

BCS MONOGRAPH SERIES

edition 7

CONSPICUOUS DEPREDATION: AUTOMOBILE THEFT IN LOS ANGELES, 1904 TO 1987

J. B. Thomas

Ph.D. Candidate at Carnegie-Mellon University

124659

U.S. Department of Justice
National Institute of Justice

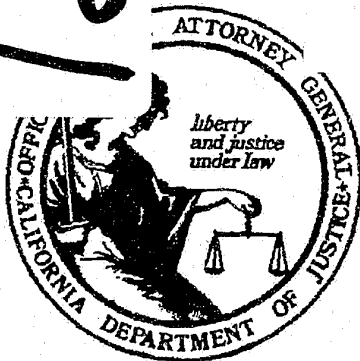
This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated in this document are those of the authors and do not necessarily represent the official position or policies of the National Institute of Justice.

Permission to reproduce this copyrighted material has been granted by
California Department of Justice

to the National Criminal Justice Reference Service (NCJRS).

Further reproduction outside of the NCJRS system requires permission of the copyright owner.

124659/659h21



Office of the Attorney General
California Department of Justice
Division of Law Enforcement
Criminal Identification and Information Branch
Bureau of Criminal Statistics and Special Services

MARCH 1990

CONSPICUOUS DEPREDATION: Automobile Theft in Los Angeles, 1904 to 1987

by J. B. Thomas

CRIMINAL JUSTICE TARGETED RESEARCH PROGRAM

In an effort to increase the comprehensiveness and quality of criminal justice research in California, the Attorney General developed the Criminal Justice Targeted Research Program within the Bureau of Criminal Statistics (BCS).

The key goals of this effort are to:

- Make better use of the criminal justice data collected and maintained by BCS;
- Forge stronger ties between state government and the research community; and
- Contribute to sound policy development in the field of criminal justice.

The Criminal Justice Targeted Research Program is a unique effort to achieve these goals. Each year, the Attorney General selects two or three doctoral candidates and post-doctoral or senior fellows to undertake a research project of their design. The fellows work closely with BCS staff, effectively blending their special expertise in research design and methodology with the technical expertise found in BCS.

J. B. Thomas graduated in 1984 from Indiana University of Pennsylvania, received his Masters Degree in History from Carnegie-Mellon University in 1987, and is currently a Ph.D. candidate at Carnegie-Mellon University. His doctoral dissertation focuses on the social history of the automobile in the United States.

The interpretations and opinions expressed by the author do not necessarily reflect those of the Department of Justice or its officers and employees. This report was produced to encourage discussion and additional research on issues concerning crime and society.

Additional copies of this monograph may be obtained by contacting: Bureau of Criminal Statistics, P.O. Box 903427, Sacramento, CA 94203-4270, (916) 739-5166.

TABLE OF CONTENTS

| | |
|---|----|
| INTRODUCTION | 1 |
| The 1980s | 2 |
| A Multitude of Players | 2 |
| California's Affair with the Automobile | 3 |
| The Search for Evidence | 4 |
| Nobody Walks in LA | 5 |
| LONG-TERM PATTERNS OF AUTO THEFT | 6 |
| A Play in Two Acts | 6 |
| Other Crimes — Similar Trends | 7 |
| THE ERAS | 8 |
| A Quiet Genesis | 9 |
| Thank You, Mr. Ford | 9 |
| "Why" the 'Twenties Roared | 11 |
| Depressed Crime | 12 |
| WWII — While Rosie was Riveting | 13 |
| The Lull Before the Storm | 13 |
| Up the Mountain | 14 |
| FIGHTING CRIME | 15 |
| Target-Hardening | 15 |
| Police Protection | 15 |
| Automobile Theft Laws | 16 |
| THEFTS AND THIEVES | 17 |
| Finders, Keepers . . . Losers, Weepers | 18 |
| Arresting the Tip of the Iceberg | 19 |
| CONCLUSIONS | 21 |
| TIMELINE | 25 |
| TABLES | 31 |

CONSPICUOUS DEPREDATION: AUTOMOBILE THEFT IN LOS ANGELES,¹ 1904 TO 1987

INTRODUCTION

"While I still have got breath in my lungs, I will tell you what a dandy car you make. I have drove Fords exclusivly [sic] when I could get away with one. For sustained speed and freedom from trouble the Ford has got every other car skinned and even if my business hasen't [sic] been strickly [sic] legal it don't hurt anything to tell you what a fine car you got in the V8.

Yours truly,
Clyde Champion Barrow"²

There is a certain dramatic appeal to crime stories. Hollywood has long taken advantage of opportunities to glamorize those who defy society's laws and standards of behavior. *Bonnie and Clyde* are as good an example of this pattern as any. Few car thieves could claim

the notoriety that they did. The reality of automobile theft,³ however, is unlike the tale of Bonnie and Clyde. Since the introduction of the automobile, most car thieves did not steal cars to commit other crimes and make the quick getaway. Indeed, they rarely stole a vehicle to profit by resale or stripping for parts. Historically, the car thief most often committed this crime for short term transportation or a brief joyride. This conclusion is based on an extensive examination of automobile theft trends in Los Angeles, California over the past eighty-odd years.

While both the automobile and crime are subjects that generate prodigious amounts of popular and scholarly historical discussion, literature that examines the intersection of the two over time is virtually nonexistent. A first study naturally will raise many more questions than it will answer, although it may serve as a starting point for further inquiry.

¹ All references in this report to "Los Angeles" denote the city of Los Angeles.

² Letter from Clyde Barrow to Henry Ford, dated April 10th, 1934. Reprinted in Tony Thacker, *The Deuce: A Formal and Sporting History of Ford's First V8 and the Model B* (London, 1984), p. 145. Bonnie Parker and Clyde Barrow were killed on May 23, 1934 in a stolen Ford V8 sedan, riddled with 107 bullets.

³ Throughout this paper I use the term "automobile theft" instead of the broader and currently more correct "motor vehicle theft" because, for much of the history of this crime, the majority of vehicles stolen were automobiles not trucks, buses, or trailers. Until the 'seventies, well over 90 percent of the vehicles stolen were automobiles. By 1987, nearly a quarter were trucks.

The 1980s

In the late 1980s the crime of automobile theft in California increased at what was thought to be an unprecedented pace, as noted in some recent headlines.

*Grand Theft Auto —
Emotional Costs Run High*⁴

“L.A. Area Tops in Auto Thefts”

*“Led by Auto Theft —
Crime Jumps 8.2% in 1st Quarter”*

*“An Almost Perfect Crime —
Car Theft Rates Rise Sharply”⁴*

Some statistics:

- From 1980 to 1988, while most other categories of crime were declining in California, the number of total vehicle thefts grew 53 percent.
- In 1988 a vehicle was stolen every two minutes in California, and
- The average vehicle owner faced one chance in 93 of having a car stolen in 1988, up from one in 112 in 1979.

Yet these startling increases are not without historical precedent. In a similar eight-year period, from 1920 to 1928 in Los Angeles, the number of autos stolen increased 924 percent. An inquiry into some of the historical patterns of automobile theft may establish some standards by which changes in crime patterns, particularly automobile theft, can be judged.

A Multitude of Players

While often described as a “victimless crime”, largely due to the perceived easy replacement by insurance companies, automobile theft is in reality an elusive problem with far-reaching implications that affect many interests. First, the victim of the crime suffers the loss of his/her vehicle and often bears all or part of the cost of replacement or repair. Holders of insurance carry the burden of higher insurance rates. Law enforcement is saddled with the task of investigating automobile thefts, which make up a large part of the total crimes reported. The judicial and correctional systems allocate a great deal of time and resources to the trial, detention and rehabilitation of both juvenile and adult offenders. Ultimately, these costs are passed on to the taxpayer. The insurance industry also must investigate theft-related claims and make compensation to the victims. Auto manufacturers, at least in theory, must respond to the need for theft protection devices to deter theft.

A long range investigation into this extensive problem yields several benefits. First and foremost is a sense of the relative scale of this problem gained by tracking how it has changed over time. Also, the identification of sociological factors that contribute to changing levels of this crime should increase our understanding of crime and can perhaps point to some remedies. Charting the characteristics of the offenders of the past may illuminate the links between such features as age, race/ethnicity and crime. Finally, the perspective gained by such a study may give policy makers some idea of what to expect for the future.

⁴ In order of appearance:

Los Angeles Times, June 19, 1987, p. 1.

Los Angeles Times, April 14, 1988, p. 2.

Los Angeles Times, April 23, 1988, p. 10.

Newsday, September 25, 1988, p. 7.

California's Affair with the Automobile

No other state's history is so completely interwoven with the automobile. It is nearly impossible to imagine the California landscape minus the freeways, suburban tract housing, shopping malls, and, indeed, smog. California has long been considered the trendsetter in anything having to do with the use of the automobile. Lee Iaccoca recently said, "California is really the mirror into the future. Sometimes we don't like everything we see when we gaze into that mirror, but we'd be crazy if we didn't take a good, hard look."⁵

Since the early decades of this century, California was consistently among the leading states in numbers of autos per capita, new car sales, and in miles of paved roads. Relatively prosperous and prone to seemingly endless growth, in California this mode of personal transportation caught on quickly and deeply. Favorable climate and good roads also promoted automobility. Early on, California became "known as a bottomless pit for automobile sales", according to one prominent historian of the automobile. "A lifestyle based on mass personal automobility first developed in Southern California, and nowhere in the world has mass motorization been more pervasive in its impact."⁶

Perhaps most critical to this relationship was the timing of growth. Unlike older giant states such as New York or Illinois, California, for the most part, did not experience massive population and the concomitant economic growth until the twentieth century. (See Table 1 on page 31). Instead of cities and towns adapting to the automobile, they grew up with it and experienced a remarkably symbiotic relationship. Californians were heavily

dependent on this particular piece of technology, much more so than in most other areas of the country. This pattern remains consistent throughout the twentieth century. For example, in Los Angeles County:

"the level of mass motorization, as measured by the ratio of motor vehicles to people, has not greatly increased in over half a century. Los Angeles County had one motor vehicle for every 2.85 persons in 1929 and one motor vehicle for every 1.7 persons in 1979, to lead the nation in automobiles per capita at both dates".⁷

The spatial landscape of California's cities (except perhaps San Francisco) grew up around and was determined by two critical transportation mechanisms: first the streetcar routes, then the freeways. For example, in Los Angeles, housing emerged around streetcar lines radiating towards several major points. Later, the major freeways would follow similar routes.⁸ Decentralized industry and housing made for the lower population densities and the coreless cities that we commonly associate with horizontal urban areas. For those living in the metropolitan sprawl, use of an automobile would determine one's integration into both the economic and cultural environment. Access to an automobile in this new urban landscape meant the ability to move into less congested, recently constructed housing. The automobile afforded people at all levels of society greater choice as to where they worked, and to follow opportunity. For the first time for many Americans, it provided an opportunity to use leisure time in new ways, especially travel to previously unreachable places. These new spatial configurations placed a premium on the automobile. By the 1920s, Los Angeles was in

⁵ Lee Iaccoca, *Iaccoca: An Autobiography*. (New York, 1984), pp. 159-160.

⁶ James J. Flink, *The Automobile Age*. (Cambridge, MA, 1988), p. 140.

⁷ *Ibid.*, p. 143

⁸ Martin Wachs, *Autos, Transit, and the Sprawl of Los Angeles: The 1920s*. *American Planning Journal*: vol. 50, 1984.

many ways a prototype of the modern city. For these and other reasons born of expedience, the nexus of this study is Los Angeles.

The Search for Evidence

Selection of a data source for this study is critical. Since no historical study of automobile theft exists, either nationally or in California, the most pressing need is to locate a source of data presented in a consistent manner for an extended period. Unearthing suitable longitudinal crime data is a difficult and often frustrating task: many police departments kept limited records or, more frequently, discarded them. Today, finding a locale where a complete data set is available for an extended stretch of time is a near impossibility.

Nomenclature is also a problem. For the first 28 years of this century, auto theft in California was categorized under the heading of grand larceny, making it impossible to differentiate between other large-scale thefts and automobile theft. It was separately recognized in 1930, thanks mostly to the standardization brought about by the introduction of the FBI Uniform Crime Reports (UCR) system. Unfortunately, this did not bring an end to difficulties.

Foremost among data obstructions was the pattern of duplicate reporting caused by the various law enforcement bodies whose overlapping jurisdictions bloated automobile theft totals. An automobile stolen in San Jose and recovered in Oakland might be reported by the police department in each city, by their respective county sheriffs and by the California Highway Patrol. This over-counting caused by the lack of cross-indexing skews any attempt at establishing statewide totals until at least the 1950s and possibly later.

The degree of emphasis placed on record keeping varied tremendously among law enforcement agencies charged with making the crime reports, thus rendering area to area comparisons often unreliable. The FBI "urges caution" when using the early data collected from the Uniform Crime Reports. Other factors plague attempts at use of aggregated UCR data, some up to the present day.

The UCR system makes no distinction between automobile thefts for joyriding and commercial thefts.⁹ Scholars point out other critical problems such as uncertainties in definitions of crimes, problems in "scoring"¹⁰ the offense, and the lack of clarity due to the narrowness and inelasticity of categories.¹¹

On the positive side, the statistics that are available should be more reliable than those for many other crimes. The crime of automobile theft in all probability will be reported, unlike other crimes such as rape, petty larceny and burglary, or arson, which often go unreported or undetected for a multitude of reasons. As big ticket items, autos are immediately noticeable in their absence. The victim is motivated to report the crime promptly to the authorities and to the insurer. It is hard to imagine a consumer good with a more standardized replacement process. The processing of stolen auto claims information appears elementary compared with the more uncertain appraisals of such frequently stolen items as jewelry, electronic items, and other household goods.

The changing levels of automobile theft, measured over a long span of time, should be a meaningful indicator of the changing cycles of criminality. Some statistical categories measuring crimes such as prostitution, vagrancy, or public drunkenness are often better indicators not of criminal behavior but rather of

⁹ Commercial thefts occur when an automobile is stolen for the purpose of stripping or resale, not for transportation or joyriding.

¹⁰ Scoring is the method by which crimes are recorded, according to a hierarchy of seriousness. For example, an individual steals a car, then proceeds to rob a bank. The robbery is recorded but the automobile theft may not be, since it is the lesser crime.

¹¹ Victoria W. Schneider and Brian Wiersema, "Limits and Use of the Uniform Crime Reports," to appear in *Measuring Crime: Large-Scale, Long-Range Efforts*, ed. Doris Layton MacKenzie, et al., pp. 6-19.

changing areas of policy emphasis and the resource allocations of law enforcement.¹² While it might be argued that police activities can affect automobile theft rates, it is more likely that the impact of police is more strongly felt on arrest rates than theft rates. The total number of thefts in a given year is the most important single measure required to develop a picture of long-term patterns of automobile crime; other indicators about the nature of automobile theft will also be discussed in this paper.¹³

Nobody Walks in LA

Because of the manifold deficiencies and inconsistencies of statewide data on automobile theft, this report focuses on a single geographic area for the early history of this crime (1916-1952). Los Angeles offers several advantages over any other location or attempt to aggregate data. First, the Los Angeles Police Department (LAPD) began keeping track of auto thefts in 1916, a full 14 years before most other localities and the UCR. Also, after a brief intervention in 1923-24 by August Vollmer, the famous progressive police chief from Berkeley, heightened emphasis was placed on the gathering of statistical data. Beginning in 1925 the LAPD annual reports became exceedingly detailed. Beyond simply noting the total number of auto thefts, the LAPD catalogued such relevant items as recoveries, condition of vehicle, and comprehensive profiles of the offenders as well as many other significant details.

The automobile and this city are inextricably linked. One historian states, "The impact of the

automobile upon Los Angeles's urbanization process compared to that in other cities is distinguished chiefly by its magnitude." Its position as a model for other U.S. cities is also acknowledged. "Both critics and defenders of Los Angeles's decentralization generally concede that by 1930 the city was in many respects the prototype of the mid-twentieth-century metropolis."¹⁴

Next, no area in California and probably the U.S. had a higher level of motor vehicle ownership than Los Angeles. The city grew up with the automobile. Using 1960 population totals as a baseline, 85 percent of the urban growth of LA occurred after 1920.¹⁵ A striking average of 30 to 40 percent of total autos ever registered in California since 1914 were located in Los Angeles County, many of those in the city of Los Angeles. (See Table 2 on page 32).¹⁶ This level of registration closely parallels Los Angeles County population as a percentage of the total California population for this same period. This shows that, when compared to the rest of the state, Los Angeles has a representative share of automobile ownership based on population.

Although this study focuses on automobile theft within the city limits rather than the entire county, those autos not actually registered within the city can be considered part of a larger "at risk" group, because many owners of cars registered in the surrounding county would travel into the city daily to their places of employment.

The crime of automobile theft is well represented in the City of Angels, since it consistently exhibits a disproportionately large

¹²For discussion of this issue, see Eric Monkkonen, *Police in America, 1860-1920*. New York: Cambridge University Press, 1981.

¹³These benchmarks are recoveries, time until recovered, condition of vehicle, type of vehicle, and a whole range of characteristics of the auto thief.

¹⁴Mark Foster, "The Model T, the Hard Sell, and Los Angeles's Urban Growth: the Decentralization of Los Angeles During the 1920s", *Pacific Historical Review* Vol. 4, Nov. 1975, p. 483.

¹⁵Compared to 25 percent for Boston, 45 percent for Chicago, 38 percent for Philadelphia, and 42 percent for New York. From Scott L. Boutles, *Los Angeles and the Automobile: The Making of the Modern City*. (Berkeley, 1987), p. 256 (footnotes).

¹⁶The California Department of Motor Vehicles records total automobile registration by county, which complicates attempts to measure ownership in Los Angeles.

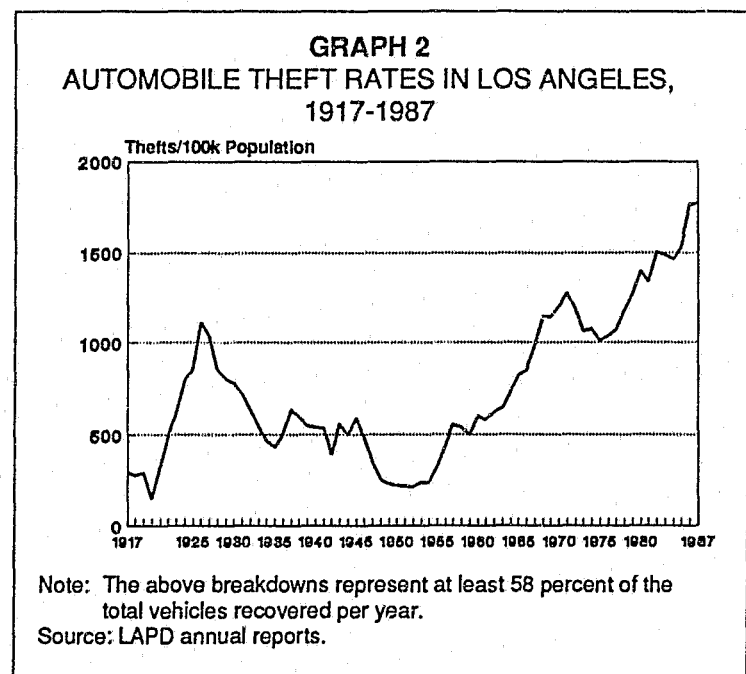
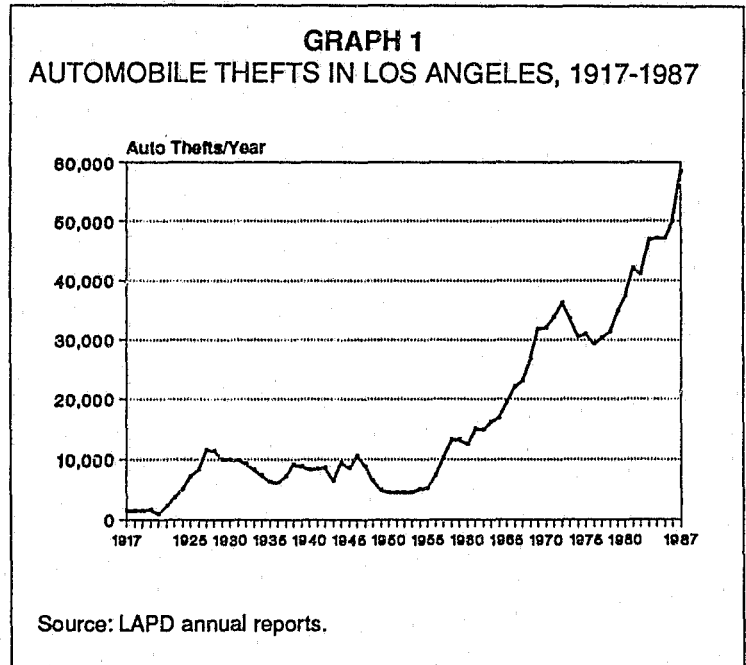
share of the automobile crime in California. Based on statewide figures, an average of 26 percent of the total automobile thefts in California occurred in LA from 1952 to 1987. The city's share of state population declined yearly from 17.8 percent in 1952 to 12.1 percent in 1987. (See Table 3 on page 33). Since automobile theft is over-represented (compared to population), Los Angeles may be considered as something of a hotbed of this crime. The conjunction of all these factors establishes Los Angeles as a fitting locale to conduct this type of study.

LONG-TERM PATTERNS OF AUTO THEFT

Two central measures are used to track this crime. First, the total auto thefts reported. This ostensibly straightforward measurement shows the total number of automobile thefts reported in Los Angeles. Second, and more important, is the crime rate. This is a ratio measuring the crimes committed per 100,000 inhabitants. The crime rate provides a relative measure of crime, unlike straight numerical counts, and allows for comparison across geographic areas and over time. Since the population of Los Angeles grew every year during this period, one-half of this measurement is continuously climbing, while the other, automobile theft rates, followed a less predictable pattern.

A Play in Two Acts

Using both measures, the story from 1916 to the present splits into two divergent chapters (See Table 5 on page 35). The first is characterized by a rapid spread of thefts in the early 1920s followed by an extended period of continuity until just after World War II. The second phase is distinguished by almost 35 years of continuous year to year increases in automobile theft with only minor lulls.



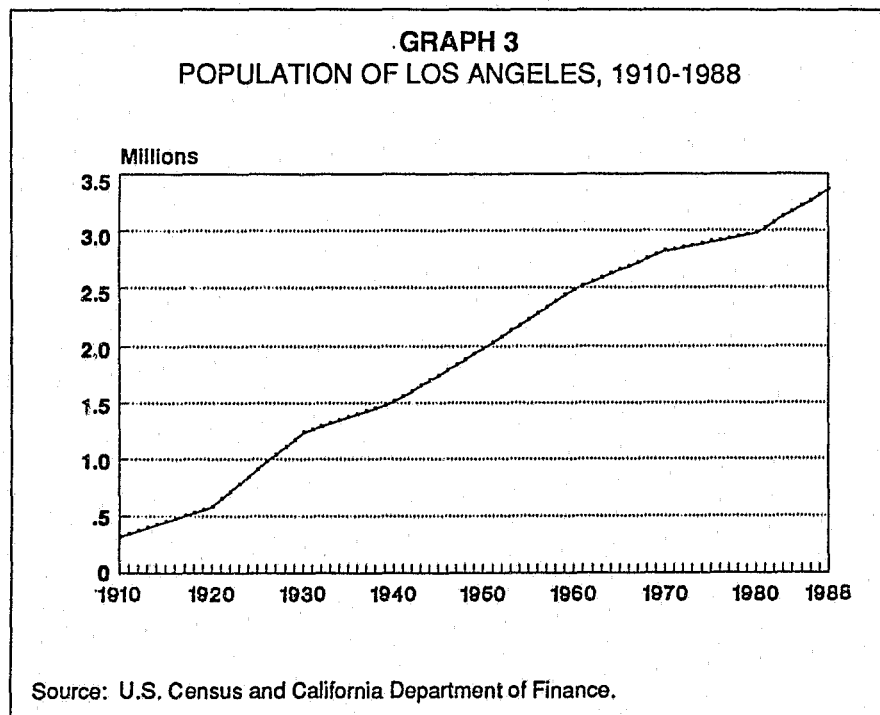
Conceptually, this is a rather unexpected finding with marked implications. Since the patterns for burglary, robbery, and automobile theft follow this general pattern, might it be inferred that American society in the second half of this century somehow fundamentally changed in a seriously pathological manner, with ever-increasing levels of crime? These findings suggest that possibility and raise difficult questions about what has brought about this change.

Since the bifurcation is so dramatic, the natural tendency is to look for some sort of major structural divergence to explain this pattern. Unfortunately, the phenomenon resists facile explanation. Population growth and demographic change are normally the first structural explanations suggested to explain changes in crime levels. However, total population continued to grow rapidly throughout both periods, while automobile crime maintained a steady pace or in some years declined. (See Table 1 on page 31). Thus any theories about increased population automatically resulting in crime increases

simply are a poor fit for the first era, especially since some of the largest population increases occurred during the twenties.¹⁷ Throughout the earlier period, automobile registrations also experienced uninterrupted growth from 1916 to the present, excepting a lag in the early part of the Depression. Patterns of population and automobile ownership, if anything, display continued growth over the entire period, as opposed to the often divergent patterns of crime. This suggests some causation outside the commonly noted structural explanations.

Other Crimes — Similar Trends

Up to this point, our discussion has been limited to the crime of automobile theft. The implications of auto theft patterns for other crime category trends would certainly be open for debate. However, since a comparable data set on burglary and robbery is contained in the LAPD annual reports, some limited comparisons can be made. Most importantly, the overall patterns for both crimes follow a trajectory similar to that of automobile theft, lending support to the above periodization. As might be expected, the two



¹⁷The largest 10-year increase in population in Los Angeles during the 20th century was 135.8 percent and occurred from 1920 to 1930. U.S. Census.

crimes against property tend to be more alike than the inherently confrontational robbery. In Los Angeles, both burglary and automobile theft rates often follow nearly parallel patterns, at almost the same level, until burglary begins climbing in the early '50s, reaching higher levels than automobile theft, then dropping below automobile theft in the very recent past. Robbery exhibits analogous contours, though at an overall lower level. The overall similarity of trends for these three crimes suggests that whatever forces influence levels of criminality also exert similar influence on all categories of crime over time. For this study, it is suggested that automobile theft rates largely fit overall patterns of crime, rather than behave as an insular category.

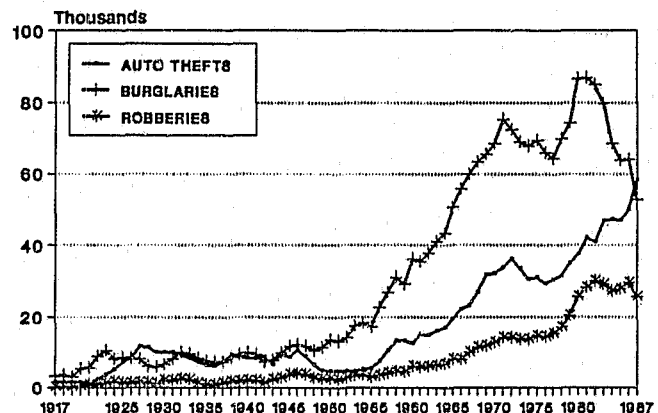
A detailed examination of seven decades of crime patterns is an exercise requiring a book length treatment. Since this report is an exploratory effort, some limitations must be set on which specific period trends can be examined. Setting such criteria is a difficult task since each decade holds a plethora of events and changes that might influence crime rates, yet the line must be drawn somewhere.

For this study an approach is used that addresses two agendas. First, an examination of automobile crime patterns during major, far-reaching twentieth century events will be made. This will illuminate the relationship of distinctive societal circumstances and crime. Second, transitional periods that demonstrate a significant divergence from previous automobile theft patterns will be investigated. Naturally, any one of these spans could bear a much more in-depth analysis than can be conducted here.

THE ERAS

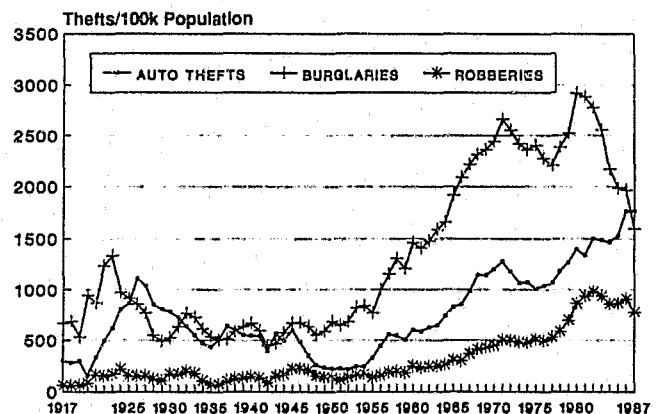
It is impossible to ascertain when the first automobile was stolen in California. The first record of a theft in California occurred in Los

GRAPH 4
BURGLARIES, ROBBERIES, AND AUTOMOBILE THEFTS IN LOS ANGELES, 1917-1987



Source: LAPD annual reports.

GRAPH 5
BURGLARY, ROBBERY, AND AUTOMOBILE THEFT RATES IN LOS ANGELES, 1917-1987



Source: LAPD annual reports.

Angeles on November 16, 1904. The car, a steamer manufactured by White Sewing Machine Company of Cleveland, Ohio, was stolen from in front of the Morton Club, just after midnight. And so it began.¹⁸

A Quiet Genesis

From the earliest sales of the automobile in 1896 to probably some time early in the second decade of the twentieth century, automobile thefts probably occurred quite infrequently. There is, however, some evidence of early recognition of the problem since legal statutes and mechanisms for replacement spring up fairly early. Automobile insurance was first offered in 1898: "to protect the motoring public mainly from losses incurred when automobiles frightened horses, marine insurance interests began offering automobile insurance contracts" which "evolved from policies created by marine underwriters and offered risk protection against damage to vehicles from fire and theft, collision, and damage to the property of other individuals."¹⁹

In California, the first penalty specifically addressing automobile theft was enacted in 1905. Section 499b of the Penal Code made any temporary taking of an automobile a misdemeanor punishable by a fine of not more than \$200 or by imprisonment for three months.²⁰ Theft for other purposes, i.e., *permanent taking*, fell under the rubric of grand larceny. Cars were exceedingly easy to steal at this time; even the most basic target-hardening devices such as ignition and door locks and vehicle identification efforts were not yet developed to deter theft. Still, this pre-WWI era probably can be seen as a grace period because the factors restricting auto theft far outweighed opportunity.

A number of convincing circumstances would almost certainly limit large numbers of automobile theft during this early period. First, relatively few autos were available. In the early days automobiles were built for the rich. The earliest California Department of Motor Vehicles (DMV) records show only 6,428 vehicles were owned in California in 1905. Only the wealthiest portion of society could afford the item and they frequently owned autos for the status attached to this novelty item. The very conspicuous nature of the vehicles would prohibit widespread crime and their very passing attracted quite a bit of attention. Since these were exorbitantly priced vehicles, someone outside of the wealthier set and dressed in something other than a chauffeur's uniform would clearly invite suspicion driving a car that sold for more than several years' average salary.

There were, of course, other limiting factors. Extremely rudimentary roads limited travel in most cases to short jaunts. Only those looking for adventure would travel any great distance since the early cars were prone to frequent mechanical breakdown. The combination of these circumstances would discourage both commercial theft and joy-riding or anyone seeking transportation.

Thank You, Mr. Ford

One can hypothesize that the genesis of the automobile theft problem paralleled the diffusion of the inexpensive, mass-produced autos, usually credited to Henry Ford and his Model T. These "flivvers" were cheap to begin with, and more importantly became cheaper every year. For example, the Ford Model T touring car dropped from about \$950 in 1910 to

¹⁸Jerry Belcher, "California Average: 2,986 A Day; Vehicle Theft Accelerates," *Los Angeles Times*, February 18, 1985, p.1.

¹⁹National Automobile Theft Bureau, 75th Anniversary Publication, Copyright NATB Inc. 1987, p. 4.

²⁰Added California Stats, 1905, ch 190, §1 p.185.

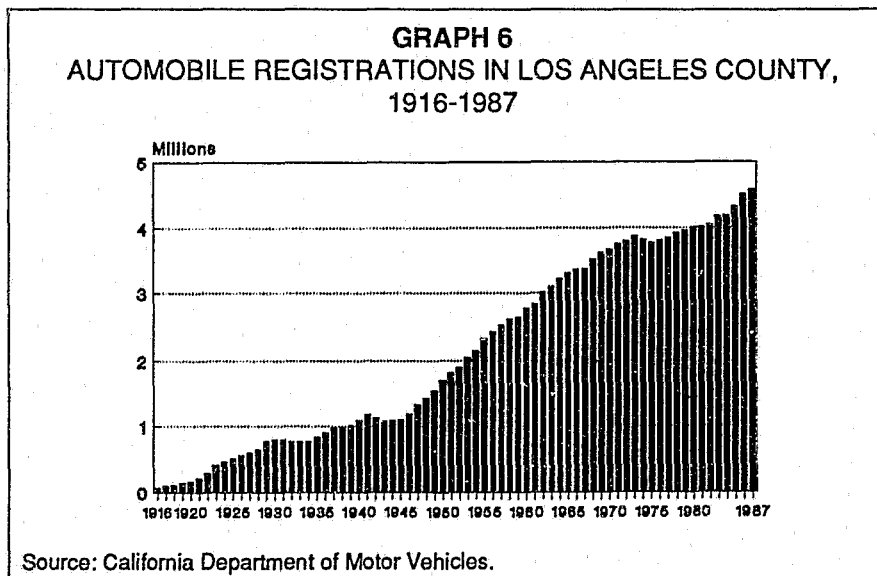
less than \$400 in 1917. In that same period the average wage for all workers in the U.S. rose from around \$600 to almost \$900 per year.²¹ These cars were reasonably dependable, easily repaired — usually by the owner — and mass produced at a rate which promoted widespread ownership and use by persons at nearly all levels of society.

In the first half of the twentieth century, no American was better known here and abroad than Henry Ford. It is somehow ironic that a man so highly regarded and credited with so much, should be indirectly responsible for the spread of auto theft. In the early days of the automobile, many automobile makers were content to continue producing high-priced autos for the wealthy. Their profits were considerable, yet many of these early auto makers were motivated by “exceedingly complex” factors, but not a desire to develop large scale production fueled by mass consumption.²² One only needs to compare the American model of automobile production with Europe where automobile makers continued targeting elite markets, and mass diffusion was delayed until after World War II. Henry Ford broke this pattern with his Model T and did more than any

other to promote the democratization of automobile consumption that would in turn make possible substantial levels of auto theft.

As a result of the new approach to manufacturing, the most significant period of automobile diffusion in the U.S. occurred following WWI and lasted until the Depression. Levels of sales would take until 1949 to surpass the pre-Depression high rate, set in 1929.²³ In Los Angeles, between 1914²⁴ and 1930 automobile registrations increased an enormous 1,771 percent, with the sharpest rise occurring in the period between 1914 and 1924. Every year in this period experienced a double digit percentage increase, and averaged annual increases of 27.2 percent. This is compared with a current ten-year period from 1977 to 1987 of 1.7 percent annual average increase. Practically what this meant is that between 1914 and 1924 the number of persons per car in LA dropped from 15.7 to 3.1. Although ownership started from a small base, no other period since has matched this burgeoning growth in automobile ownership.

Large increases in automobile ownership should not somehow imply that every family possessed



²¹James M. Laux, and others, *The Automobile Revolution*. (Chapel Hill, 1982), p. 55.

²² Donald Finlay Davis, *Conspicuous Production*. (Temple University Press: 1988), p. 2.

²³Flink, p. 131.

²⁴1914 is the first year the DMV lists auto registration by county.

an automobile and that all were equally prosperous during the inter-war era. These ratios fail to take into account those families owning more than one car. For a significant part of the population, owning an automobile remained only a desirable symbol of affluence. The dispute over levels of ownership among those lower on the economic ladder is a complicated argument destined for another venue. Suffice it to say that blue-collar ownership was primarily limited to used cars, and ownership levels varied tremendously, depending on the geographic area. Significantly, levels of ownership among lower income families were much higher in two California cities than anywhere else in the country.²⁵ Most relevant here is that diffusion to a wider swath of the population meant increased access, desirability, and impetus to steal. At this juncture the recorded history of automobile thefts begins in Los Angeles with data from the 1916 LAPD annual report.

“Why” the ‘Twenties Roared

In the late ‘teens and early ‘twenties, Los Angeles experienced a wave of automobile theft unparalleled in its history. From 1921 until 1926 the number of cars stolen increased 1,084 percent. The total number of thefts in 1926 was 11,541, which set a high in total thefts that would not be surpassed until 1957. (See Table 5 on page 35). The rate of thefts per 100,000 persons climbed from 168.9 in 1920 to 1,185.5 in 1926, setting a high mark for rates that would hold until 1970. In the face of the profound urban growth in the following 40 years, the peak reached by these high auto theft rates in the 1920s crime wave remains momentous. After this six-year ascent, the total thefts and theft rate declined gradually until the mid-’thirties.

What precipitated such an increase in automobile theft? There are a number of

possible explanations. Part of the reason the ‘twenties supposedly “roared” was because of much publicized crime sprees and gangland action. Much of this crime was the result of conflicts over smuggling and bootlegging operations during prohibition which began in 1920, about the same time automobile theft took off. But prohibition ended in 1933, and this wave of automobile thefts had already begun to taper off in 1927. Connections to Volstead Act violators seem spurious. Further, robbery and burglary rates also experienced the same striking growth in the late ‘teens and early ‘twenties although they declined several years earlier, in 1924. This supports the view widely held at the time that automobiles were contributing to all categories of crime.

In 1924 a massive report submitted to the Los Angeles City Council by Police Chief August Vollmer addressed the problem of crime, including auto theft. Some of the individual articles were written by a diverse group, which included lawyers, sociologists, and police officials. One of these articles, a summary of the group opinion of LAPD Division Commanders, commented on the impact of the mass motorization on crime:

Automobiles are unquestionably making our burden heavier. Ever since the automobile began to be commonly used, police troubles have multiplied tremendously. Criminals riding around in high-powered machines have changed their modus operandi, and even the prostitutes, bootleggers and drug peddlers now use automobiles to ply their vicious trade.²⁶

During this time it was often argued that the very nature of crime was changed by the

²⁵These cities were Oakland and Bakersfield, although Pacific coast cities in general had higher levels of ownership. John Modell and John B. Thomas, *Working-Class Automobile Ownership and Consumer Patterns*. (Article in progress).

²⁶Report noted as “group opinion of LAPD Division Commanders” published in a report to the Los Angeles City Council submitted by August Vollmer, on July 14, 1924, (page not listed). Los Angeles Police Department Archives.

introduction of the automobile. This article goes on to suggest that the foot patrolman has become a "useless ornament in residential sections" and suggests utilization of patrol cars.²⁷ In the same report, Dr. Edwin Ryland attributed the rise in crime to rampant "materialism" in modern life. In connection with the subject of auto theft he noted:

Another symptom of this same disease²⁸ is discovered in the almost universal possession of automobiles by the better to do and by many who can ill afford them. The effect on youth is tremendous. No one knows better than the Police Department how much so-called crime is centered in the desire to possess automobiles. Young boys see the finest of cars dashing about them on every hand and they lose control of themselves and become abnormal in their desire to be themselves the drivers of cars. This is another matter that would be half humorous as are the rather crude marks of smallpox or scarlet fever, if it were not the indication of a very serious social disease.²⁹

Heightened materialism may indeed play a role in twentieth century crime rates, but this proposition is unfortunately untestable. This 1924 report does suggest some acknowledgement of the problem of automobile theft at the time, though this sizable study does not recognize the problem's scale or examine it in any great detail. Often throughout the past 70 years of recorded crime data, contemporaries had little knowledge of the scale or course of change, beyond the previous year. In published commentaries by law enforcement, the insurance industry and criminologists merely reacted to the latest directional change, but

seldom offered clues as to how this variation might fit into a ten- or even five-year pattern.

Economic trends might also be suggested as contributing to this crime pattern, but the rash of automobile crime in the first six years of the decade and the gradual decline certainly do not fit the economic curve for this period. Another suggestion often made to account for the rise in automobile theft is increased automobile registration. Again, as in the case of population change for this period, registration displays a nearly continuous upward slope and is negatively correlated to automobile theft rates, which follow a more cyclic pattern. (See Graph 6 on page 10). Although a definitive explanation is unfortunately not evident for this phenomenon, the strongest likelihood is that because Los Angeles was experiencing such rapid growth, mechanisms for control simply could not keep pace. Perhaps the crime patterns during the 'twenties are not surprising in a city that experiences 114 percent population growth and 398 percent growth in automobile registration. In this case, factors related to an especially dynamic urban expansion probably resulted in an explosion of crime.

Depressed Crime

Little mention need be made of the far-reaching social, economic, and political impact of the Great Depression. Although 60 years have passed since the stock market crash of 1929, the resulting upheaval is still echoing through many areas of American society. What effect did such a far-reaching event have on crime? One might hypothesize that in time of great economic distress and unemployment crime would be rampant. This is, however, contrary to what appears to have happened in Los Angeles in the 'thirties. There was no momentous reaction in auto theft rates.

²⁷ Ibid, (no page listed).

²⁸ Referring to "endemic crime" — author's note.

²⁹ Article by Dr. Edwin P. Ryland (presumably a sociologist) published in a report to the Los Angeles City Council submitted by August Vollmer, on July 14, 1924, p. 20. Los Angeles Police Department Archives.

Automobile theft patterns in the Depression can be summed up in two parts. A decline that started in the mid-'twenties continued until the mid-'thirties. Then automobile theft rates rose slightly after 1935, though still only reaching half the peak reached in 1926. To risk a potentially too-neat decade-to-decade comparison, the average number of thefts per year in the 'twenties was 7,990 and in the 'thirties 7,970. While population and automobile registration grew, rates would then drop while the number of thefts per year remained remarkably consistent.

This decrease is surprising given a 21.5 percent population increase in Los Angeles during the 'thirties and a 35.6 percent increase in automobile registrations in the surrounding county. Burglary and robbery rates followed somewhat divergent patterns from 1929 until 1933; both showed brief increases that began earlier, but continued into the early part of the Depression. Then both rates declined and followed a track similar to automobile theft rates until the war years. The overall pattern, however, for all three crimes shows that following the crime wave of the early 'twenties, a period of distinct continuity in the overall level of crime began that would continue until the 1950s.

To find declining crime rates in the throes of the Depression appears to go against common sense, and suggests an inverse relationship between economics and crime.

WWII — While Rosie was Riveting

During WWII much concern was voiced over the increased juvenile delinquency caused by "latch-key children." These kids, left unsupervised at home after Father entered the service and while Mother worked, would supposedly perpetrate all kinds of misdeeds. For the first full year of the war, automobile theft rates showed a marked decrease, which was the

last year in a five-year downturn. (See Graphs 1 and 2 on page 6). In fact, this rate was the lowest since 1922. Then for the next three years of the war, rates climbed to levels approximating those of the late 'thirties. Judging from the increases in burglary and robbery rates at this time, it does seem likely that the level of crime in Los Angeles increased during wartime, though not at a dramatic or sustained pace. Some increase certainly can be attributed to the cities swelling from servicemen and significant immigration. Also, as was noted at the time, a sharp peak in the latter months of 1945 may be attributed to automobile thefts by returning servicemen stealing cars for transportation to travel home. It appears that the concerns about increased juvenile delinquency, at least from these measures, were overstated. It should be noted, however, that automobile theft was probably dampened by an overall decrease in car use, due to tight restrictions on use, especially gas rationing.

The Lull Before the Storm

Perhaps the largest anomaly in automobile theft patterns is the "valley" evidenced between 1946 and 1956 which acts as a divider between the two stages which characterize the past 70 years. (See Graphs 1 and 2 on page 6). From 1948 until 1954, the trend line for total automobile theft rates is almost flat. By 1948, automobile theft rates drop to levels resembling the late 'twenties. In total numbers, the ten-year average for 1945 to 1955 is 6,171 thefts per year, the lowest ten-year average since 1917-1927. This pattern diverges sharply from that followed by burglary, which began increasing gradually after 1948, then climbed sharply in 1956. Robbery's pattern is more similar to that of automobile theft, but with far less pronounced decreases.

This tranquil period comes during a time of the sharpest urban growth in Los Angeles since the 'twenties. Population and especially automobile registrations grew significantly during this same

period. Population grew at a higher rate than in the following 20 years, rising 28.1 percent from 1945 to 1955. The ratio of cars to people dropped from 3.0 to 2.2, the lowest ever and the slope of automobile registrations steepened. The observed automobile theft crime pattern runs contrary to all of the structural growth and is virtually inexplicable. It also should be noted that the automobile theft rates aggregated for all of California beginning in 1952 were examined. By subtracting those auto thefts that take place in Los Angeles, the contours of the data closely parallel rates in the state. Thus, trends in the City of Angels should apply to the surrounding state.

Up the Mountain

This ten-year interlude proved to be a lull before the storm. Beginning in 1956, automobile theft rates began a climb that has steamed almost exclusively upward for the last 30 years, thus beginning the second phase of our story. This continuous upward trend diverges from the cyclic, yet consistent, pattern for the previous 30 years. The phenomenon (and its relationship to the earlier patterns) goes virtually unmentioned in literature on automobile theft and mostly unnoticed by all types of authorities, since most studies are relatively shortsighted with respect to crime trends.

From 1956 to 1987 the number of yearly automobile thefts increased 479 percent. Only in seven of those years did thefts decrease, compared with a similar 31-year period (1924-1955) which contained 17 years that decreased from the previous year. The theft rate quadrupled during this span, from 451 to 1,796 thefts per 100,000 population. The trendline's slope (the pace at which theft increased) is not as steep as the explosion in the early 'twenties, but this earlier climb was of limited duration.

Although there is much divergence in the relative levels of crime, burglary and robbery rates do show contours similar to automobile theft during much of this period. This again suggests that these crimes may be linked to the same causal forces.

Finding an explanation for this continuously upward pattern is difficult. For example, a 1987 study was conducted to determine the factors behind "substantial" increases in motor vehicle theft. The report advises that "the strong upward trend in motor vehicle theft crimes is correlated with a similar increase in total vehicle registrations suggesting that increased opportunity is an important factor" and that "increased opportunity has been an important factor in the upward trend in motor vehicle theft crimes over the last ten years."³⁰ These increases in structural factors are perhaps misleading. Any five-year pattern of increase in automobile theft rates will coincide with analogous increases in population and auto registration since both display a nearly continuous upward slope (though neither grows at the same pace as in earlier decades).³¹ (See Table 6 on page 36). This could lead to errant explanations for crime patterns, for as we saw in the first phase, these structural changes were often inversely related to crime trends.

Factors like unemployment, thankfully, simply do not show this sort of continuous increase, which results in negative correlations to the aforementioned crime rates. If these structural changes, especially population and automobile registration, do indeed explain crime trends, then a fundamental societal transformation has occurred since the first half of this century where this pattern does not hold true.

With respect to automobile theft rates, this leaves us at a point that is best described as

³⁰Robert Z. Segalman, Ph.D., *Motor Vehicle Theft in California* published as a Bureau of Criminal Statistics *Outlook*, December 1987, vol. 4, number 7, pp. 2-3.

³¹Both of these measures increase more gradually in this period. From 1956 to 1987 population grows 47.7 percent, automobile registrations in the county increase 89 percent, and the ratio of cars to people drops from 2.2 to 1.8.

“sadder but wiser”. We now have an idea as to the periodization of crime for much of the 20th century in Los Angeles, with a strong possibility of broader application. However, this sketch only raises questions about causation. Many of the canons of criminology simply fail to explain trends for much of this saga. Unfortunately, finding factors that do offer explanation would require in-depth analysis of the changing dynamics of this city as well as patterns for several categories of crime. A study of automobile theft, burglary, and robbery within a given environment would presumably yield some answers as to the forces affecting these patterns.

FIGHTING CRIME

The reader will note that little emphasis is placed here on the impact of increased “target-hardening” and marking of vehicles, changing police methods, and the progressions of legal statutes concerning automobile theft. Historically, each of these issues was an interesting and potentially relevant factor affecting changing levels of automobile theft, but to a relatively minor degree. For each of the above, major reservations must be noted about their real impact.

Target-Hardening

Target-hardening, making the vehicle difficult to steal, is the most frequently mentioned suggestion for preventing theft. Yet its effect is questionable. For much of the century, anti-theft mechanisms were extremely rudimentary and easily defeated. This was in large part due to a largely unconcerned public and an auto industry

not known for its speed in developing such devices. Yet even in the last 20 years when more sophisticated anti-theft mechanisms have been implemented,³² little real effect is evidenced in ever-spiraling theft rates. Vehicle identification numbering schemes have also been introduced in fits and starts throughout the last 70 years, always promoted as a real solution to the problem — always with negligible impact since most of those stealing cars never intended to keep them. At present, criminals, whether they are commercial thieves or joy-riders, consider these mechanisms as no more than an annoying obstacle and this is in the face of increasingly “hardened” vehicles. The police, also, have long acknowledged the limitations.³³ To look for correlations of theft rates to these technological changes is futile.

Police Protection

Though automobile theft “details” have existed in Los Angeles since the early ‘twenties,³⁴ this crime has traditionally received little emphasis compared to other offenses. For law enforcement personnel, comparatively little glamor or status is attached to the automobile theft detail, and never enough manpower is available to investigate adequately each and every theft. Measured as a ratio of sworn personnel to 1,000 population in Los Angeles, the overall level of police protection has remained strikingly even over the past 80 years, staying around or just above the level of .8 officers per 1,000 population.³⁵ It is indeed an interesting finding that this measure of police protection remains so stable over such a long span of time. For the subject of auto theft and other crimes, it is significant that there appears to be little correlation between crime trends and

³²Ignition, steering column, and hood locks, all manner of alarms, kill switches and many others.

³³This is borne out in surveys of police journals for the past century. Law enforcement of course encourages the public to lock their cars and install devices, but has long recognized this as limited prevention.

³⁴The first noted in the LAPD annual reports was known as the “Auto Theft Bureau”, mentioned in report for fiscal year 1921-22. No information on staffing was mentioned.

³⁵The data on sworn police personnel was collected from the LAPD annual reports at five-year intervals.

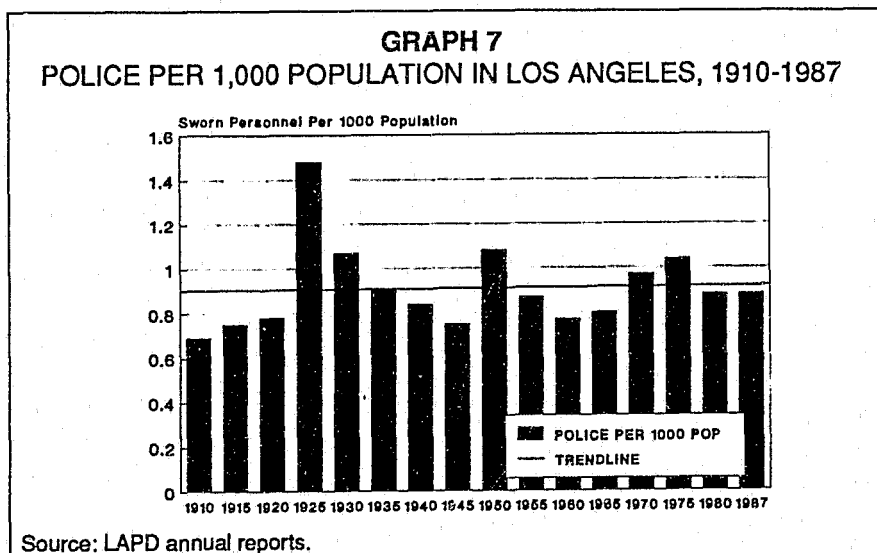
increases in sworn personnel. From this indicator it may be inferred that police protection, at least in terms of manpower allocation, is similar throughout the period under examination and that dramatic increases in auto theft rates (and other crimes for that matter) produced inconsequential policing increases. No attempt can be made here to trace other, more detailed changes in police practice and organization, but the generalization can be made that the LAPD has grown concurrently with the population in the city of Los Angeles.

Perhaps most importantly, throughout much of the period under examination, most vehicles were recovered quickly, thus requiring little investigation (this pattern will be discussed later in the report). Most of the vehicles stolen, both in the past and present, are recovered by police patrolling the streets — not those specifically investigating a particular automobile theft. These officers are likely to be advised of and looking for recently stolen vehicles from what is known as a “hot-sheet”. Stolen vehicles are most often recovered when they are abandoned and subsequently noticed by patrol cars. Because automobile theft patterns are often correlated to burglary and robbery trends, any explanation that looks solely to an automobile-related circumstance as a causal factor is doubtful. (See Graphs 4 and 5 on page 8).

Automobile Theft Laws

“Overlapping continuity” is the overall theme arising from an examination of the California legal statutes that address the crime of automobile theft. In effect, this means that although there is much clamor over which of a number of overlapping statutes are applied to any offense, the basic outlines of the legal statutes remain consistently parallel. An in-depth analysis of the evolution of statutes will not be presented here, but some major landmarks may be noted. As was mentioned earlier, the first statute specifically mentioning automobile theft was section 499b of the Penal Code, which became known as the “joy riding” statute. This statute is still considered the charge for the temporary taking of a vehicle without intent to permanently deprive the owner of his or her vehicle and has consistently remained a misdemeanor charge for auto theft until 1978.³⁶ Also as previously noted, thefts not meeting the above criteria were considered “grand larceny” until 1927, at which time Penal Code section 487 was redefined to specifically include the automobile. This statute changes little over time.

The Vehicle Code, which was created in 1913 and covers automobile theft, is the statute that changes definitions and penalties the most frequently over the past 75 years. Still these



³⁶At which time section 499b.1 was added to make joyriding a felony when the offender had a prior conviction.

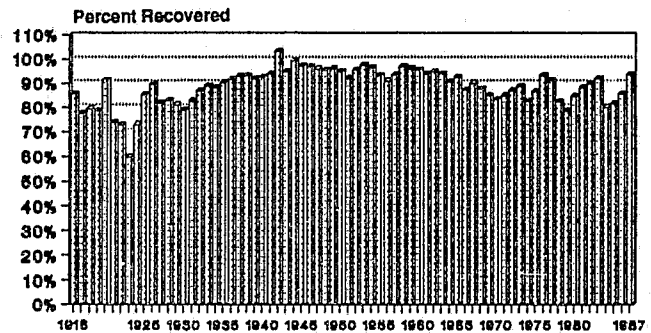
changes are mainly gradational in nature and should not largely affect how the crime is viewed by law enforcement or the criminal. Also still on the books is a federal law enacted in 1919. The "Dyer Act" made the transport of vehicles across state lines a federal offense. However, the total number arrested for this crime in Los Angeles was less than two percent of the total for the period 1927 to 1947.³⁷

There are two principal findings from this brief review of the legal statutes that affect this study. First, most of the discussion of these statutes in law review journals was concerned with the confusion resulting from the existence of three California statutes dealing with the same subject matter. This difficulty prompted a legislative review in 1957, but no changes were made. Second, the response of the legislature to sustained increases in automobile theft rates has been minimal. Overall there seems to be little connection between the periodization of crime and new statutes, at least until recently when some stiffer penalties were enacted in response to soaring crime rates and public outcry.

THEFTS AND THIEVES

Delving into the nature of the crime beyond automobile theft rates calls for an examination of some additional measures. Fortunately, the LAPD annual reports included more data than just total auto thefts, although often not as consistently as might be hoped. An examination of recovery rates, elapsed time between theft and recovery, and condition of vehicle when recovered yields somewhat startling results. Most of the automobiles were recovered quickly and in good condition. This argues for a model that attributes most automobile thefts to joyriders and persons seeking short-term transportation. While this should not be interpreted as justification for the "victimless

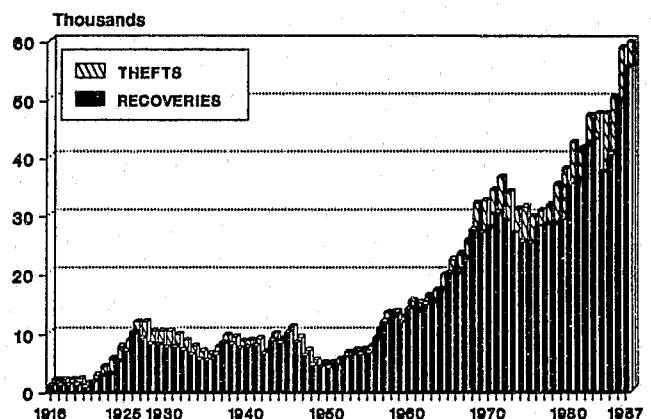
GRAPH 8
PERCENT OF AUTOMOBILES STOLEN IN LOS ANGELES AND RECOVERED, 1916-1987



Note: Recoveries for a previous year may account for totals over 100 percent.

Source: LAPD annual reports.

GRAPH 9
AUTOMOBILES STOLEN IN LOS ANGELES AND RECOVERED, 1916-1987



Source: LAPD annual reports.

³⁷LAPD annual reports included this as a category of arrest from 1927 to 1947, when it was discontinued.

crime" label so often applied to automobile theft, it does suggest some striking implications. First, a rundown of the data is necessary.

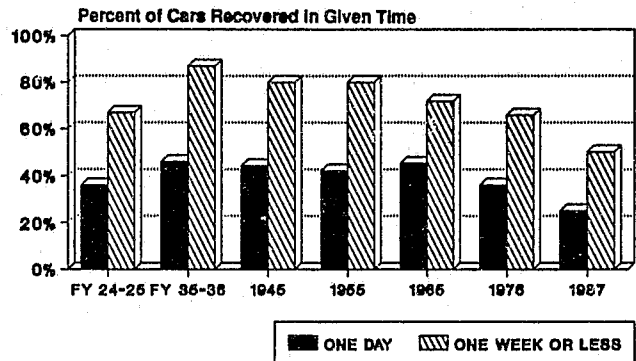
Finders, Keepers . . . Losers, Weepers

If a given car was stolen in Los Angeles anytime over the past 80-odd years, chances are that it would be recovered. (See Table 7 on page 37). An average of 89 percent of the cars ever stolen in Los Angeles were recovered. Year to year variation does exist. The average is much higher than 89 percent from 1940 to about 1965. Before 1930, recovery rates fell below this average, although there is some suggestion that the mechanisms for recording recoveries outside of Los Angeles were not fully developed. In recent years, there is a reasonably well-documented increase in what is being called commercial theft, which is supported by declines in recoveries. Still, what remains most remarkable is the consistently high percentage of vehicles recovered.

Another striking characteristic is the speed with which most automobiles were recovered. From the 'thirties until the early 'seventies a consistent 40 percent were recovered within one day of theft. While some stripping and destruction can occur within that time, it hardly connotes commercial theft or permanent taking. Further, between 60 and 80 percent of stolen autos were recovered within one week or less. A relatively small percentage of cars remain missing for more than a month, usually less than 10 percent. Finding a car quickly does not necessarily mean that it will be found in good working condition, although the longer a car remains missing the weaker the odds for a clean recovery.

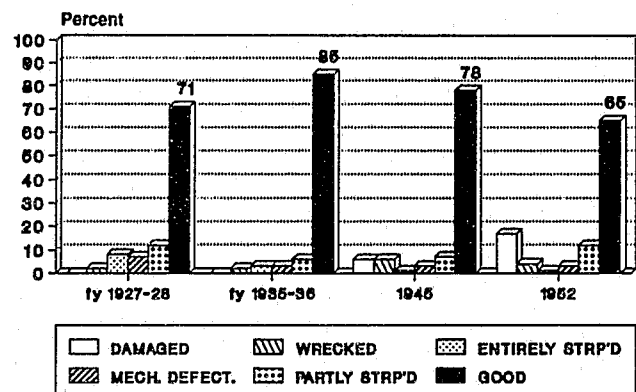
Unfortunately, the LAPD annual reports only recorded information on the condition of vehicles when recovered until 1952. For this period an average of 75 percent of the vehicles recovered were in good condition. The

GRAPH 10
ELAPSED TIME BETWEEN THEFT OF AUTOMOBILES
IN LOS ANGELES AND THEIR RECOVERY,
1924-25 — 1987



Source: LAPD annual reports.

GRAPH 11
CONDITION OF AUTOMOBILES RECOVERED
IN LOS ANGELES, 1927-28 — 1952



Note: The above breakdowns represent at least 58 percent of the total vehicles recovered per year.
Source: LAPD annual reports.

remaining 25 percent ranged from mechanically defective to entirely stripped, with all other categories usually under ten percent. For the past 30 years this pattern continues, with notable increases in stripping in the last 15 years. Most statistics measuring condition when recovered tend to be confusing and inconsistent. For all of California in 1987, 63 percent of the vehicles stolen were recovered intact. This still points to a crime dominated by joyriding, though the recent ten-year trends indicate more stripping.

Since the clearance rate (i.e., arrests connected to a specific theft) for auto theft is quite low, it is impossible to ever know for certain the purpose of the vast majority of these thefts. Combining the above measures serves as a powerful indicator. For much of this century, the vast majority of cars ever stolen were for transportation or a joy-ride.

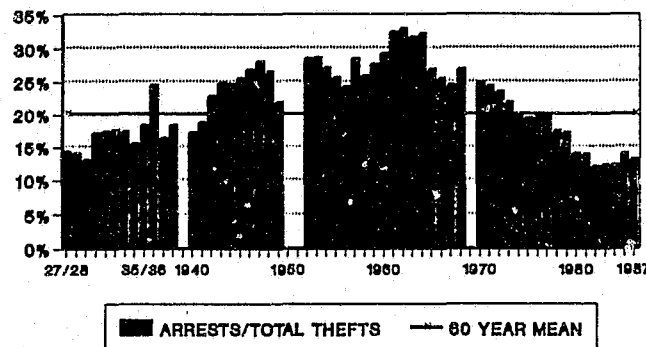
The insurance industry [principally through the National Automobile Theft Bureau (NATB) which has been around in some form since 1912] has historically been quick to point out expanding theft rates, but throughout the years when discussing automobile theft (whether in

their own publications or in journals of criminology) they rarely mention anything other than commercial theft and owner fraud. Perhaps this is not surprising. In 1929 or 1989 shocking theft rates, presented alone, go a long way to legitimizing increased car insurance premiums. The complexities of automobile theft have been ignored, at least in print, for a very long time.

Arresting the Tip of the Iceberg

Since it seems likely that law enforcement was aware, at least in the short term, of the extremely high level of recoveries, it may be inferred that fewer resources have been allocated to investigative automobile theft. Large numbers of auto thefts might attract notice when yearly crime reports are published, but with recovery rates so high and frequently so immediate the crime could easily assume a low investigative priority. Also, examining the small set of thieves arrested, and the even smaller group actually prosecuted, may be misleading. Are the thieves arrested representative of those stealing cars or do they typify the less-competent, or the habitual

GRAPH 12
AUTOMOBILE THEFT ARRESTS AS A PERCENTAGE OF
MOTOR VEHICLE THEFTS IN LOS ANGELES, 1927-28 — 1987



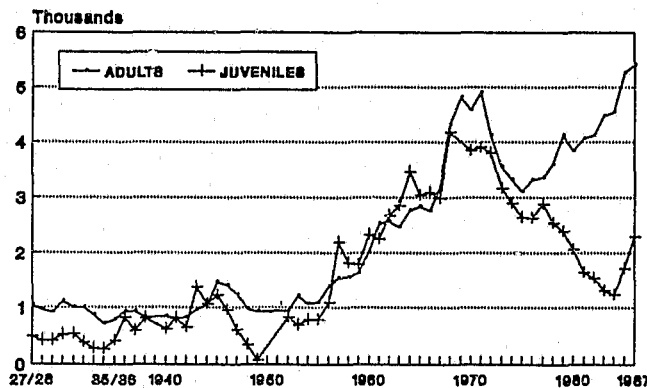
Notes: Data missing for 1939, 1950, 1951 and 1969.
 Includes both juvenile and adult arrests.
 Source: LAPD annual reports and BCS data.

offender? Does an examination of arrest patterns usher one into the realm of — some 70 years later — what are now invisible changes in police policy concerning arrest emphasis, rather than reveal patterns of criminality and actual characteristics of the auto thief? Also, when a large number of those persons who are arrested, between a third and one-half, are immediately released by the police or have their charges dropped by the prosecuting attorney it raises questions about the utility of profiling the entire recorded sample. Unfortunately, profile information is collected on all persons arrested in Los Angeles, including those quickly released. These complexities are not easily solved, but since data profiles of arrestees are the only records available, some limited inquiries can be made.³⁸

Arrests for automobile theft, for both juveniles and adults, when measured as a percentage of total auto thefts for the years 1927 to 1987, average 20.2 percent per year. In other words, for the period 1927-28 to the present an average of 20 percent of auto thefts result in an arrest.³⁹ (See Graph 12 on page 19). Interestingly, this measure begins at a level around 15 percent in the late 1920s and gradually increases to about 30 percent by 1960. After 1964 the ratio declines almost yearly until by 1980 the level is around 12 percent. Again, it is difficult to determine if this measure is a function of police resources, criminal tendencies, or some other factor.

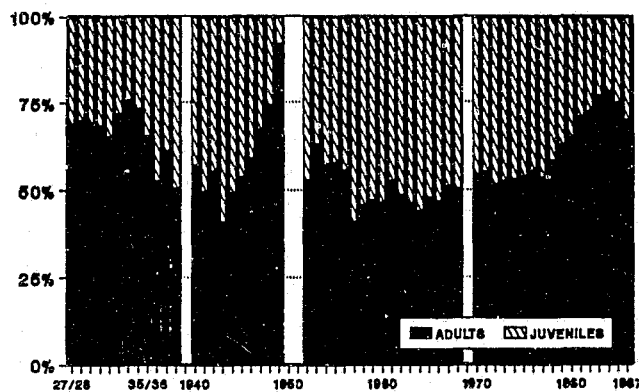
For much of the recorded history of arrests for auto theft, the ratio between juveniles and adults is split roughly in half, with both ends of the trendline showing a higher percentage of adults arrested. Again, it is difficult to interpret what these patterns actually signify, but the recent divergency (late '70s to the present) may reflect older arrestees perpetrating an increasingly

GRAPH 13
JUVENILE AND ADULT ARRESTS IN LOS ANGELES
FOR AUTOMOBILE THEFT, 1927-28 — 1987



Note: Missing data for 1939, 1950, 1951 and 1969.
 Source: LAPD annual reports.

GRAPH 14
RATIO OF ADULT ARRESTS TO JUVENILE ARRESTS,
1927-28 — 1987

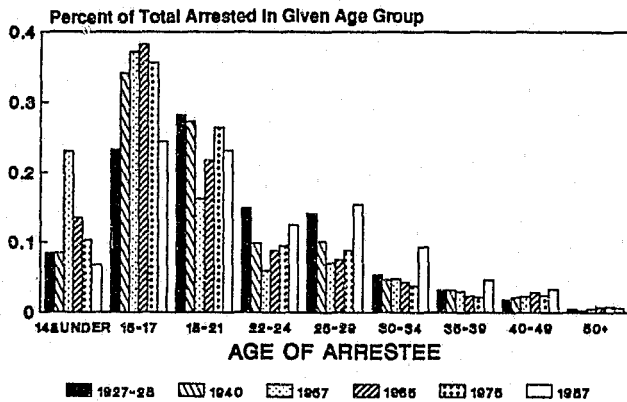


Note: Missing data for 1939, 1950, 1951, and 1969.
 Source: LAPD annual reports.

³⁸The majority of arrest data was gathered on August 4 and is pending immediate analysis.

³⁹This measure of "clearances" is rather inexact. There is no way of ascertaining whether arrestees purloined one car or 50 cars, or whether there were multiple arrests for single offenses, so something resembling an actual clearance rate by arrest is virtually impossible.

GRAPH 15
ARRESTEES FOR AUTOMOBILE THEFT
BY AGE GROUP IN LOS ANGELES



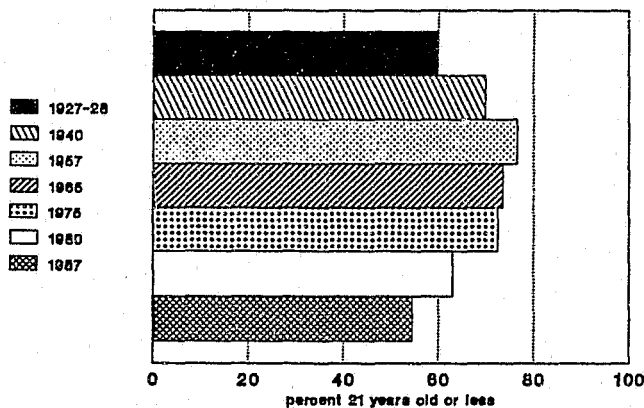
Source: LAPD annual reports.

commercial crime or it *may* reflect the shift to an older population. Finally, this measure may also portray who the police targeted for arrest and not the actual characteristics of the offender.

In regard to the age of arrestees, in the sampled years most adults were in their early to mid-twenties and juveniles between the ages of 15 and 17 when arrested. (See Table 8 on page 38). The number of persons over 30 who are arrested for automobile theft is consistently a tiny minority. In fact, throughout the sampled years, at least 50 percent, usually more, of the persons arrested were 21 years of age and under, which fits the stereotype for the youthful joyrider.

A more thorough analysis of the arrestees would certainly merit an entire study in itself. The necessary data set profiling these persons (mostly males)⁴⁰ is available in the LAPD annual reports, although not easily analyzed and tabulated due to changing methods of categorization. For the purposes of this report, the arrestee profiles indicate no divergence from the fundamental argument that most of those stealing cars over the last 70 years were young males joyriding or seeking transportation.

GRAPH 16
ARRESTEES FOR AUTOMOBILE THEFT
AGED 21 YEARS OLD OR LESS



Source: LAPD annual reports.

CONCLUSIONS

The above findings suggest a number of implications for an understanding of the crime of automobile theft. First, the long-term patterns of automobile theft, as well as burglary and robbery, suggest a periodization of crime for the twentieth century that differs from what might be anticipated. The mid-century shift from a cyclic pattern of auto theft to one of nearly continuous yearly increases pleads for closer examination. Determining what factors brought about this extraordinary bifurcation would go a long way towards strengthening our understanding of crime patterns.

⁴⁰For the years in which data are available, female arrestees account for less than five percent of the total.

The customary causal agents of changing crime patterns appear to offer little by way of explanation for the period under examination. Population growth, increases in auto registration, economic fluctuation and urban growth fail to provide a satisfactory answer as to "why" auto theft rates change. Perhaps the strongest suggestion emanating from this research is to encourage restraint when connecting any of the above to short-term change in crime trends.













With respect to the pressing need for a remedy to burgeoning auto theft in the 1980s, an acknowledgement of the peculiar dynamics of this crime must be made. For much of the past 70 years, law enforcement bodies would naturally show reticence about spending even limited resources on a problem that usually solved itself. A car was reported stolen, often recovered in working order, and returned to the owner. Is this a pattern for other crimes such as burglary or robbery? Certainly not. Since most auto thieves, over the broad

span of time, stole for something other than commercial gain, upon arrest they would be seen as something less than dangerous criminals. In most cases, these offenders were young joyriders, not hardened criminals. Indeed, in the minds of all parties involved, from law enforcement to the insurance industry and in the general public, the understanding of this crime has been shaped by the repetition of patterns which suggests that vehicles were stolen for transportation and kicks.





Yet perceptions sometimes change a good deal more slowly than reality. In the last 15 years the dominant pattern of joyriding and theft for transportation has declined to some degree, without adequate policy response. The traditional historical patterns have almost certainly shaped the vision which viewed automobile theft as a victimless crime. There is less truth to this conception than ever before, but a well-established myth dies a slow death. When will we finally recognize its passing?



**AUTOMOBILE TIMELINE:
FACTS AND FIRSTS**


AUTOMOBILE TIMELINE: FACTS AND FIRSTS







-  1885
First successful gasoline car driven in Germany — a three-wheeler built by Carl Benz.
-  1893
Charles Duryea designs first successful gasoline car in the United States.
-  1895
First auto race in America won by Frank Duryea in Chicago — averaging 5 miles per hour.
-  1896
First vehicle noted in San Francisco — by a Mr. Charles L. Fair.
-  1898
Automobile insurance first offered.
-  1899
First American garage built in New York City.
-  1900
The *Saturday Evening Post* features first automobile advertisement.
-  1901
State statutes empower counties and cities to license bicycles and automobiles.
-  1902
San Francisco Sunday Call records 117 vehicles in use in San Francisco by "some of the best known people".
-  1903
Windshield, shock absorbers, sliding transmission, and canopy top first introduced.
-  1904
First recorded automobile theft in California. A White Sewing Machine Company "Steamer" was stolen from in front of the Morton Club in Los Angeles.
-  1905
California Secretary of State authorized to register and license motor vehicles.



First official registration of an automobile in California — to John D. Spreckels of San Francisco — for a fee of \$2.00.


Other firsts include: ignition locks, spare wheels, tire chains, and cars sold on installment plan.
-  1906
Front bumpers premiere.
-  1908
Ford Model T first produced.
-  1909
First concrete rural road built — 1 mile worth in Wayne County, Michigan.
-  1910
Cadillac first manufacturer to offer a "standard equipment" closed body vehicle.

-  1912
Generator-battery powered ignition, starter, lighting system offered by Cadillac.
-  1913
First law requiring licensing of drivers passed by California legislature.


Ford initiates moving assembly line — produces 1,000 cars a day.
-  1915
First Department of Motor Vehicles in California created by the Vehicle Act of 1915 — which provided for the issuance of permanent license plates.



Demountable tire rims become standard equipment.
-  1916
Stoplights, windshield wipers, and rear view mirrors become available.
-  1918
First three-color traffic light introduced in Detroit.
-  1919
U.S. Congress passes Dyer Act providing for transportation of stolen vehicles across state lines.
-  1920
New license plates now issued annually.
-  1921
Department of Motor Vehicles becomes Division of Motor Vehicles under Department of Finance.
-  1922
Insurance policies altered to cover actual value of purchase price of automobile — instead of purchase price.

First inexpensive closed car offered — Essex Coach.
-  1923
California Vehicle Act of 1923 amends Act of 1915 and establishes Two Cent Gasoline Act and creates what would later become the California Highway Patrol.
-  1924
Traffic officers with statewide jurisdiction appointed by Chief of Division of Motor Vehicles from list submitted by County Boards of Supervisors.




One in every seven persons in United States owns a car.
-  1925
Motor Vehicle Act provides for suspension of driver privileges for reckless drivers and establishes minimum age for drivers.




More closed body cars are sold than open models — for the first time.




Front and rear bumpers become standard equipment.
-  1926
Shatter resistant glass introduced.





-  1927
Licensing law amended to require examination of applicants.
-  1929
Division of Motor Vehicles shifted to the Department of Public Works.


Licensing renewal required every two years.




California Highway Patrol created by Legislature.
-  1934
Chrysler and Desoto offer automatic transmission over-drive.
-  1935
California Vehicle Act of 1935 establishes Vehicle Code of California, which supersedes all previous ordinances.
-  1939
Running boards omitted by Ford on Lincoln-Zephyr.














Hood lock innovated under dashboard.
-  1940
Numerous auto factories convert to production of military goods.
-  1941
United States enters World War II.
-  1942
Passenger car production ends.

Gasoline rationing introduced.
-  1943
Nonessential driving banned in 17 states.
-  1944
Federal Aid Highway Act makes plans for a national interstate highway system.
-  1947
Collier-Burns Act created to raise funds for highways and freeways for California — fees increased for commercial and private vehicles and for purchase of gasoline.

California Highway Patrol becomes own department.
-  1953
Innovations introduced include air conditioning, 12-volt electrical systems and "idiot lights".
-  1954
Tubeless tires become standard equipment.
-  1955
Safety door latches made standard feature.
-  1957
Edsel introduced.

-  1959
Recodification of California Vehicle Code provides for registration of boats.

Edsel discontinued.
-  1961
National driver register service instituted to cross reference all operators' records in United States.
-  1962
Pontiac introduces fully transistorized ignition system.
-  1965
Rear seat belts become standard.

Smog control devices required for first-time registration.
-  1967
All manufacturers utilize emission control systems.
-  1968
Sending of automobile master keys by mail made a federal crime.
-  1971
Engines redesigned for unleaded fuel use.
-  1972
Chrysler offers anti-theft devices that activate horns and lights if break-ins occur.
-  1973
Arab countries break oil export to United States — energy crisis ensues.
-  1974
Innovations include: rectangular headlights, catalytic converters, and introduction of unleaded fuel.
-  1977
Fuel efficient diesel cars become popular.
-  1979
Chrysler seeks federal loan guarantees.
-  1980
Big Four U.S. companies suffer 4.2 billion dollar financial losses — many dealers close.
-  1981
Delorean sports car goes on sale.
-  1982
Delorean goes out of business.
-  1984
Big Three return to health with record profits.
-  1985
Nissan produces cars in Tennessee.

TABLES

TABLE 1
CALIFORNIA STATE POPULATION, 1860-1988

| Year | Population | Ten-year | |
|-----------|------------|-----------|----------------|
| | | Growth | Percent change |
| 1860..... | 379,994 | | |
| 1870..... | 560,247 | 180,253 | 47.4 |
| 1880..... | 864,694 | 304,447 | 54.3 |
| 1890..... | 1,213,398 | 348,704 | 40.3 |
| 1900..... | 1,485,053 | 271,655 | 22.4 |
| 1910..... | 2,377,549 | 892,496 | 60.1 |
| 1920..... | 3,426,861 | 1,049,312 | 44.1 |
| 1930..... | 5,677,251 | 2,250,390 | 65.7 |
| 1940..... | 6,907,387 | 1,230,136 | 21.7 |
| 1950..... | 10,586,223 | 3,678,836 | 53.3 |
| 1960..... | 15,717,204 | 5,130,981 | 48.5 |
| 1970..... | 19,779,156 | 4,061,952 | 25.8 |
| 1980..... | 23,668,049 | 3,888,893 | 19.7 |
| 1988..... | 27,662,900 | 3,994,851 | — |

TABLE 2
CALIFORNIA AND LOS ANGELES COUNTY POPULATIONS AND
AUTOMOBILE REGISTRATIONS, 1914-1987

| Year | Population | | | Automobile registrations | | |
|-----------|------------|------------------------------|---------|--------------------------|------------------------------|---------|
| | Statewide | Los Angeles County Number | Percent | Statewide | Los Angeles County Number | Percent |
| 1914..... | 2,797,274 | 677,061 | 24.2 | 123,516 | 43,099 | 34.9 |
| 1915..... | 2,902,205 | 720,293 | 24.8 | 164,795 | 55,217 | 33.5 |
| 1916..... | 3,007,136 | 763,525 | 25.4 | 232,328 | 74,709 | 32.2 |
| 1917..... | 3,112,067 | 806,758 | 25.9 | 306,757 | 93,654 | 30.5 |
| 1918..... | 3,216,999 | 849,990 | 26.4 | 364,800 | 107,232 | 29.4 |
| 1919..... | 3,321,930 | 893,223 | 26.9 | 477,450 | 140,967 | 29.5 |
| 1920..... | 3,426,861 | 936,455 | 27.3 | 532,934 | 161,846 | 30.4 |
| 1921..... | 3,651,900 | 1,063,659 | 29.1 | 645,522 | 211,679 | 32.8 |
| 1922..... | 3,876,939 | 1,190,862 | 30.7 | 822,394 | 288,495 | 35.1 |
| 1923..... | 4,101,978 | 1,318,066 | 32.1 | 1,056,756 | 411,451 | 38.9 |
| 1924..... | 4,327,017 | 1,445,270 | 33.4 | 1,125,201 | 465,882 | 41.4 |
| 1925..... | 4,552,056 | 1,572,474 | 34.5 | 1,224,831 | 505,865 | 41.3 |
| 1926..... | 4,777,095 | 1,699,677 | 35.6 | 1,383,097 | 559,684 | 40.5 |
| 1927..... | 5,002,134 | 1,826,881 | 36.5 | 1,479,411 | 601,637 | 40.7 |
| 1928..... | 5,227,173 | 1,954,085 | 37.4 | 1,582,477 | 650,207 | 41.1 |
| 1929..... | 5,452,212 | 2,081,288 | 38.2 | 1,885,308 | 776,677 | 41.2 |
| 1930..... | 5,677,251 | 2,208,492 | 38.9 | 1,941,969 | 806,264 | 41.5 |
| 1931..... | 5,800,265 | 2,266,207 | 39.1 | 1,938,068 | 805,787 | 41.6 |
| 1932..... | 5,923,278 | 2,323,922 | 39.2 | 1,865,333 | 772,399 | 41.4 |
| 1933..... | 6,046,292 | 2,381,637 | 39.4 | 1,850,608 | 770,877 | 41.7 |
| 1934..... | 6,169,305 | 2,439,352 | 39.5 | 1,876,192 | 779,915 | 41.6 |
| 1935..... | 6,292,319 | 2,497,068 | 39.7 | 2,015,018 | 838,983 | 41.6 |
| 1936..... | 6,415,333 | 2,554,783 | 39.8 | 2,178,038 | 907,223 | 41.7 |
| 1937..... | 6,538,346 | 2,612,498 | 40.0 | 2,319,341 | 975,392 | 42.1 |
| 1938..... | 6,661,360 | 2,670,213 | 40.1 | 2,339,208 | 979,974 | 41.9 |
| 1939..... | 6,784,373 | 2,727,928 | 40.2 | 2,422,322 | 1,019,293 | 42.1 |
| 1940..... | 6,907,387 | 2,785,643 | 40.3 | 2,573,264 | 1,093,290 | 42.5 |
| 1941..... | 7,275,271 | 2,922,247 | 40.2 | 2,740,101 | 1,174,358 | 42.9 |
| 1942..... | 7,643,154 | 3,058,852 | 40.0 | 2,617,853 | 1,127,538 | 43.1 |
| 1943..... | 8,011,038 | 3,195,456 | 39.9 | 2,533,436 | 1,082,809 | 42.7 |
| 1944..... | 8,378,921 | 3,332,061 | 39.8 | 2,553,362 | 1,088,930 | 42.6 |
| 1945..... | 8,746,805 | 3,468,665 | 39.7 | 2,604,789 | 1,103,914 | 42.4 |
| 1946..... | 9,114,689 | 3,605,269 | 39.6 | 2,801,076 | 1,196,319 | 42.7 |
| 1947..... | 9,482,572 | 3,741,874 | 39.5 | 3,113,329 | 1,333,718 | 42.8 |
| 1948..... | 9,850,456 | 3,878,478 | 39.4 | 3,350,078 | 1,427,752 | 42.6 |
| 1949..... | 10,218,339 | 4,015,083 | 39.3 | 3,671,466 | 1,543,647 | 42.0 |
| 1950..... | 10,586,223 | 4,151,687 | 39.2 | 4,076,484 | 1,712,545 | 42.0 |
| 1951..... | 11,099,321 | 4,340,395 | 39.1 | 4,320,124 | 1,816,643 | 42.1 |
| 1952..... | 11,612,419 | 4,529,104 | 39.0 | 4,499,775 | 1,892,390 | 42.1 |
| 1953..... | 12,125,517 | 4,717,812 | 38.9 | 4,790,541 | 2,047,182 | 42.7 |
| 1954..... | 12,638,615 | 4,906,521 | 38.8 | 4,948,516 | 2,142,003 | 43.3 |
| 1955..... | 13,151,714 | 5,095,229 | 38.7 | 5,360,717 | 2,328,828 | 43.4 |
| 1956..... | 13,664,812 | 5,283,937 | 38.7 | 5,643,771 | 2,426,418 | 43.0 |
| 1957..... | 14,177,910 | 5,472,646 | 38.6 | 5,895,909 | 2,523,571 | 42.8 |
| 1958..... | 14,691,008 | 5,661,354 | 38.5 | 6,267,854 | 2,608,522 | 41.6 |
| 1959..... | 15,204,106 | 5,850,063 | 38.5 | 6,371,875 | 2,643,765 | 41.5 |
| 1960..... | 15,717,204 | 6,038,771 | 38.4 | 6,751,313 | 2,772,523 | 41.1 |
| 1961..... | 16,123,399 | 6,134,231 | 38.0 | 6,982,930 | 2,834,461 | 40.6 |
| 1962..... | 16,529,594 | 6,229,691 | 37.7 | 7,549,332 | 3,016,239 | 40.0 |
| 1963..... | 16,935,790 | 6,325,151 | 37.3 | 7,805,255 | 3,100,258 | 39.7 |
| 1964..... | 17,341,985 | 6,420,611 | 37.0 | 8,187,597 | 3,220,849 | 39.3 |
| 1965..... | 17,748,180 | 6,516,071 | 36.7 | 8,586,371 | 3,304,602 | 38.5 |
| 1966..... | 18,154,375 | 6,611,531 | 36.4 | 8,774,812 | 3,353,743 | 38.2 |
| 1967..... | 18,560,570 | 6,706,991 | 36.1 | 8,885,870 | 3,361,781 | 37.8 |
| 1968..... | 18,966,766 | 6,802,451 | 35.9 | 9,409,083 | 3,524,582 | 37.5 |
| 1969..... | 19,372,961 | 6,897,911 | 35.6 | 9,781,756 | 3,625,165 | 37.1 |
| 1970..... | 19,779,156 | 6,993,371 | 35.4 | 10,004,155 | 3,670,496 | 36.7 |
| 1971..... | 20,168,045 | 7,043,845 | 34.9 | 10,375,354 | 3,747,856 | 36.1 |
| 1972..... | 20,556,935 | 7,094,320 | 34.5 | 10,744,981 | 3,797,929 | 35.3 |
| 1973..... | 20,945,824 | 7,144,794 | 34.1 | 11,141,520 | 3,870,284 | 34.7 |
| 1974..... | 21,334,713 | 7,195,268 | 33.7 | 11,061,869 | 3,821,798 | 34.5 |
| 1975..... | 21,723,603 | 7,245,743 | 33.4 | 11,119,563 | 3,775,427 | 34.0 |
| 1976..... | 22,112,492 | 7,296,217 | 33.0 | 11,501,641 | 3,809,194 | 33.1 |
| 1977..... | 22,501,381 | 7,346,691 | 32.6 | 11,883,719 | 3,842,960 | 32.3 |
| 1978..... | 22,890,270 | 7,397,165 | 32.3 | 12,319,392 | 3,922,701 | 31.8 |
| 1979..... | 23,279,160 | 7,447,640 | 32.0 | 12,612,177 | 3,958,396 | 31.4 |
| 1980..... | 23,668,049 | 7,498,114 | 31.7 | 12,864,643 | 4,007,593 | 31.2 |
| 1981..... | 24,167,405 | 7,596,699 | 31.4 | 13,095,045 | 4,011,015 | 30.6 |
| 1982..... | 24,666,762 | 7,695,285 | 31.2 | 13,292,130 | 4,044,469 | 30.4 |
| 1983..... | 25,166,118 | 7,793,870 | 31.0 | 13,803,673 | 4,169,101 | 30.2 |
| 1984..... | 25,665,475 | 7,892,456 | 30.8 | 13,961,551 | 4,181,646 | 30.0 |
| 1985..... | 26,164,831 | 7,991,041 | 30.5 | 14,584,092 | 4,329,971 | 29.7 |
| 1986..... | 26,664,187 | 8,089,626 | 30.3 | 15,213,447 | 4,509,974 | 29.6 |
| 1987..... | 27,163,544 | 8,188,212 | 30.1 | 15,559,586 | 4,586,509 | 29.5 |

TABLE 3
AUTOMOBILE THEFTS AND POPULATION IN CALIFORNIA
AND CITY OF LOS ANGELES, 1952-1987
City of Los Angeles Percentage of Statewide

| Year | Automobile thefts | | | Population | | |
|-----------|-------------------|-------------|---------|------------|-------------|---------|
| | Statewide | Los Angeles | | Statewide | Los Angeles | |
| | | Number | Percent | | Number | Percent |
| 1952..... | 26,218 | 6,241 | 23.8 | 11,638,000 | 2,072,089 | 17.8 |
| 1953..... | 28,972 | 6,665 | 23.0 | 12,101,000 | 2,122,955 | 17.5 |
| 1954..... | 26,207 | 6,820 | 26.0 | 12,517,000 | 2,173,821 | 17.4 |
| 1955..... | 29,846 | 7,356 | 24.6 | 13,004,000 | 2,224,687 | 17.1 |
| 1956..... | 38,530 | 10,273 | 26.7 | 13,581,000 | 2,275,552 | 16.8 |
| 1957..... | 45,178 | 13,105 | 29.0 | 14,177,000 | 2,326,418 | 16.4 |
| 1958..... | 46,232 | 13,130 | 28.4 | 14,741,000 | 2,377,284 | 16.1 |
| 1959..... | 43,830 | 12,396 | 28.3 | 15,288,000 | 2,428,149 | 15.9 |
| 1960..... | 51,189 | 14,976 | 29.3 | 15,863,000 | 2,479,015 | 15.6 |
| 1961..... | 51,986 | 14,697 | 28.3 | 16,412,000 | 2,512,294 | 15.3 |
| 1962..... | 57,359 | 15,934 | 27.8 | 16,951,000 | 2,545,572 | 15.0 |
| 1963..... | 63,717 | 16,766 | 26.3 | 17,530,000 | 2,578,851 | 14.7 |
| 1964..... | 75,793 | 19,364 | 25.5 | 18,026,000 | 2,612,129 | 14.5 |
| 1965..... | 81,541 | 21,956 | 26.9 | 18,464,000 | 2,645,408 | 14.3 |
| 1966..... | 86,929 | 23,016 | 26.5 | 18,831,000 | 2,678,687 | 14.2 |
| 1967..... | 97,087 | 25,241 | 26.0 | 19,174,700 | 2,711,965 | 14.1 |
| 1968..... | 119,160 | 31,711 | 26.6 | 19,432,000 | 2,745,244 | 14.1 |
| 1969..... | 131,466 | 32,076 | 24.4 | 19,744,700 | 2,778,522 | 14.1 |
| 1970..... | 137,629 | 33,897 | 24.6 | 20,039,286 | 2,811,801 | 14.0 |
| 1971..... | 143,911 | 36,170 | 25.1 | 20,346,171 | 2,827,479 | 13.9 |
| 1972..... | 139,373 | 33,689 | 24.2 | 20,585,381 | 2,843,157 | 13.8 |
| 1973..... | 131,223 | 30,641 | 23.4 | 20,868,309 | 2,858,834 | 13.7 |
| 1974..... | 133,169 | 31,020 | 23.3 | 21,173,103 | 2,874,512 | 13.6 |
| 1975..... | 132,933 | 29,354 | 22.1 | 21,537,272 | 2,890,190 | 13.4 |
| 1976..... | 138,069 | 30,351 | 22.0 | 21,935,313 | 2,905,868 | 13.2 |
| 1977..... | 144,014 | 31,434 | 21.8 | 22,350,035 | 2,921,546 | 13.1 |
| 1978..... | 153,106 | 34,939 | 22.8 | 22,839,093 | 2,937,223 | 12.9 |
| 1979..... | 167,244 | 37,604 | 22.5 | 23,255,017 | 2,952,901 | 12.7 |
| 1980..... | 174,548 | 42,170 | 24.2 | 23,775,360 | 2,968,579 | 12.5 |
| 1981..... | 162,267 | 41,113 | 25.3 | 24,265,331 | 3,017,694 | 12.4 |
| 1982..... | 164,530 | 46,831 | 28.5 | 24,786,193 | 3,066,809 | 12.4 |
| 1983..... | 158,899 | 47,172 | 29.7 | 25,311,121 | 3,115,924 | 12.3 |
| 1984..... | 161,341 | 47,140 | 29.2 | 25,794,966 | 3,165,040 | 12.3 |
| 1985..... | 177,330 | 49,967 | 28.2 | 26,365,077 | 3,214,155 | 12.2 |
| 1986..... | 205,602 | 58,483 | 28.4 | 26,871,146 | 3,263,270 | 12.1 |
| 1987..... | 229,695 | 59,483 | 25.9 | 27,366,906 | 3,312,385 | 12.1 |

TABLE 4
LOS ANGELES COUNTY AUTOMOBILE REGISTRATIONS, 1914-1987

| Year | Population | Automobile registration | Annual percent change | Ten-year Index ^a | Automobiles per 100,000 population | Persons per automobile |
|-----------|------------|-------------------------|-----------------------|-----------------------------|------------------------------------|------------------------|
| 1914..... | 677,061 | 43,099 | | | 6,366 | 15.7 |
| 1915..... | 720,293 | 55,217 | 28.1 | | 7,666 | 13.0 |
| 1916..... | 763,525 | 74,709 | 35.3 | | 9,785 | 10.2 |
| 1917..... | 806,758 | 93,654 | 25.4 | | 11,609 | 8.6 |
| 1918..... | 849,990 | 107,232 | 14.5 | | 12,616 | 7.9 |
| 1919..... | 893,223 | 140,967 | 31.5 | | 15,782 | 6.3 |
| 1920..... | 936,455 | 161,848 | 14.8 | | 17,283 | 5.8 |
| 1921..... | 1,063,659 | 211,679 | 30.8 | | 19,901 | 5.0 |
| 1922..... | 1,190,862 | 288,495 | 36.3 | | 24,226 | 4.1 |
| 1923..... | 1,318,066 | 411,451 | 42.6 | | 31,216 | 3.2 |
| 1924..... | 1,445,270 | 465,882 | 13.2 | 981.0 | 32,235 | 3.1 |
| 1925..... | 1,572,474 | 505,865 | 8.6 | 816.1 | 32,170 | 3.1 |
| 1926..... | 1,699,677 | 559,684 | 10.6 | 649.2 | 32,929 | 3.0 |
| 1927..... | 1,826,881 | 601,637 | 7.5 | 542.4 | 32,932 | 3.0 |
| 1928..... | 1,954,085 | 650,207 | 8.1 | 506.4 | 33,274 | 3.0 |
| 1929..... | 2,081,288 | 776,677 | 19.5 | 451.0 | 37,317 | 2.7 |
| 1930..... | 2,208,492 | 806,264 | 3.8 | 398.2 | 36,507 | 2.7 |
| 1931..... | 2,266,207 | 805,787 | -.1 | 280.7 | 35,557 | 2.8 |
| 1932..... | 2,323,922 | 772,399 | 4.1 | 167.7 | 33,237 | 3.0 |
| 1933..... | 2,381,637 | 770,877 | -.2 | 87.4 | 32,368 | 3.1 |
| 1934..... | 2,439,352 | 779,915 | 1.2 | 67.4 | 31,972 | 3.1 |
| 1935..... | 2,497,068 | 838,983 | 7.6 | 65.9 | 33,599 | 3.0 |
| 1936..... | 2,554,783 | 907,223 | 8.1 | 62.1 | 35,511 | 2.8 |
| 1937..... | 2,612,498 | 975,392 | 7.5 | 62.1 | 37,336 | 2.7 |
| 1938..... | 2,670,213 | 979,974 | .5 | 50.7 | 36,700 | 2.7 |
| 1939..... | 2,727,928 | 1,019,293 | 4.0 | 31.2 | 37,365 | 2.7 |
| 1940..... | 2,785,643 | 1,093,290 | 7.3 | 35.6 | 39,247 | 2.5 |
| 1941..... | 2,922,247 | 1,174,358 | 7.4 | 45.7 | 40,187 | 2.5 |
| 1942..... | 3,058,852 | 1,127,538 | -4.0 | 46.0 | 36,861 | 2.7 |
| 1943..... | 3,195,456 | 1,082,809 | -4.0 | 40.5 | 33,886 | 3.0 |
| 1944..... | 3,332,061 | 1,088,930 | .6 | 39.6 | 32,680 | 3.1 |
| 1945..... | 3,468,665 | 1,103,914 | 1.4 | 31.6 | 31,825 | 3.1 |
| 1946..... | 3,605,269 | 1,196,319 | 8.4 | 31.9 | 33,183 | 3.0 |
| 1947..... | 3,741,874 | 1,333,718 | 11.5 | 36.7 | 35,643 | 2.8 |
| 1948..... | 3,878,478 | 1,427,752 | 7.1 | 45.7 | 36,812 | 2.7 |
| 1949..... | 4,015,083 | 1,543,647 | 8.1 | 51.4 | 38,446 | 2.6 |
| 1950..... | 4,151,687 | 1,712,545 | 10.9 | 56.6 | 41,249 | 2.4 |
| 1951..... | 4,340,395 | 1,816,643 | 6.1 | 54.7 | 41,854 | 2.4 |
| 1952..... | 4,529,104 | 1,892,390 | 4.2 | 67.8 | 41,783 | 2.4 |
| 1953..... | 4,717,812 | 2,047,182 | 8.2 | 89.1 | 43,393 | 2.3 |
| 1954..... | 4,906,521 | 2,142,003 | 4.6 | 96.7 | 43,656 | 2.3 |
| 1955..... | 5,095,229 | 2,328,823 | 8.7 | 111.0 | 45,706 | 2.2 |
| 1956..... | 5,283,937 | 2,426,418 | 4.2 | 102.8 | 45,921 | 2.2 |
| 1957..... | 5,472,646 | 2,523,571 | 4.0 | 89.2 | 46,112 | 2.2 |
| 1958..... | 5,661,354 | 2,608,522 | 3.4 | 82.7 | 46,076 | 2.2 |
| 1959..... | 5,850,063 | 2,643,765 | 1.4 | 71.3 | 45,192 | 2.2 |
| 1960..... | 6,038,771 | 2,772,523 | 4.9 | 61.9 | 45,912 | 2.2 |
| 1961..... | 6,134,231 | 2,834,461 | 2.2 | 56.0 | 46,207 | 2.2 |
| 1962..... | 6,229,691 | 3,016,239 | 6.4 | 59.4 | 48,417 | 2.1 |
| 1963..... | 6,325,151 | 3,100,258 | 2.8 | 51.4 | 49,015 | 2.0 |
| 1964..... | 6,420,611 | 3,220,849 | 3.9 | 50.4 | 50,164 | 2.0 |
| 1965..... | 6,516,071 | 3,304,602 | 2.6 | 41.9 | 50,715 | 2.0 |
| 1966..... | 6,611,531 | 3,353,743 | 1.5 | 38.2 | 50,726 | 2.0 |
| 1967..... | 6,706,991 | 3,361,781 | .2 | 33.2 | 50,124 | 2.0 |
| 1968..... | 6,802,451 | 3,524,582 | 4.8 | 35.1 | 51,813 | 1.9 |
| 1969..... | 6,897,911 | 3,625,165 | 2.9 | 37.1 | 52,555 | 1.9 |
| 1970..... | 6,993,371 | 3,670,496 | 1.3 | 32.4 | 52,485 | 1.9 |
| 1971..... | 7,043,845 | 3,747,856 | 2.1 | 32.2 | 53,208 | 1.9 |
| 1972..... | 7,094,320 | 3,797,929 | 1.3 | 25.9 | 53,535 | 1.9 |
| 1973..... | 7,144,794 | 3,870,284 | 1.9 | 24.8 | 54,169 | 1.8 |
| 1974..... | 7,195,268 | 3,821,798 | -1.3 | 18.7 | 53,115 | 1.9 |
| 1975..... | 7,245,743 | 3,775,427 | -1.2 | 14.2 | 52,105 | 1.9 |
| 1976..... | 7,296,217 | 3,809,194 | .9 | 13.6 | 52,208 | 1.9 |
| 1977..... | 7,346,691 | 3,842,960 | .9 | 14.3 | 52,309 | 1.9 |
| 1978..... | 7,397,165 | 3,922,701 | 2.1 | 11.3 | 53,030 | 1.9 |
| 1979..... | 7,447,640 | 3,958,396 | .9 | 9.2 | 53,150 | 1.9 |
| 1980..... | 7,498,114 | 4,007,593 | 1.2 | 9.2 | 53,448 | 1.9 |
| 1981..... | 7,596,699 | 4,011,015 | .1 | 7.0 | 52,799 | 1.9 |
| 1982..... | 7,695,285 | 4,044,469 | .8 | 6.5 | 52,558 | 1.9 |
| 1983..... | 7,793,870 | 4,169,101 | 3.1 | 7.7 | 53,492 | 1.9 |
| 1984..... | 7,892,456 | 4,181,646 | .3 | 9.4 | 52,983 | 1.9 |
| 1985..... | 7,991,041 | 4,329,971 | 3.5 | 14.7 | 54,185 | 1.8 |
| 1986..... | 8,089,626 | 4,509,974 | 4.2 | 18.4 | 55,750 | 1.8 |
| 1987..... | 8,188,212 | 4,586,509 | 1.7 | 19.3 | 56,014 | 1.8 |

^aTen-year index measures registration increase from the previous decade.

TABLE 5
AUTOMOBILE THEFT IN CITY OF LOS ANGELES, 1916-1987
 Percent Changes and Rates per 100,000 Population and Registrations

| Year | Number | Annual percent change | Annual indexed percent change ^a | Automobile theft rates | |
|-----------|--------|-----------------------|--|------------------------|---------------------------|
| | | | | Per 100,000 population | Per 100,000 registrations |
| 1916..... | 1,520 | | | 320.9 | 2,034.6 |
| 1917..... | 1,570 | 3.3 | 3.3 | 314.4 | 1,676.4 |
| 1918..... | 1,529 | -2.6 | .6 | 291.1 | 1,425.9 |
| 1919..... | 1,698 | 11.1 | 11.7 | 308.2 | 1,204.5 |
| 1920..... | 974 | -42.6 | -35.9 | 168.9 | 601.8 |
| 1921..... | 2,332 | 139.4 | 53.4 | 362.8 | 1,101.7 |
| 1922..... | 3,805 | 63.2 | 150.3 | 536.7 | 1,318.9 |
| 1923..... | 5,218 | 37.1 | 243.3 | 673.2 | 1,268.2 |
| 1924..... | 7,302 | 39.9 | 380.4 | 868.0 | 1,567.3 |
| 1925..... | 8,392 | 14.9 | 452.1 | 924.9 | 1,658.9 |
| 1926..... | 11,541 | 37.5 | 659.3 | 1,185.5 | 2,062.1 |
| 1927..... | 11,462 | -7 | 654.1 | 1,102.5 | 1,905.1 |
| 1928..... | 9,974 | -13.0 | 556.2 | 902.0 | 1,534.0 |
| 1929..... | 9,987 | .1 | 557.0 | 852.2 | 1,285.9 |
| 1930..... | 9,888 | -1.0 | 550.5 | 798.7 | 1,226.4 |
| 1931..... | 9,363 | -5.3 | 516.0 | 740.4 | 1,162.0 |
| 1932..... | 8,391 | -10.4 | 452.0 | 649.8 | 1,086.4 |
| 1933..... | 7,372 | -12.1 | 385.0 | 559.4 | 956.3 |
| 1934..... | 6,456 | -12.4 | 324.7 | 480.2 | 827.8 |
| 1935..... | 6,081 | -5.8 | 300.1 | 443.5 | 724.8 |
| 1936..... | 7,195 | 18.3 | 373.4 | 514.7 | 793.1 |
| 1937..... | 9,241 | 28.4 | 508.0 | 648.8 | 947.4 |
| 1938..... | 8,902 | -3.7 | 485.7 | 613.5 | 908.4 |
| 1939..... | 8,278 | -7.0 | 444.6 | 560.2 | 812.1 |
| 1940..... | 8,424 | 1.8 | 454.2 | 560.0 | 770.5 |
| 1941..... | 8,605 | 2.1 | 466.1 | 554.8 | 732.7 |
| 1942..... | 6,492 | -24.6 | 327.1 | 406.4 | 575.8 |
| 1943..... | 9,485 | 46.1 | 524.0 | 576.9 | 876.0 |
| 1944..... | 8,647 | -8.8 | 468.9 | 511.4 | 794.1 |
| 1945..... | 10,613 | 22.7 | 598.2 | 610.9 | 961.4 |
| 1946..... | 8,869 | -16.4 | 483.5 | 497.2 | 741.4 |
| 1947..... | 6,607 | -25.5 | 334.7 | 360.9 | 495.4 |
| 1948..... | 4,963 | -24.9 | 226.5 | 264.4 | 347.6 |
| 1949..... | 4,556 | -8.2 | 199.7 | 236.8 | 295.1 |
| 1950..... | 4,543 | -.3 | 198.9 | 230.6 | 265.3 |
| 1951..... | 5,092 | 12.1 | 235.0 | 251.9 | 280.3 |
| 1952..... | 6,241 | 22.6 | 310.6 | 301.2 | 329.8 |
| 1953..... | 6,665 | 6.8 | 338.5 | 313.9 | 325.6 |
| 1954..... | 6,820 | 2.3 | 348.7 | 313.7 | 318.4 |
| 1955..... | 7,356 | 7.9 | 383.9 | 330.7 | 315.9 |
| 1956..... | 10,273 | 39.7 | 575.9 | 451.5 | 423.4 |
| 1957..... | 13,105 | 27.6 | 762.2 | 563.3 | 519.3 |
| 1958..... | 13,130 | .2 | 763.8 | 552.3 | 503.4 |
| 1959..... | 12,396 | -5.6 | 715.5 | 510.5 | 468.9 |
| 1960..... | 14,976 | 20.8 | 885.3 | 604.1 | 540.2 |
| 1961..... | 14,697 | -1.9 | 866.9 | 585.0 | 518.5 |
| 1962..... | 15,934 | 8.4 | 948.3 | 625.9 | 528.3 |
| 1963..... | 16,766 | 5.2 | 1,003.0 | 650.1 | 540.8 |
| 1964..... | 19,364 | 15.5 | 1,173.9 | 741.3 | 601.2 |
| 1965..... | 21,956 | 13.4 | 1,344.5 | 830.0 | 664.4 |
| 1966..... | 23,016 | 4.8 | 1,414.2 | 859.2 | 686.3 |
| 1967..... | 25,241 | 9.7 | 1,560.6 | 930.7 | 750.8 |
| 1968..... | 31,711 | 25.6 | 1,986.3 | 1,155.1 | 899.7 |
| 1969..... | 32,076 | 1.2 | 2,010.3 | 1,154.4 | 884.8 |
| 1970..... | 33,897 | 5.7 | 2,130.1 | 1,205.5 | 923.5 |
| 1971..... | 36,170 | 6.7 | 2,279.6 | 1,279.2 | 965.1 |
| 1972..... | 33,689 | -6.9 | 2,116.4 | 1,184.9 | 887.0 |
| 1973..... | 30,641 | -9.0 | 1,915.9 | 1,071.8 | 791.7 |
| 1974..... | 31,020 | 1.2 | 1,940.8 | 1,079.1 | 811.7 |
| 1975..... | 29,354 | -5.4 | 1,831.2 | 1,015.6 | 777.5 |
| 1976..... | 30,351 | 3.4 | 1,896.8 | 1,044.5 | 796.8 |
| 1977..... | 31,434 | 3.6 | 1,968.0 | 1,075.9 | 818.0 |
| 1978..... | 34,939 | 11.2 | 2,198.6 | 1,189.5 | 890.7 |
| 1979..... | 37,604 | 7.6 | 2,373.9 | 1,273.5 | 950.0 |
| 1980..... | 42,170 | 12.1 | 2,674.3 | 1,420.5 | 1,052.3 |
| 1981..... | 41,113 | -2.5 | 2,604.8 | 1,362.4 | 1,025.0 |
| 1982..... | 46,831 | 13.9 | 2,991.0 | 1,527.0 | 1,157.9 |
| 1983..... | 47,172 | .7 | 3,003.4 | 1,513.9 | 1,131.5 |
| 1984..... | 47,140 | -.1 | 3,001.3 | 1,489.4 | 1,127.3 |
| 1985..... | 49,967 | 6.0 | 3,187.3 | 1,554.6 | 1,154.0 |
| 1986..... | 58,483 | 17.0 | 3,747.6 | 1,792.2 | 1,296.7 |
| 1987..... | 59,483 | 1.7 | 3,813.4 | 1,795.8 | 1,296.9 |

^aPercent is calculated on number of automobile thefts indexed to the base year of 1916.

TABLE 6
CITY OF LOS ANGELES POPULATION, 1910-1988

| Year | Population | Ten-year change | Year | Population | Ten-year change |
|-----------|------------|-----------------|-----------|------------|-----------------|
| 1910..... | 319,198 | | 1949..... | 1,923,750 | |
| 1911..... | 344,946 | | 1950..... | 1,970,358 | 31.0 |
| 1912..... | 370,693 | | 1951..... | 2,021,224 | |
| 1913..... | 396,441 | | 1952..... | 2,072,089 | |
| 1914..... | 422,188 | | 1953..... | 2,122,955 | |
| 1915..... | 447,936 | | 1954..... | 2,173,821 | |
| 1916..... | 473,683 | | 1955..... | 2,224,687 | |
| 1917..... | 499,431 | | 1956..... | 2,275,552 | |
| 1918..... | 525,178 | | 1957..... | 2,326,418 | |
| 1919..... | 550,926 | | 1958..... | 2,377,284 | |
| 1920..... | 576,673 | 80.7 | 1959..... | 2,428,149 | |
| 1921..... | 642,811 | | 1960..... | 2,479,015 | 25.8 |
| 1922..... | 708,948 | | 1961..... | 2,512,294 | |
| 1923..... | 775,086 | | 1962..... | 2,545,572 | |
| 1924..... | 841,223 | | 1963..... | 2,578,851 | |
| 1925..... | 907,361 | | 1964..... | 2,612,129 | |
| 1926..... | 973,498 | | 1965..... | 2,645,408 | |
| 1927..... | 1,039,636 | | 1966..... | 2,678,687 | |
| 1928..... | 1,105,773 | | 1967..... | 2,711,965 | |
| 1929..... | 1,171,911 | | 1968..... | 2,745,244 | |
| 1930..... | 1,238,048 | 114.7 | 1969..... | 2,778,522 | |
| 1931..... | 1,264,671 | | 1970..... | 2,811,801 | 13.4 |
| 1932..... | 1,291,294 | | 1971..... | 2,827,479 | |
| 1933..... | 1,317,917 | | 1972..... | 2,843,157 | |
| 1934..... | 1,344,540 | | 1973..... | 2,858,834 | |
| 1935..... | 1,371,162 | | 1974..... | 2,874,512 | |
| 1936..... | 1,397,785 | | 1975..... | 2,890,190 | |
| 1937..... | 1,424,408 | | 1976..... | 2,905,868 | |
| 1938..... | 1,451,031 | | 1977..... | 2,921,546 | |
| 1939..... | 1,477,654 | | 1978..... | 2,937,223 | |
| 1940..... | 1,504,277 | 21.5 | 1979..... | 2,952,901 | |
| 1941..... | 1,550,885 | | 1980..... | 2,968,579 | 5.6 |
| 1942..... | 1,597,493 | | 1981..... | 3,017,694 | |
| 1943..... | 1,644,101 | | 1982..... | 3,066,809 | |
| 1944..... | 1,690,709 | | 1983..... | 3,115,924 | |
| 1945..... | 1,737,318 | | 1984..... | 3,165,040 | |
| 1946..... | 1,783,926 | | 1985..... | 3,214,155 | |
| 1947..... | 1,830,534 | | 1986..... | 3,263,270 | |
| 1948..... | 1,877,142 | | 1987..... | 3,312,385 | |
| | | | 1988..... | 3,361,500 | — |

TABLE 7
AUTOMOBILES STOLEN IN CITY OF LOS ANGELES
AND RECOVERED, 1916-1987^a

| Year | Recovered | | Year | Recovered | |
|-----------|-----------|--------------------|-----------|-----------|---------|
| | Number | Percent | | Number | Percent |
| 1916..... | 1,299 | 85.0 | 1952..... | 5,955 | 95.0 |
| 1917..... | 1,216 | 77.0 | 1953..... | 6,499 | 98.0 |
| 1918..... | 1,213 | 79.0 | 1954..... | 6,575 | 96.0 |
| 1919..... | 1,335 | 79.0 | 1955..... | 6,857 | 93.0 |
| 1920..... | 887 | 91.0 | 1956..... | 9,351 | 91.0 |
| 1921..... | 1,725 | 74.0 | 1957..... | 12,274 | 94.0 |
| 1922..... | 2,772 | 73.0 | 1958..... | 12,731 | 97.0 |
| 1923..... | 3,119 | 60.0 | 1959..... | 11,909 | 96.0 |
| 1924..... | 5,329 | 73.0 | 1960..... | 14,288 | 95.0 |
| 1925..... | 7,145 | 85.0 | 1961..... | 13,785 | 94.0 |
| 1926..... | 10,329 | 89.0 | 1962..... | 15,114 | 95.0 |
| 1927..... | 9,380 | 82.0 | 1963..... | 15,740 | 94.0 |
| 1928..... | 8,274 | 83.0 | 1964..... | 17,537 | 91.0 |
| 1929..... | 8,474 | 85.0 | 1965..... | 20,288 | 92.0 |
| 1930..... | 7,806 | 79.0 | 1966..... | 20,055 | 87.0 |
| 1931..... | 7,756 | 83.0 | 1967..... | 22,722 | 90.0 |
| 1932..... | 7,298 | 87.0 | 1968..... | 27,740 | 87.0 |
| 1933..... | 6,552 | 89.0 | 1969..... | 27,182 | 85.0 |
| 1934..... | 5,687 | 88.0 | 1970..... | 28,147 | 83.0 |
| 1935..... | 5,491 | 90.0 | 1971..... | 30,738 | 85.0 |
| 1936..... | 6,594 | 92.0 | 1972..... | 29,268 | 87.0 |
| 1937..... | 8,587 | 93.0 | 1973..... | 27,150 | 89.0 |
| 1938..... | 8,287 | 93.0 | 1974..... | 25,594 | 83.0 |
| 1939..... | 7,592 | 92.0 | 1975..... | 25,409 | 87.0 |
| 1940..... | 7,803 | 93.0 | 1976..... | 28,268 | 93.0 |
| 1941..... | 8,072 | 94.0 | 1977..... | 28,671 | 91.0 |
| 1942..... | 6,697 | 103.0 ^b | 1978..... | 28,710 | 82.0 |
| 1943..... | 9,008 | 95.0 | 1979..... | 29,558 | 79.0 |
| 1944..... | 8,566 | 99.0 | 1980..... | 35,673 | 85.0 |
| 1945..... | 10,328 | 97.0 | 1981..... | 36,305 | 88.0 |
| 1946..... | 8,588 | 97.0 | 1982..... | 42,130 | 90.0 |
| 1947..... | 6,344 | 96.0 | 1983..... | 43,294 | 92.0 |
| 1948..... | 4,746 | 96.0 | 1984..... | 37,713 | 80.0 |
| 1949..... | 4,379 | 96.0 | 1985..... | 40,791 | 82.0 |
| 1950..... | 4,306 | 95.0 | 1986..... | 50,067 | 86.0 |
| 1951..... | 4,700 | 92.0 | 1987..... | 55,694 | 94.0 |

^aStolen in Los Angeles, recovered anywhere. Does not include recoveries made for thefts occurring in other jurisdictions.

^bIncludes automobiles stolen in the previous year.

TABLE 8
JUVENILE AND ADULT ARRESTS IN CITY OF LOS ANGELES
FOR AUTOMOBILE THEFT, 1927-28 — 1987

| | Total | 14 and under | 15-17 | 18-21 | 22-24 | 25-29 | 30-34 | 35-39 | 40-49 | 50 and over |
|----------------------------|-------|-----------------|-------|-------|-------|-------|-------|-------|-------|----------------|
| 1927-28 | | | | | | | | | | |
| Number..... | 1,543 | 129 | 360 | 436 | 230 | 217 | 82 | 50 | 28 | 7 |
| Percent..... | 100.0 | 8.4 | 23.3 | 28.3 | 14.9 | 14.1 | 5.3 | 3.2 | 1.8 | .5 |
| Cumulative percent..... | | 8.4 | 31.7 | 59.9 | 74.9 | 88.9 | 94.2 | 97.5 | 99.3 | 100.0 |
| 1935-36 | | | | | | | | | | |
| Number..... | 1,130 | 93 | 276 | 277 | 155 | 143 | 83 | 56 | 35 | 12 |
| Percent..... | 100.0 | 8.2 | 24.4 | 24.5 | 13.7 | 12.7 | 7.3 | 5.0 | 3.1 | 1.1 |
| Cumulative percent..... | | 8.2 | 32.7 | 57.2 | 70.9 | 83.5 | 90.9 | 95.8 | 98.9 | 100.0 |
| 1940 | | | | | | | | | | |
| Number..... | 1,377 | 115 | 470 | 376 | 135 | 139 | 63 | 45 | 30 | 4 |
| Percent..... | 100.0 | 8.4 | 34.1 | 27.3 | 9.8 | 10.1 | 4.6 | 3.3 | 2.2 | .3 |
| Cumulative percent..... | | 8.4 | 42.5 | 69.8 | 79.6 | 89.7 | 94.3 | 97.5 | 99.7 | 100.0 |
| 1945 | | | | | | | | | | |
| Number..... | 2,696 | 261 | 972 | 758 | 295 | 216 | 101 | 33 | 52 | 12 |
| Percent..... | 100.0 | 9.7 | 36.1 | 27.9 | 10.9 | 8.0 | 3.7 | 1.2 | 1.9 | .4 |
| Cumulative percent..... | | 9.7 | 45.7 | 73.6 | 84.6 | 92.6 | 96.3 | 97.6 | 99.5 | 100.0 |
| 1952 | | | | | | | | | | |
| Number..... | 1,772 | 228 | 601 | 375 | 165 | 177 | 108 | 60 | 44 | 14 |
| Percent..... | 100.0 | 12.9 | 33.9 | 21.2 | 9.3 | 10.0 | 6.1 | 3.4 | 2.5 | .8 |
| Cumulative percent..... | | 12.9 | 46.8 | 67.9 | 77.3 | 87.2 | 93.3 | 96.7 | 99.2 | 100.0 |
| 1957 | | | | | | | | | | |
| Number..... | 3,632 | 839 | 1,352 | 588 | 217 | 254 | 171 | 109 | 83 | 19 |
| Percent..... | 100.0 | 23.1 | 37.2 | 16.2 | 6.0 | 7.0 | 4.7 | 3.0 | 2.3 | .5 |
| Cumulative percent..... | | 23.1 | 60.3 | 76.5 | 82.5 | 89.5 | 94.2 | 97.2 | 99.5 | 100.0 |
| 1960 | | | | | | | | | | |
| Number..... | 4,222 | 741 | 1,584 | 855 | 299 | 290 | 190 | 130 | 101 | 32 |
| Percent..... | 100.0 | 17.6 | 37.5 | 20.3 | 7.1 | 6.9 | 4.5 | 3.1 | 2.4 | .8 |
| Cumulative percent..... | | 17.6 | 55.1 | 75.3 | 82.4 | 89.3 | 93.8 | 96.8 | 99.2 | 100.0 |
| 1965 | | | | | | | | | | |
| Number..... | 5,891 | 798 | 2,252 | 1,282 | 514 | 442 | 250 | 142 | 170 | 41 |
| Percent..... | 100.0 | 13.5 | 38.2 | 21.8 | 8.7 | 7.5 | 4.2 | 2.4 | 2.9 | .7 |
| Cumulative percent..... | | 13.5 | 51.8 | 73.5 | 82.3 | 89.8 | 94.0 | 96.4 | 99.3 | 100.0 |
| 1970 | | | | | | | | | | |
| Number..... | 8,427 | 1,032 | 2,814 | 2,144 | 863 | 712 | 352 | 210 | 228 | 72 |
| Percent..... | 100.0 | 12.2 | 33.4 | 25.4 | 10.2 | 8.4 | 4.2 | 2.5 | 2.7 | .9 |
| Cumulative percent..... | | 12.2 | 45.6 | 71.1 | 81.3 | 89.8 | 93.9 | 96.4 | 99.1 | 100.0 |
| 1975 | | | | | | | | | | |
| Number..... | 5,784 | 597 | 2,066 | 1,533 | 546 | 508 | 217 | 127 | 139 | 51 |
| Percent..... | 100.0 | 10.3 | 35.7 | 26.5 | 9.4 | 8.8 | 3.8 | 2.2 | 2.4 | .9 |
| Cumulative percent..... | | 10.3 | 46.0 | 72.5 | 82.0 | 90.8 | 94.5 | 96.7 | 99.1 | 100.0 |
| 1980 | | | | | | | | | | |
| Number..... | 5,916 | 457 | 1,618 | 1,651 | 818 | 705 | 323 | 180 | 125 | 39 |
| Percent..... | 100.0 | 7.7 | 27.3 | 27.9 | 13.8 | 11.9 | 5.5 | 3.0 | 2.1 | .7 |
| Cumulative percent..... | | 7.7 | 35.1 | 63.0 | 76.8 | 88.7 | 94.2 | 97.2 | 99.3 | 100.0 |
| 1987 | | | | | | | | | | |
| Number..... | 8,681 | 593 | 2,119 | 2,011 | 1,078 | 1,333 | 804 | 401 | 287 | 55 |
| Percent..... | 100.0 | 6.8 | 24.4 | 23.2 | 12.4 | 15.4 | 9.3 | 4.6 | 3.3 | .6 |
| Cumulative percent..... | | 6.8 | 31.2 | 54.4 | 66.8 | 82.2 | 91.4 | 96.1 | 99.4 | 100.0 |

Note: Percents may not add to 100.0 because of rounding.