were Stolen				
	1984	1985	1986	1987	1988
Cars With Marked Parts					
Current Yr. Models	1,109	1,147	1,224	1,211*	1,098*
One Yr. Old Models	851	873	918	911	1,017*
Unmarked Cars					
Current Yr. Models	484	516	588	647	752
One Yr. Old Models	358	371	436	478	601

* Stolen cars with marked parts; stolen cars for other years are predecessors.

Source: Federal Bureau of Investigation
National Crime Information Center and R. L. Polk & Co. data.

The table clearly shows that cars with marked parts are stolen far more frequently -- by almost a factor of 2 to 1 -- than unmarked cars. In other words, high and low theft car lines represent different populations. Motives for stealing cars in high theft lines may differ from those leading to thefts in low theft lines. For example, joy riding or fraud may be more of a factor in one line than another. As a result of this, available theft data, which are not broken down by motives, provides only an imperfect basis on which to draw conclusions on the effectiveness of the Theft Act. This is true because

the marking required by the Act is far more likely to affect thefts for profit than other types of theft. Nevertheless the national theft data are the only source of theft data available for year to year analysis.

To detect the effects of parts marking, a rational approach would have been to assign car lines at random into two groups containing car lines across the whole range of theft rates. Then, one of the groups would have been chosen for labeling. The non-marked vehicles would serve as a control group. The experience of the two groups of vehicles would be examined over a number of years for changes in theft and recovery rates. However, the requirement in the law to mark high theft car lines determined the approach that had to be used to assess the impact of parts marking.

If it is crucial to more definitively evaluate the standard, there are ways to implement parts marking which would accomplish this. Such approaches would require statutory action to allow the agency such flexibility. The first approach is as just described, to randomly assign passenger car lines for parts marking. The range of high to low theft rates would be equally represented in the marked and unmarked groups. The second approach would require extending parts marking to light trucks -- if that is a desirable extension of the parts marking standard. The random assignment of light truck lines for marking would follow the same process. One advantage for using light trucks is that a better analysis than in the first approach is possible because no light truck lines were previously covered by the standard.

While it was possible to compare the experience of high theft car lines with low theft car lines, it is not clear that they should be expected to respond similarly to the regulatory intervention. In this analysis, the two sets of data -- theft rates of marked and unmarked vehicles -- were adjusted based on pre-existing trends using the available data of the three pre-standard years (1984-1986). While theft rates have in general been increasing, the pre-existing trends show that predecessors of marked cars experienced a lesser increase in theft rates relative to theft rates of predecessors of unmarked cars.

The effect of parts marking was analyzed by comparing theft rates of marked and unmarked 1987 (current year models) and 1988 (current plus one-year old models) cars to their respective predecessors in 1985 and 1986. When this was done it showed that the theft rate of marked high theft car lines increased 3.4 percent as compared with prior (1985 and 1986) years. The theft rate of low theft unmarked cars was found to have increased by 13.5 percent. The relative change in theft rates is, therefore, 10.1 percent. The relative change of trends for these two types of car lines for the years prior to parts marking was 9.8 percent. The net difference in the change in theft rates between marked and unmarked cars is 0.3 (10.1 - 9.8) percent which is not statistically significant. In other words, based on national data from all motives, parts marking at least in 1987 and 1988 has not had a measurable effect beyond what could be expected by chance. However, the lack of a measurable consequence does not necessarily imply that the theft prevention standard is ineffective.

Recovery rates, as shown in the following table, have remained stable over five years, there were no pre- existing trends, and there are no statistically significant recovery rate differences between marked and unmarked car lines.

Antitheft Devices

Manufacturers are granted an exemption from parts marking if they install antitheft devices meeting certain criteria. The theft and recovery rates of vehicles having such devices were compared with those of marked and unmarked cars. The sample of cars equipped with antitheft devices used in the analysis was relatively small (just over 6000) and the year to year theft rates for such cars, and their unequipped predecessors were somewhat erratic -- but they do not show a significant difference from theft rates of cars containing marked parts. Recovery rates of antitheft device equipped cars appeared to be lower than those of marked cars.

Recovery Rates for Passenger Cars
(Percent)

	Calendar Year in Which Cars Were Stolen				
	1984	1985	1986	1987	1988[1/]
Cars With Marked Parts					
Current Yr Models	90	91	92	91*	82*
One Yr Old Models	86	89	90	89	84*
Unmarked Cars					
Current Yr Models	93	92	93	92	84
One Yr Old Models	89	90	90	91	85

1/ Rates are based on recoveries in 1988 only

* Stolen cars with marked parts; stolen cars for other years are predecessors.

Source: Federal Bureau of Investigation
National Crime Information Center

Collection and Dissemination of Theft and Recovery Information

All national theft and recovery information is collected and compiled by four organizations. The Uniform Crime Reports (UCR) and the National Crime Information Center (NCIC) are part of the Federal Bureau of Investigation.

The Highway Loss Data Institute (HLDI) is associated with the Insurance Institute for Highway Safety (IIHS) and the National Auto Theft Bureau (NATB) is sponsored by members of the insurance industry.

While the available data sources provide substantial information on the number of thefts occurring and the costs associated with auto theft, they do not provide a means for determining the motives for the theft. The theft prevention standard was designed to affect thefts motivated by profit, including chop-shops, retagging (also known as VIN or salvage switching), insurance fraud and export. Some law enforcement officials believe retagging to be just as important a theft motive as chop shop operations. Directly measuring changes in thefts for this subset of crimes is not possible. While some conclusions may be inferred from data indicating recovery condition, analysis of changes in theft rates will also measure changes in other motives including transportation.

UCR collects monthly totals of reported motor vehicle thefts and attempted thefts, plus arrests for these crimes from local law enforcement agencies. They publish this information at least once a year. The primary objective is to generate a reliable set of criminal statistics for use in law enforcement administration, operation, and management.

The goal of NCIC is to help the criminal justice community find stolen vehicles and parts by maintaining a computerized filing system of theft cases readily accessible to as many agencies as possible. The online system provides current data on crimes under investigation. All case information including closed cases is retained on tapes for four years.

The stolen vehicle report always includes the vehicle identification number (VIN), or complete state registration data.

The National Automobile Theft Bureau is a clearinghouse for information on motor vehicle theft reported by the insurance industry that provides assistance to law enforcement agencies and other public agencies. The NATB does not maintain computerized records on state registration information. Although the NATB does not usually compare registration applications with stolen vehicle and salvage records, this may be done on a special basis where the comparison or match is conducted by a state motor vehicle department or state police agency. The NATB's assistance to law enforcement includes matching reports of stolen vehicles with reports of vehicle recoveries, impounded vehicles, or investigative inquires.

The NCIC registry has the greatest amount of detailed data useful in studying the thefts and recoveries according to make and line. UCR appears to offer the most accurate data summaries about overall severity of the theft problem. HLDI compiles and disseminates the most complete insurance claim cost data, and their publications on insurance theft losses are the most comprehensive.

These organizations have, over the years, developed their data systems to meet well established needs and have generally maintained reliable, accurate and timely information.

The Cost of Marking Parts

Up to 14 parts have to be marked to comply with the standard. Manufacturers are, however, allowed to identify engines and transmissions with a VIN derivative (usually 8 or 9 digits), if they had done so as of October 24, 1984.

When labels are used, the 17 digit VIN must be printed indelibly, and the label permanently affixed to the part. If the label is removed it must self-destruct by tearing or making the VIN illegible. Removing the label

must also alter the appearance of the area where it was affixed -- to leave evidence that a label was originally there. Any attempts to alter the number on a label must leave traces of the original number. Standards also apply to new replacement parts.

Manufacturers met the requirements for the major parts of designated high theft car lines with adhesive backed labels purchased from three suppliers. In accordance with Section 604(b)(1) of the Theft Act the cost of marking engines and transmissions was not taken into account in estimating the cost of parts marking.

Using a detailed production analysis process and factors to estimate the consumer cost, the highest cost to a manufacturer was found to be $3.35 per passenger car. The estimated highest cost to purchasers is $5.49 per car. These values are in 1988 dollars. The Theft Act stipulates that a manufacturer's cost may not exceed $15 (1984 dollars) per car, which when adjusted by the Consumer Price Index as specified in Section (604(c)(2)(B) of the Act, comes to $17.09 in 1988 dollars. The highest estimate is less than 20 percent of the limit. In 1988, at an average of $4.14 per car, parts marking cost consumers $15,400,000.

Although the benefits of parts marking so far have not been measurable, the minimum monetary threshold values necessary for the standard to be cost effective can be estimated. At an annual cost of marking just over $15 million to the consumer, and a cost of $5,000 for an average vehicle stolen in 1988, thefts would have to drop by 3,000.

During the course of gathering information from police auto theft units, it became clear from their investigation of chop shop and related operations that various attempts were being made to remove adhesive VIN labels. A series of tests were conducted to determine whether complete removal of both the label and the adhesive was possible. While the tests did not include every possible chemical and/or physical removal process, in one instance it was possible to completely remove the label and the adhesive. These tests may have been conducted on early, since improved, labels and this potential problem is currently being studied to determine if regulatory or statutory changes are necessary.

Arrest and Prosecution

The number of persons arrested for motor vehicle theft has risen dramatically since 1984. More than 208,000 arrests were made, nationwide, for the theft or attempted theft of a motor vehicle in 1988.

No national prosecution data are as yet available on cases involving the parts marking standard. Based on statistics from several states it is estimated there are no more than 35,000 motor vehicle theft cases each year resulting in convictions and 50,000 convicted defendants. Twelve thousand (one fourth) of the convicted defendants serve a year or more in prison. With 1.2 million vehicles stolen per year the odds for being arrested and serving more than one year in prison are 1 in 100.

The 180 Federal cases which were prosecuted under the new sections of the 1984 Theft Act involved 258 defendants and resulted in 114 convictions and 159 convicted defendants. There were 1,111 cases (1,740 defendants) filed under existing U. S. motor vehicle theft related sections, which resulted in 927 convictions and 1,428 convicted defendants during fiscal years 1985 through 1989. These cases are primarily brought after major FBI investigations.

Even though no statistical analyses are possible so far, a number of cases were obtained where marked parts were used in the apprehension, arrest and prosecution of car thieves. Clearly, investigators have been able to use labels to advantage in chop shop cases, inspections of salvage yards, steal to order operations, and insurance fraud.

Most of the investigators have their hands full processing motor vehicle theft cases. A survey of state and local enforcement and motor vehicle administration (MVA) investigators, and district attorneys found that while investigators are well informed about the parts marking requirement, there are not enough people to inspect salvage yards, dismantlers, wrecking yards, body shops and car dealers. MVA investigators conduct

random on-site inspections for the purpose of monitoring compliance with licensing requirements.

Some theft investigators reported that the vehicles frequently stolen in their local areas did not match what are considered "high theft" vehicles nationally. They identified older cars, light trucks and 4-wheel drive vehicles as more frequent targets.

In general, local law enforcement agencies look with favor upon a Federal parts marking requirement. Many believe VIN markings on parts help investigators trace and recover stolen cars. Some would, however, prefer that the VIN be engraved, etched, or stamped on a part.

The inadequate number of auto theft investigators was often mentioned as a problem. While most urban areas have auto theft investigators organized into special units or as part of auto theft task forces, there are many jurisdictions which consider auto theft a low priority because the drug crisis and violent crime are consuming most of their resources.

Insurance Premiums

Motor vehicle thefts are covered under the comprehensive portion of insurance policies. Comprehensive also includes coverage for floods, fires and vandalism - events not related to collisions. Based on information supplied by insurers in response to the reporting standard promulgated under the Theft Act, thefts represent about 40 percent of the cost of comprehensive claims. Comprehensive premiums amount to about 15 percent of the cost of automobile insurance, including liability and collision coverages.

A study of ratemaking, premiums, theft claim payments and other aspects of auto insurance, was prepared for this report. Most insurers, when filing State submissions, set rates based on the total loss experience for comprehensive claims. Theft loss claims are not usually considered.

Many factors affect insurance rates: car price, repair cost, performance features, use, garaging (location), driver age, sex and record. In addition, State regulation or lack thereof shapes competition. Some States require that rates be submitted for information only; others approve rates before they can be used. In a few States the insurance commissioner sets the premium rates. Before establishing the premium rates for comprehensive coverage, most insurance companies determine how much is needed on a Statewide basis to cover their anticipated claims payments, expenses and profit. Then they distribute the difference between what they collect currently and what they need to collect from policies in the State, based on population density territories.

While theft losses amount to 40 percent of comprehensive claims payments and only 6 percent of all auto insurance claims, they do constitute an implicit basis for setting rates. Analyses of insurer claims payments may provide a better indication of the effectiveness of the parts marking requirements in reducing the costs for providing theft coverage, and therefore, reducing the basis used to determine premium rates. The average claim payments for passenger cars that were new in the respective calendar year are as follows (in 1988 dollars):

Average Theft Claim Payments
Current Model Year Passenger Cars
(1988 Dollars)

	1983	1984	1985	1986	1987	1988
High Theft Cars* [*Marked in 1987 and 1988]	12,705	12,547	12,472	11,602	11,491	13,524
Unmarked Cars	9,429	9,617	10,017	9,374	8,929	8,848

Source: Claims Data Supplied by HLDI

Loss payments for marked cars rose by 17 percent while those for unmarked cars dropped by 9 percent between 1987 and 1988. Data from insurance

sources showed more damage and more missing parts on recovered 1988 cars with marked parts relative to cars without marked parts. While the trends run relatively parallel through 1987, they begin to diverge in 1988.

Another measure was developed to estimate the expected cost to insurers for providing annual theft coverage for each vehicle, exclusive of profit, administrative and other expenses. It is defined as the amount of money paid out for auto theft for each vehicle insured under comprehensive coverage. It is calculated by multiplying the average cost of a theft claim times the theft claim frequency. Expected cost values were calculated for new and one year old marked and unmarked passenger cars for each of the six calendar years 1983-1988.

As was done for theft rate trends, a correction factor for pre-existing trends was calculated and comparisons were made to see if there were statistically significant differences in the expected cost trends for marked cars and unmarked cars. The results showed there were no significant differences between the expected cost trends of marked and unmarked cars -- both were actually increasing.

Base premiums disaggregated by whether or not a car contained marked parts were not available. Since premiums could not be determined for marked cars exclusively, premiums for high-cost cars were used as a proxy measure. Based on a review of new car prices, cars with marked parts tend to be high-cost cars. The difference in premium costs are based primarily on the cost of the car. Premium trends of "high cost" and "low cost" cars were compared in rural and urban car areas for the period 1983 to 1988. Comprehensive premiums for low cost (more likely unmarked) cars in rural areas remained virtually unchanged. In urban areas, the comprehensive premiums for high priced cars rose an average of $41 a year. The increases observed in premiums may indicate a correlation between car theft rates and premium rates. If the parts marking standard is effective, and as more marked cars become insured, then there could be a drop or at least a leveling of premiums for high-cost cars in urban areas.

So far, insurance companies report that they give credits or comprehensive premium discounts only for passenger cars equipped with theft deterrent devices. Both credits and discounts (from 5 to 20 percent) were offered in selected states or when required by law. Companies report they support and cooperate with state and local enforcement agencies in sting operations and fraud investigations; provide incentives to policy holders for installing antitheft devices and etching VIN's on glass and other parts; provide information and generally advocate theft prevention practices.

The Condition of Recovered Vehicles

The insurer reporting requirements standard calls for the classification of recovered passenger cars into intact (no major parts missing, no damage), in whole (no major parts missing, but with damage and other parts missing, i.e., seats, radios, etc.), or in-part (one or more major parts missing, irrespective of damage) categories. While certain analyses can be made using these classifications as indicators of the parts marking effect, data are limited to one year (1986) before the standard took effect and two years thereafter.

The condition of recovered stolen cars for calendar years 1986 through 1988 were obtained from a sample of seven insurance companies. The recovery rates for "in-part" recovered marked cars was compared to that of unmarked cars before and after the standard took effect. One indication that parts marking has had an effect would be a significant reduction in cars recovered in-part, because that would mean fewer thefts for chop shop operations. The proportion of cars recovered in-part declined equally for marked and unmarked cars.

The Adequacy of Theft Laws

It is difficult, or at least premature, to make definitive statements about the adequacy and effectiveness of Federal and State laws that are

designed to prevent the distribution of used parts removed from stolen motor vehicles.

Clearly the 50 or so cases that are filed each year under the sections created by Title II - Antifencing Measures, of the 1984 Theft Act can by themselves only have a small impact. Even if the cases filed under previously enacted legislation (sections 2312 and 2313 of title 18, USC) are included, the annual total is 250 Federal cases yielding slightly over 200 case convictions. The State and local burden is considerably greater -- it is here where cases involving motor vehicle thefts and stolen parts sales are prosecuted.

The efforts by the various state and local government associations, privately funded organizations, legislators, police agencies, insurance companies and others in the private sector have made substantial progress in creating laws and statutes dealing with titling, inspections and licensing of vehicle and parts businesses. They are also trying to achieve uniformity among statutes.

So far it is estimated that there were fewer than 2,000 convictions nationwide involving cars with marked parts, and it is not known in how many cases the VIN marking aided the prosecution.

The Adequacy of Tracking Systems for Theft Investigators

The view of motor vehicle theft investigators who "operate" the systems available for tracing parts is critical to any assessment of adequacy. On-site interviews were conducted with law enforcement officials in eight large cities: Boston, Chicago, Denver, Detroit, Houston, Memphis, Miami, and San Diego, and with the Louisiana State Police.

They say that while the professional thieves appear more cautious when confronting the cars with marked parts, they will steal them anyway and will either hide them, intersperse them among other parts and/or eradicate the label and footprint. So far investigators say the standard has not

been effective in reducing the number of cars stolen in order to remove parts for sale.

According to law enforcement officials a growing motive for auto theft is to obtain specialty items such as radios, wheels, seats, "t-tops", and other high value, quick sale accessories to fund drug habits, but it is not clear whether this problem is displacing the chop shop operation.

Investigators believe parts marking is useful and will become even more so in detecting and recovering stolen cars and parts, and improving chances of successfully prosecuting offenders. They do not think it will deter auto theft.

There is a common concern that adhesive labels are not adequate since law enforcement officials report having discovered stolen parts, that should have had labels, with their labels removed. They strongly recommend etching, engraving, stamping or other more permanent methods. They would like to see the standard extended to light trucks, vans, and multipurpose vehicles and to items such as entertainment electronics, seats, wheels and similar quick sell accessories.

The investigators want uniform, better titling laws and laws that require inspections by trained police officers. Moreover, investigators want more enforcement resources. It is estimated that there are probably less than 3,000 officers doing auto theft investigative work nationwide. This equals six-tenths of a percent of the nearly half million sworn police officers nationwide.

Benefits of Parts Marking to Other Classes of Motor Vehicles

If the current parts marking system reduces the theft of "high theft" passenger cars, increases recoveries, and meets the other objectives of the 1984 Theft Act, then the extension of marking systems should be considered for all passenger vehicles, light trucks, vans and multipurpose vehicles.

Light trucks (including vans and MPV's) have the lowest theft rate, but are under-represented when it comes to recoveries. Thefts of these vehicles are rising more rapidly than thefts for other vehicles.

Motorcycle theft rates are high, but the number of thefts only represent slightly over five percent of all motor vehicle thefts in 1988.

Heavy trucks have the highest theft rate, but only represent two percent of registrations. Over 80 percent are recovered each year. Heavy trucks are often stolen for their contents, rather than for parts or export.

CONCLUSIONS

The Department has, in accordance with Section 614(b)(1) of the 1984 Theft Act, prepared a report with the information specified. The Theft Act required a series of analyses to determine the effectiveness of parts marking in reducing theft rates and insurance premium costs. The effectiveness of the parts marking standard, especially in its present form, may not be measurable. This is due mainly to the requirement that high theft car lines are subject to parts marking which prohibits establishing a reasonable control group. This constraint will affect future analyses as well, because the high theft and the control group of low theft (unmarked) car line populations will continue to be affected by different theft motives. There are alternative approaches, such as randomly marking car lines, that would allow conventional analyses, thus overcoming the primary constraint. Such approaches would require statutory action to allow the agency such flexibility. It is also not possible to identify the motive for theft from the available theft data, that is whether the theft is for profit or for other purposes. Any changes measured are for all motives combined.

The relationship between car theft claims and comprehensive insurance premiums is tenuous, thus preventing premiums from being a useful measure of effectiveness. Theft claims represent only a portion of comprehensive claims, and losses stemming from other types of claims may be considered in setting premium rates.

Enforcement officials, especially auto theft investigators, support parts marking. They believe it is a valuable tool. Many recommend more permanent methods such as engraving, etching or stamping, to identify and recover stolen cars.

In summary, the effectiveness of the theft prevention standard can not be ascertained from analyses of available data sets. There is, however, wide support for parts marking in the law enforcement community. In view of these findings and after considering public views, the Department recommends that the theft prevention standard be continued with several minor changes including authorizing the Department to allow: (1) designating high theft car lines based on a median theft rate using the most current year's available data; (2) redesignation of a car line from high theft to low theft based on actual theft experience; and (3) exemptions for an unlimited number of car lines per manufacturer for antitheft devices.