

**OPERATION OF AN AUDITED-MILE/YEAR
AUTO INSURANCE SYSTEM
UNDER PENNSYLVANIA LAW**

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To: Readers, The Forum, Casualty Actuarial Society

From: Patrick Butler, Ph.D.
Director, Insurance Project

Re: Practicality of the Car-Mile Exposure Unit for Auto Insurance

The following 29-page review was prepared at the request of Pennsylvania legislators, who are considering rate regulatory bills that would mandate use of the car-mile exposure unit for driving coverages.

The focus is on individual transactions because the questions of convenience and control of odometer fraud are generally accepted as an impracticality barrier to a "pay-by-the-mile" method of earning premiums.

The theory behind the car-mile exposure unit is straightforward. Since every mile traveled by a car transfers risk to its insurer, the product of (a cents-per-mile class rate based on the class's per-mile cost experience) X (miles recorded on the car's odometer) appropriately earns prepaid premium while the car is driven.

Apparently there has been no other consideration of the impracticality issue since Paul Dorweiler's 1929 paper on exposure units stated that "[t]he devices and records necessary for the introduction of [the car mile] medium make it impractical under present conditions." 16 PCAS 319, 338; 58 PCAS 59, 78. For this reason, it is hoped that this review can serve as a framework for renewed, informed consideration of the practicality question.

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Prepared by
National Organization for Women
June 22, 1992

Executive Summary

This review examines the practical implications for insurance companies and Pennsylvania car owners of converting premium calculation for most coverages from dollars-per-year to cents-per-mile class rates. The purpose is to provide an operational model for evaluating proposed legislation mandating this conversion (SB 775 and HB 1881). Operation of a mile/year system is described through a sequence of transactions for a hypothetical car over four policy years.

Advance payment continues to be required for keeping insurance protection in force. Administrative expense and premium for nondriving coverages (theft, fire, hail) at year rates are paid at policy-year renewal time. Premium for driving coverages (liability, medical, collision) at mile rates is prepaid in mileage amounts and at intervals chosen by the car owner. The car's insurance ID card displays the odometer-mile and date limits to prepaid protection.

Policy renewal is conditional on taking the car to a garage designated by the company for the annual physical audit of its odometer. The odometer is calibrated and read, and tamper-evident seals are applied at the initial audit. Tampering with the odometer voids the insurance protection.

The possibility of stealing insurance protection under the mile/year system is explored. Control measures are described using two examples: a 10,000-mile roll back and stopping the odometer for 10,000 miles. (Driving with the cable unhooked, surprisingly, does not steal insurance protection, because it usually would be detected after an accident and tampering voids protection.)

The opposite possibility under the current year system is examined: policyholders having to pay premiums during nondriving periods when their cars are not consuming insurance protection and do not need it. Current "suspension of coverage" provisions for periods of non driving appear to be cumbersome, inadequate, and inconsistently applied. The present administrative handling of premium refunds for non-driving periods is compared to the mile/year system's automatic response to non-driving periods.

The review concludes by examining compulsory-insurance enforcement and compliance under the year and mile/year systems respectively. Attention is given to the negative effect that year-system enforcement has on ability to pay for insurance in comparison to the positive effect of the mile/year system on car owners' ability to comply with requirements.

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I. Introduction

This review examines the practical implications for insurance companies and Pennsylvania car owners of converting most automobile insurance coverages from year to mile class rates. The purpose is to provide a framework for evaluating legislation mandating this conversion from one-part to two-part pricing: from time rates only to a system using both distance rates and time rates. The legislation, which has been introduced in the Pennsylvania Senate and House and is under consideration in other states, would add one sentence to the state's Casualty and Surety Rate Regulatory Act: The exposure units for calculation of private passenger automobile insurance premiums at the appropriate classification rates shall be the mile by audited odometer readings for driving coverages and the year for nondriving coverages.¹

The review assumes that this amendment is the only action by the Pennsylvania Legislature that would be needed to change prices for on-the-road coverages from *dollars per car year* to *cents per car mile*.² The methods of conversion and operation can be decided by the individual companies, constrained only by existing law on insurance and motor vehicles.³ Self-interest and competition on service should

1. Identical bills--Senate Bill 775 and House Bill 1881--were introduced in the 1991-92 Pennsylvania General Assembly and referred to the insurance committees.

Premiums for driving coverages charged at mile rates according to odometer readings is a method that works with any amount of coverage and all risk classifications. To calculate a premium: multiply the rate for the car's class (say 4 cents a mile) by the odometer miles of protection needed (say 10,000 miles) over a time period (say one year). The resulting premium: \$400. For urban residents with the same coverage at a 9-cent rate, the premium for 10,000 miles protection would be \$900.

2. Some regulatory changes would be necessary, however, because regulation of automobile insurance transactions is specific in some areas. Changes would be needed in current specifications for the insurance ID card contents, for example, and also regulatory review and approval would be needed for new policy language regarding odometer fraud.

3. For example, the mile rate for each classification and coverage would still be held to the Casualty and Surety Rate Regulatory Act standard that "[r]ates shall not be excessive, inadequate, or unfairly discriminatory." 40 P.S. Sec. 1183 (d).

NOW holds that, as an expression of public policy, this chief provision of rate regulation against

assure development of company systems that are efficient, convenient and credible for consumers, and that effectively control premium fraud.

To test the operation of a mile/year system, it was judged preferable to study one method in detail rather than attempting to anticipate a range in methods that may be developed by individual companies. The test system is intended to be a fully functional prototype. System specifics, such as provisions in the insurance contract relating to odometers, are intended to help focus discussion.

As an introduction to its operation, the mile/year system selected is described in Section II (page 3) through a sequence of transactions for a hypothetical car over four policy years.

Section III (page 12) examines the methods of odometer auditing and the possibilities for fraud, in preparation for the next section on theft of insurance protection.

Section IV (page 14) explores the possibility under the mile/year system of theft of insurance protection by policyholders tampering with their odometers, and describes measures taken to prevent it.

Section V (page 20) examines the opposite possibility under the current system: policyholders having to pay premiums during nondriving periods when their cars are not consuming insurance protection and do not need it. The section describes how insurance companies now provide premium refunds for some kinds of nondriving periods, but not for others. The present administrative handling of premium refunds is compared to the mile/year system's automatic response to non-driving periods.

The final section (Section VI, page 26) reviews compulsory-insurance enforcement and compliance under the year and mile/year systems respectively. Attention is given to the negative effect that enforcement has on ability to pay for insurance under the year system in comparison to the positive effect of the mile/year system on car owners' ability to comply with requirements.

(continued)

cost-shifting among policyholders requires the use of distance rates rather than the current time rates for driving coverages in auto insurance pricing. The Insurance Commissioner, however, denied illegal cost-shifting in Pennsylvania NOW v. State Farm, and was upheld by the Commonwealth Court, 551 A.2d 1162 (1988). The evidence and NOW's response to the decisions are presented in three papers published by the Journal of Insurance Regulation: Butler, Butler, & Williams, *Sex Divided Mileage, Accident, And Insurance Cost Data Show That Auto Insurers Overcharge Most Women*, 6 J. INS. REG. 243, 373 (1988); Butler, Butler, & Williams, *Insurance Department 'Catch-22' Shields Auto Insurers From Consumer Challenges*, 7 J.INS. REG. 285 (1989); Butler & Butler, *Driver Record: A Political Red Herring That Reveals the Basic Flaw in Automobile Insurance Pricing*, 8 J.INS. REG. 200 (1989).

A subsequent paper will treat topics, such as ratemaking for conversion from year to mile units of exposure, that would be of direct interest to auto insurers but of less immediate concern to most legislators.⁴ Work is also continuing on other related topics such as effect of the mile/year system on policy contract provisions that include accidents in a rented car under coverages for an owned car, and on arrangements for protection of lien holders' security interests.

II. How a mile/year system operates: an example

Automobile mechanical breakdown insurance ("service agreement" or "extended warranty") uses units of distance and time (miles and years) to measure and price insurance protection.⁵ It thus provides a model for the mile/year auto insurance system. Contract language from a mechanical breakdown policy for used cars (Exhibit A) gives the necessary rules for measuring protection with an odometer:

WHEN AND WHERE YOU ARE PROTECTED

Protection included in the Plan YOU select is available as soon as YOU receive this Agreement.

This Agreement expires 12 months after the Effective Date or, when YOUR CAR registers 12,000 miles more than the Odometer Reading at Inception, whichever comes first.

WE will not pay benefits if the odometer of the covered vehicle has stopped or been changed.

4. The paper *Making Mile Rates for Automobile Insurance* is in work. The proposal for doing the paper was accepted by the Casualty Actuarial Society in December 1991 as a candidate for the society's ratemaking seminar in March 1993.

The current method of determining the *cost per claim* does not need to be modified if appropriately applied. (Cost per claim = total cost of claims/total number of claims.) The mileage information needed to determine the *claims per mile* rate for each driving coverage is not collected at present but will be after the conversion. (Claims per mile = number of claims/number of miles driven.) The paper will examine ways in which the information can be determined in advance with sufficient accuracy for making the conversion. The *cost per claim* multiplied by number of *claims per mile* equals the per-mile cost of providing protection. For example, with an average cost of \$2000 per claim and one claim per 100,000 miles, the mile cost for one coverage may be calculated: \$2,000/claim x 1 claim/100,000 miles = \$.02/mile.

5. The Pennsylvania insurance department regulates the rates and policy forms for mechanical breakdown insurance as for all other types of automobile insurance. Premiums for a policy on a used car can exceed \$500 (4 cents per mile) for a 12,000-mile/1-year protection period.

EXHIBIT A

Mechanical breakdown insurance policy

AUTOMOBILE MECHANICAL SERVICE AGREEMENT REGISTRATION		WHAT THIS AGREEMENT PROTECTS Covered	
<p>PLANE</p> <p>The Agreement expires 24 months after the Effective Date or when YOUR CAR registers 14,000 miles, whichever comes first.</p> <p>The Agreement applies only to BREAKDOWNS experienced under the Uninsured Motorist of Automobiles in Tennessee and Mississippi and Canada.</p>		<p>PLANE</p> <p>The Effective Date and Commencement of the Agreement is the date of registration.</p>	
<p>IF YOU HAVE OTHER PROTECTION</p> <p>We will pay only a portion of COSTS if YOU have other protection covering a BREAKDOWN. Our share of COSTS shall not be the same percentage of YOUR COSTS plus OUR cost of labor as ours to the cost of all applicable kinds of insurance.</p>		<p>IF YOU HAVE OTHER PROTECTION</p> <p>If the auto insurer or insurer agrees to cover all or part of the cost of a BREAKDOWN after a warranty or guarantee has expired, we will pay only for any extra cost.</p>	
<p>WHAT THIS AGREEMENT DOES NOT PROTECT</p> <p>Under Paragraph 1 and 2, we will not pay for COSTS covered by any warranty of the Manufacturer or a retailer's guarantee.</p> <p>1. Breakdown, we will not pay for breakdowns caused by a lack of proper maintenance.</p> <p>2. For a BREAKDOWN caused by a lack of proper maintenance, we will not pay for a BREAKDOWN caused by collision fire, theft, vandalism, rust, corrosion, lightning, earthquake, vandalism, hail, water, flood, or freezing.</p> <p>3. If the agreement of the covered vehicle has increased or been changed.</p> <p>4. To replace, adjust or claim any part not covered by the agreement.</p> <p>5. For service charges.</p> <p>6. For extra charges, oil, grease, or lubricant unless incurred in connection with the repair of a covered part.</p> <p>7. For a BREAKDOWN due to misuse of vehicle.</p> <p>8. For engine failure.</p>		<p>WHAT THIS AGREEMENT DOES NOT PROTECT</p> <p>For most breakdowns, we will not pay for a BREAKDOWN resulting from repair or repair operation.</p> <p>For a BREAKDOWN caused by towing a trailer or another vehicle, unless YOUR CAR is equipped for this as recommended by the manufacturer.</p> <p>For a BREAKDOWN caused by a lack of proper maintenance.</p> <p>For a BREAKDOWN caused by collision fire, theft, vandalism, rust, corrosion, lightning, earthquake, vandalism, hail, water, flood, or freezing.</p> <p>If the agreement of the covered vehicle has increased or been changed.</p> <p>To replace, adjust or claim any part not covered by the agreement.</p> <p>For service charges.</p> <p>For extra charges, oil, grease, or lubricant unless incurred in connection with the repair of a covered part.</p> <p>For a BREAKDOWN due to misuse of vehicle.</p> <p>For engine failure.</p>	
<p>USED CAR</p> <p>AUTOMOBILE MECHANICAL SERVICE AGREEMENT</p> <p>This MECHANICAL SERVICE CONTRACT COVERS THE AGREEMENT REGISTRATION FEE AND THE FOLLOWING AGREEMENTS:</p>		<p>YOUR DUTIES IN THE EVENT OF A BREAKDOWN</p> <p>If YOU experience a BREAKDOWN YOU agree to:</p> <ol style="list-style-type: none"> 1. Use all reasonable means to protect YOUR CAR from more damage. 2. Notify US as soon as possible. 3. Furnish US with such information as we may require. 	
<p>AGREEMENT</p> <p>KEY TERMS THAT HAVE SPECIAL MEANINGS</p>			
<p>"THIS AGREEMENT" means the entire agreement in BARE PRINT, this page and the following attachments.</p> <p>"YOU" and "YOUR" mean the "Registration" shown on the Agreement Registration page.</p> <p>"WE" and "US" mean the dealer selling the agreement.</p> <p>"YOUR CAR" means the vehicle registered in the name of YOU as shown on the Agreement Registration page. It is not valid for commercial vehicles.</p>		<p>"BREAKDOWN" means the failure of any engine or transmission or any part thereof caused by wear and tear, or any other cause, which is not caused by a lack of proper maintenance.</p> <p>"COST" means the cost and for charges for the part and labor necessary to repair or replace a covered part. Replacement parts may be new, used, or reconditioned.</p> <p>"REPAIR" means the repair shown on the Agreement Registration page which we will authorize you to use and authorize us to repair. BREAKDOWNS, only are covered and only a new part or a covered part is covered in the case of a BREAKDOWN.</p>	
<p>WHAT THIS AGREEMENT PROTECTS</p> <p>As shown on the Agreement, we agree with YOU to insure:</p>			
<p>PROTECTION - MECHANICAL BREAKDOWN</p> <p>At OUR option, we may pay YOU or a repair shop the COST to correct any BREAKDOWN of a part covered by the Plan indicated by YOU and shown on the Agreement Registration page. The amount of the repair shall be the amount of the repair shown on the Plan indicated by YOU.</p> <p>Plan A covers any breakdown 1 through 3 items.</p> <p>Plan B covers any breakdown 1 through 3 items.</p> <p>Plan C covers any breakdown 1 through 3 items.</p>		<p>PROTECTION - RENTAL REPLACEMENT</p> <p>When a BREAKDOWN occurs, we will pay for a replacement vehicle for the period of time that YOUR CAR is out of service. We will pay for the replacement vehicle for the period of time that YOUR CAR is out of service. We will pay for the replacement vehicle for the period of time that YOUR CAR is out of service.</p>	
<p>PROTECTION - TOWING AND EMERGENCY ROAD SERVICE</p> <p>When a BREAKDOWN occurs, we will pay for towing and emergency road service for the period of time that YOUR CAR is out of service. We will pay for the towing and emergency road service for the period of time that YOUR CAR is out of service.</p>		<p>PROTECTION - TOWING AND EMERGENCY ROAD SERVICE</p> <p>When a BREAKDOWN occurs, we will pay for towing and emergency road service for the period of time that YOUR CAR is out of service. We will pay for the towing and emergency road service for the period of time that YOUR CAR is out of service.</p>	
<p>WHERE AND WHERE YOU ARE PROTECTED</p> <p>The Agreement is valid in the state of Tennessee and Mississippi and Canada.</p>			
<p>PLANE</p> <p>The Agreement expires 24 months after the Effective Date or when YOUR CAR registers 14,000 miles, whichever comes first.</p>			
<p>PLANE</p> <p>The Agreement expires 24 months after the Effective Date or when YOUR CAR registers 14,000 miles, whichever comes first.</p>			

TERMINATIONS

This Agreement may be terminated as follows:

- WE will terminate this Agreement for non payment of the Agreement charge.
- WE will terminate this Agreement if the odometer is disconnected or altered.
- If this Agreement is terminated, YOU may be entitled to a refund for the cost of unused protection. Unused protection is the lesser of the unused days or the unused miles of protection available.
- In the event YOU initiate a termination, a \$10 service charge will be deducted from the refund.

The same kind of policy conditions apply to coverages under the mile/year system: insurance protection is strictly prepaid (as it is now); consumption of driving protection is measured in distance units; consumption of nondriving protection is measured in time units; and odometer tampering voids the driving coverages.

Unlike the mechanical breakdown policy, however, the mile/year insurance system routinely renews mileage and time protection periods. Mileage renewals are in amounts and at intervals chosen by the policyholder, while the time period for renewal is the policy year. Policy year renewal is conditional on complying with company requirements (as it is now), such as providing rating information in the renewal application. An important renewal requirement in the mile/year system is taking the car for an annual physical audit of the odometer and its seals as directed by the company.

From the policyholder's perspective, the transactions that take place over a policy year are:

Before end of previous policy year, the policyholder

- Receives annual audit and renewal notice with premium bill
- Obtains physical audit of car's odometer
- Pays dollars-per-year premium for *non-driving* coverage and fixed expense; buys miles of *driving* coverage needed at current cents-per-mile rate
- Receives car's insurance ID card showing the odometer and date limits to prepaid protection

During policy year, the policyholder

- Buys additional miles needed at current cents-per-mile rate
- Receives car's insurance ID card showing the revised odometer limit to prepaid protection

To demonstrate operation of the mile/year system, the following hypothetical example (Exhibits B through E) tracks the insurance transactions for a single car over nearly four policy years.

Exhibit B. The sequence of transactions, which begins with 3,000 miles on the odometer when the car is acquired and ends with its sale at 37,000 miles, is shown in a graph of odometer readings vs. time.

The upper, stepped plot shows miles of insurance protection bought. Vertical segments of the "miles prepaid" line represent purchased miles of protection and are located at the dates on which the premium payments are credited. Each horizontal segment represents the odometer limit to prepaid protection until additional miles are bought.

The lower plot is a "miles driven" line connecting the odometer audit points. The line segments between audits represent average driving exposure, expressible in miles per day or miles per year. (A plot of the actual miles of exposure, by which the policyholder consumes prepaid protection and the company earns premium in providing it, would vary in slope between horizontal for periods of no driving to steeply positive--e.g. 500 miles per day--for long trips. A day-by-day plot of odometer reading, nonetheless, would also pass through the odometer audit points.)

Exhibit C. The insurance ID card, which the company is required by law to provide for each car it insures,⁶ communicates the car's insurance status to the policyholder by prominently displaying both the mile total of prepaid protection (expressed as an odometer reading) and a policy year renewal month.

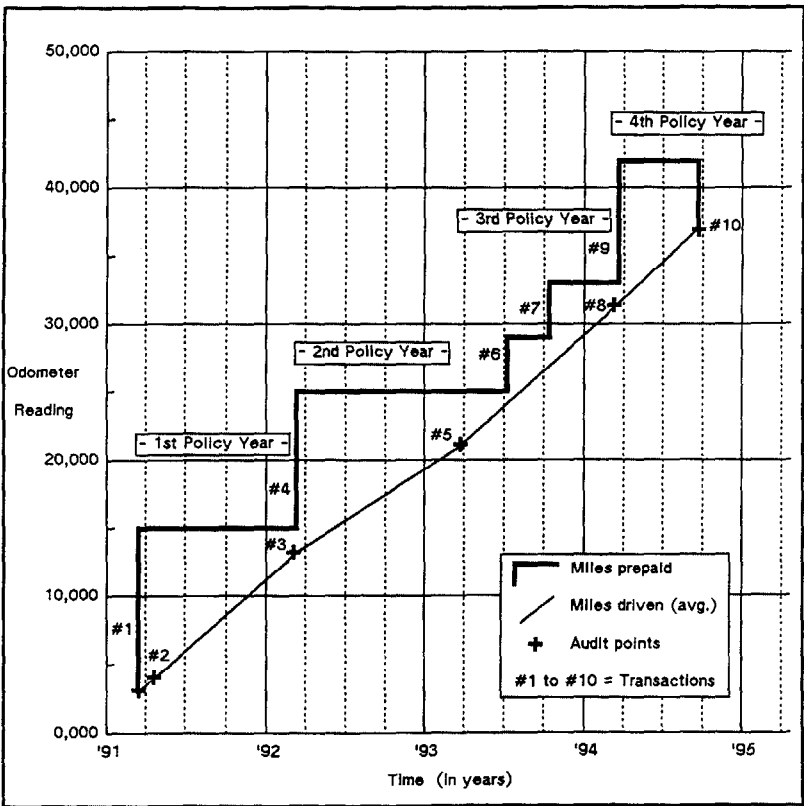
Exhibit D (& Exhibit B). A table of the transactions between policyholder and company for the example car lists the premium payments and audits over the four policy years examined.⁷ (Transactions are keyed by number to the odometer vs. date graph, Exhibit B.)

The first transaction takes place on March 15, 1991, when the new owner takes possession of the car. Its odometer reads 3,000 miles and the owner buys 12,000

6. 75 Pa.C.S. Sec. 1782 (d) and 31 Pa. Code Sec. 67.23 *et seq.*

7. The issue date of the ID Card is assumed to be 7 calendar days after the later of: 1) policyholder mailing of the renewal application with any premium paid; or 2) the odometer audit. (This time accounts for internal company processing, including transmittal of odometer audit information from vendors.) Receipt of the ID Card by the policyholder is taken as 4 days after the issue date.

EXHIBIT B
Transactions For Example Car



miles of insurance protection. The company provides a binder as proof of insurance pending issuance of an ID card, which is contingent on completion of the initial odometer audit and sealing within 30 days according to company rules.⁸

8. It is assumed that non-conformity to policy contract conditions would constitute valid cause for nonrenewal at the end of the policy year and the within-60-day cancellation period permitted for new policies. 40 P.S. Sections 1008.4 and 1008.6.

EXHIBIT C

Insurance ID Card For Example Car

Financial Responsibility Identification (ID) Card						
Insurance Company Name		company number		Insurance policy #		
Named insured			Address			
Vehicle	Make Model		Vehicle Ident. Number (VIN)			
ID Card	Insurance protection ends on		Last odometer audit done on			
Issue Date	Odometer mile	Last day of	Odometer mile	Date		
APR-20-91	15000*	MAR 1992*	3,700	APR-13-91		

* ID CARD IS NOT VALID AFTER MILE OR MONTH LIMITS SHOWN, OR IF ODOMETER STOPS.

If a limit is reached, the car is NOT insured as required by Pennsylvania law. DO NOT DRIVE IT until more insurance is purchased. If the ODOMETER STOPS, telephone your insurance company for instructions before driving.

(back of card - required statements, 31 Pa.Code 67.24)

This card must be carried for production upon demand. It is suggested that you carry this card in the insured vehicle.

WARNING: Any owner or registrant of a motor vehicle who drives or permits a motor vehicle to be driven in this State without the required financial responsibility may have his registration suspended or revoked.

NOTE: THIS CARD IS REQUIRED WHEN:

- (1) You are involved in an auto accident.
- (2) You are convicted of a traffic offense other than a parking offense that requires a court appearance.
- (3) You are stopped for violating any provision of 75 Pa.C.S. (relating to the Vehicle Code) and requested to produce it by a police officer.

You must provide a copy of this card to the Department of Transportation when you request restoration of your operating privilege and/or registration privilege which has been previously suspended or revoked.

After the first odometer audit on April 13, 1991, which shows that the car has been driven 700 miles since purchase, the company issues the ID card, Exhibit C. There are no further transactions until February 1992, near the end of the 1st policy year. Along with the renewal application form, the company communicates the 1992 mile rates and bills for any *year-rate* charges for the 2nd policy year. The policyholder, however, is responsible for buying sufficient miles of protection at *mile rates* for the anticipated use of the car.

EXHIBIT D

Transactions and ID Cards For Example Car

1ST POLICY YEAR 1991

Mar-13 Fills application for insurance on car being purchased.

#1 Mar-15 Pays car-year charges plus 12,000 car miles of protection at 1991 rate, which added to the 3,000 on odometer (and recorded on title at transfer) puts a limit odometer reading of 15,000 miles. Gets binder as proof of insurance pending auditing and sealing the odometer and receipt of the Insurance ID Card.

#2 Apr-13 Takes car for odometer audit required by Company within one month of initiation of insurance on car. Odometer reads 3,700 miles

Apr-24 Receives the Insurance ID Card, below, issued Apr-20 by Company

I.D. Card Issue Date	Insurance protection ends on Odometer mile	Last day of	Last odometer audit done on Odometer mile	Date
APR-20-91	15000	MAR 1992	3,700	APR-13-91

2ND POLICY YEAR 1992

Feb-28 Receives renewal application, bill with current car-mile and car-year rates, and notice that Company odometer audit is due in March.

#3 Mar-01 Takes car for odometer audit performed by Company-appointed, licensed, public garage. Odometer reads 13,000 miles, which garage reports to Company

Mar-03 Sends Company premium for car-year charges plus 10,000 car miles of protection, which increases the mileage limit from 15,000 to 25,000, and completed renewal application

#4 Mar-14 Receives the Insurance ID Card, below, issued by Company Mar-10

MAR-10-92	25000	MAR 1993	13,000	MAR-01-92
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3RD POLICY YEAR 1993

Mar-01 Receives renewal application, bill with current car-mile and car-year rates, and notice that Company odometer audit is due in March

Mar-19 Sends Company premium for car-year charges and completed renewal application (pays for no additional mileage)

#5 Mar-23 Takes car for odometer check performed by Company-appointed, licensed, public garage. Odometer reads 21,000 miles

Apr-03 Receives the Insurance ID Card, below, issued Mar-30

MAR-30-93	25000	MAR 1994	21,000	MAR-23-93
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Jul-03 Sends payment for 4,000 additional car miles of protection at current 1993 car-mile rates, which increases the mileage limit from 25,000 to 29,000 miles

#6 Jul-12 Receives the Insurance ID Card, below, issued Jul-08

JUL-08-93	29000	MAR 1994	21,000	MAR-23-93
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Oct-06 Sends payment for 4,000 additional car miles of protection at current 1993 car-mile rates, which increases the mileage limit from 29,000 to 33,000 miles

#7 Oct-17 Receives the Insurance ID Card, below, issued Oct-13

OCT-13-93	33000	MAR 1994	21,000	MAR-23-93
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4TH POLICY YEAR 1994

Feb-27 Receives renewal application, bill with current car-mile and car-year rates, and notice that Company odometer audit is due in March

#8 Mar-05 Takes car for odometer check performed by Company-appointed, licensed, public garage. Odometer reads 31,000 miles

Mar-13 Sends Company premium for car-year charges plus 9,000 car miles of protection, which increases the mileage limit from 33,000 to 42,000, and completed renewal application

#9 Mar-24 Receives the Insurance ID Card, below, issued Mar-20

MAR-20-94	42000	MAR 1995	31,000	MAR-05-94
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#10 Sep-20 Car is sold. Company waives physical odometer audit for refund verification because sale is to a licensed dealer. Company accepts odometer reading of 37,000 recorded on transfer title, which is filed with the state, to calculate return premium for unused miles of insurance.

Oct-1 Receives refund for 5,000 miles (= 42,000 - 37,000) at 1994 rate paid Mar-13.

The policyholder buys more miles of protection at the beginning of the 2nd policy year, but does not buy any at the beginning of the 3rd policy year. Twice during the 3rd year, however, the policyholder buys more miles of protection at the 1993 mile rates in effect.

At the time of the 1994 renewal for the 4th policy year, the policyholder buys more miles of protection in expectation of continued higher car use. The car is sold in September, however, leaving the policyholder with a premium credit for the unused miles of protection. This credit can be applied to premium for another car on the policy, used to buy miles of protection for a replacement car (at a different mile rate if coverages change), or refunded to the policyholder.

The number of transactions, in general, differs between the mile/year system and the current year system. Although the physical audit required by the test system is a mandatory annual transaction, the number of payment transactions can be decreased or increased according to the circumstances of the policyholder. In Exhibit E, this difference is assessed by comparing transactions for the two systems in the 2nd and 3rd policy years for the example car. In the 2nd policy year payments are as large and infrequent as possible under both systems to minimize the number of transactions. During the 3rd policy year, however, smaller and more frequent mileage purchases are compared with a typical extended-payment plan for year-rate premiums.⁹ Under the mile system the number and size of payments chosen by a policyholder are constrained only by company rules and charges, such as a one thousand mile minimum purchase and a \$3 transaction fee.¹⁰

9. This paper uses the current State Farm system, defined in the company's 1992 Pennsylvania manual of rates and rules, as typical. The State Farm group is the largest in Pennsylvania with nearly 1.3 million vehicles insured in 1989 (20.2% of market). PENN. INS. DEPT, *Private Passenger Motor Vehicle Single Carrier Study for [Philadelphia]*, (1991) Exhibit 3.

10. The question may arise as to the permissibility of hoarding a large amount of prepaid mileage in anticipation of a sharp rise in mile rates with inflation in medical and automobile repair costs. The company may put restrictions on the amount and may also choose to limit mileage purchase amounts during the time following filing of proposed new rates with the Insurance Commissioner--when increases become public--until the new rates take effect. The time between filing and implementation is generally at least 60 days, as set by the Motor Vehicle Insurance Rate Review Act, 75 Pa.C.S. Sec. 2003.

On the other hand, insurers may simply zero everything out at policy renewal time. That is, credit the insured for the dollar amount actually spent on miles not driven, then charge the rates in effect on the renewal date for the miles to be covered by the renewal policy.

Transaction fees charged for installment payments are currently \$2 by State Farm and \$3 by Geico.

EXHIBIT E
Mile/Year and Year Transactions Compared

MINIMUM ANNUAL TRANSACTIONS			
MILE/YEAR SYSTEM - 2nd Policy Year in Exhibit B		EQUIVALENT IN CURRENT YEAR SYSTEM	
MAR #3	Annual odometer audit (Mileage limit/policy year ID Card issued)		
MAR #4	Returns policy year reapplication with premium payment for any year charges plus premium for mileage needed at mile rates	MAR	Returns policy year reapplication and pays 1st semiannual premium (1/2 year ID Card issued)
		SEP	Pays 2nd semiannual premium (half-year ID Card issued)

EXTENDED PAYMENTS TRANSACTIONS*			
MILE/YEAR SYSTEM - 3rd Policy Year in Exhibit B		EQUIVALENT IN CURRENT YEAR SYSTEM*	
MAR #5	Annual odometer audit (ID card issued with odometer mile and month limits to protection)		
MAR	Returns policy year reapplication with any year charges (Pays no premium for car miles because sufficient unused mileage left from 2nd policy year)	MAR	Returns policy year reapplication and pays 50% of 1st semiannual premium (1/2 year ID Card issued)
JUL #6	Pays for additional miles (ID card issued with odometer mile and month limits to protection)	MAY	Pays balance of 1st semiann premium
OCT #7	Pays for additional miles (ID card issued with odometer mile and month limits to protection)	SEP	Pays 50% of 2nd semiann premium (1/2 year ID Card issued)
		NOV	Pays balance of 2nd semiann premium
		* State Farm Manual Rule 104 on Renewal of Policy	

III. Odometer auditing

Regular company audits are essential to the integrity of a mile-rate auto insurance system.¹¹ In parallel with the mechanical breakdown insurance provisions reproduced in Section II above, the test system's policy provisions on odometers are:

The policyholder must submit each car covered by this policy for an odometer inspection and reading by the Company or its contractor when first insured by the Company, and thereafter annually prior to the end of each policy year. The Company may cancel or refuse to renew the policy if the odometer inspection requirements are not met.

Driving coverages for any car under this policy are automatically void and afford no protection if the car's odometer:

- 1) Registers more miles than the limit paid
- 2) Has stopped and the Company has not been notified before further use
- 3) Has its Company seals broken or tampered with
- 4) Has been altered in any way that changes the calibrated operation.

Since the purpose of these provisions is to assure that the company receives advance payment for all of the on-road insurance protection it provides, monitoring compliance is the primary function of periodic odometer auditing.

An important secondary purpose of auditing is to provide accurate exposure data for ratemaking. Through overall and class-specific aggregations of actual, individual average¹² car mileages over given time periods (month and year), it is possible to relate miles of exposure to the claims aggregated in the same classes and during the same time periods. This would produce the necessary per-mile claim rates (claims per mile) for making cents-per-mile premium rates.¹³

Odometer audits are dated, independent (non-policyholder) odometer readings (the "audit points" of Exhibit B, *supra*, page 7). Two kinds of audits are used in the test system: physical and documentary.

A physical audit is performed on the car at the direction of the company by

11. "Audit: to examine with intent to verify." Webster's New Collegiate Dictionary (1980).

12. The audit lines connecting the audits for individual cars (Exhibit B) represent the average daily mileage of the car for the interval between audits.

13. It is worth noting that claims data on a per-mile basis would for the first time allow class and territory cost comparisons normalized to a common statistical basis that quantifies exposure.

employees or vendors, and includes inspection of seals, calibration, and reading.¹⁴ Odometers are sealed for the detection of tampering and the initial audit includes application of tamper-evident seals. (Serialized one-way adhesive seals witness the integrity of cable connections and of the dashboard mounting of the meter itself.)¹⁵

Documentary audits are reviews of the odometer readings that are performed through transactions between policyholders and 3rd parties, e.g., the readings made at the transfer of ownership and attested to by both buyers and sellers on the title certificates.¹⁶ There are a number of other transactions involving automobiles that provide information for auditing. For example, the Pennsylvania consumer code requires garages to record odometer readings on work orders when cars are accepted for repairs and again when they are returned to owners.¹⁷

14. Inspection of cars applying for physical damage (Collision and Comprehensive) coverage is required by law in New York and California, and is under consideration in other states. In an opinion survey of car owners, 83% of respondents would be "very or somewhat willing" to take their cars to an insurer for inspecting and photographing when taking out a policy. INS. RESEARCH COUNCIL, *Public Attitude Monitor 1991*, page 12.

Technical columnist Armando Castellini, who is an insurance educator and New Jersey broker, noted that the inspection of cars by insurance companies ("underwriting report") is "something almost all companies have discontinued with the predictable results that (1) insureds lie about the use of their cars and who uses them, (2) producers lie about their clients to 'low-ball' premiums, and (3) the insurance companies overcharge the large majority of policyholders to make up for the sloppiness of the system." INS. ADVOCATE, May 4 1991.

In opposition to New Jersey legislation mandating company inspections of newly covered cars for physical damage coverage, Allstate Insurance estimated the cost at \$13 per car. The maximum charge for an emissions inspection in Pennsylvania is \$8. 75 Pa.C.S. Sec. 4706 (d).

15. Tamper-evident, serial-numbered company seals made of flexible film face stock are attached with strong adhesive to the ferrules and casing at either end of the odometer cable. Any attempt to turn a ferrule to detach the odometer cable visibly tears the face stock.

The cost of these seals in quantity would be 2 cents to 5 cents each, according to Valley Forge Tape and Label Co., Exton Pennsylvania, May 1992, for a total at of 15 cents per car at most for three seals.

16. Title certificate odometer readings gain further validity through state law for controlling odometer fraud in car sales:

75 Pa.C.S. Sec. 1105 (c) Title transfer odometer readings--The department shall compare the odometer reading of the vehicle each time a certificate of title is transferred and ascertain the reported mileage against the most recent previously reported mileage for the vehicle.

Such a review presumably would screen for a decrease, or an abnormally low increase, in the car's reported mileage from a previous transfer.

A PennDOT pamphlet *Odometer Roll Backs* distributed by the Office of Attorney General, Bureau of Consumer Protection gives instructions if a car buyer suspects fraud to write the Bureau of Motor Vehicle & Licensing Information Sales for "a photocopy listing previous title holders, their addresses, and in some cases, the car's mileage at the time of sale if PennDOT has such information available." Pub. 160 (2-85).

Dealers "shall retain for four years each odometer mileage statement which he receives. He shall also retain for four years a photostat, carbon or other facsimile copy of each odometer mileage statement which he issues." 75 Pa.C.S. Sec. 7133 (a).

17. 37 Pa.Code Sec. 301.5. The two readings control unauthorized use of the car while it is in

As a condition of annual policy renewal, the Company requires that a physical audit be done on each car it insures. The odometer readings and dates of these audits are included on the insurance ID cards, Exhibit C. Policyholder convenience is served by specifying renewal months rather than deadline dates.¹⁸ Repair garages view the audits on behalf of insurance companies as a business opportunity.¹⁹

To secure insurance on cars just bought, a copy of the title certificate or mileage disclosure statement from the seller provides the initial odometer reading to the insurance company for binding coverage until the initial company physical audit is done, within 30 days.

IV. Stealing insurance protection

Stealing protection from auto insurance companies can be done in several ways under the mile/year system: biasing the drive train to make the odometer read low, resetting the odometer, and stopping the odometer. Federal and state laws against tampering with odometers penalize these prohibited activities with fines and jail.²⁰ This section describes procedures used in the mile/year test system to control theft of insurance.

(continued)

the custody of the garage.

18. With most or nearly all of premium charged at mile rates, there is relatively little per-year premium put at risk of non payment in the mile/year system through extending the effective due date from the anniversary within the month to the end of the month.

19. Sworn testimony by an owner of a garage licensed to do state inspections. The charge for odometer sealing, calibration, reading, and reporting to an insurance company was estimated at less than \$10. Reproduced Record, *Pennsylvania NOW v. Ins. Dept. of Pennsylvania*, Commonwealth Court, (No. 1276 C.D. 1987 and No. 276 C.D. 1988) at 2441a.

20. Federal Odometer Act of 1972 (15 U.S.C. Sections 1901, 1981-1991); Pennsylvania Vehicle Code (75 Pa.C.S. Sections 7131-7139).

Section 7132 of the Pennsylvania vehicle code 75 Pa.C.S. states:

Prohibited activities relating to odometers.

(a) Devices causing improper odometer reading.--No person shall advertise for sale, sell, use or install, or cause to be installed, any device which causes an odometer to register any mileage other than the true mileage driven which is that mileage driven by the vehicle as registered by the odometer within the manufacturer's designed tolerance.

(b) Change of odometer reading.--No person shall disconnect, reset or alter, or cause to be disconnected, reset or altered, the odometer of any motor vehicle with intent to change the number of miles indicated on the odometer.

(c) Operation with disconnected or nonfunctional odometer.--No person shall, with intent to defraud, operate a motor vehicle on any street or highway knowing that the odometer of that vehicle is disconnected or non-functional.

Summaries of twenty years of odometer-fraud case law, as well as federal and state statutes and regulations, are contained in: NATL CONSUMER L. CENTER, *Odometer Law*, (1988) and *Odometer Law Cumulative Supplement* (1991).

Surprisingly, keeping the odometer cable unhooked for much of the time, and resealing it with a stolen or counterfeit seal before the next company audit is unlikely to result in significant theft of insurance protection. According to the policy provisions of the test system, a car operating with the odometer disconnected is simply being driven without insurance: no mile-rate premium is being earned and no protection is being provided.²¹ Even if disconnecting and reconnecting of the odometer should go unnoticed, there is no theft of insurance protection. If the odometer is sealed and operating, premium is being paid for the protection provided.

Low-reading odometer. Odometers can be made to read less than the actual mileage driven without breaking any seals by increasing tire sizes or decreasing axle ratios. The premium savings, however, would appear to be small compared with the effort, the risk of severe federal and state penalties for odometer fraud, and the adverse effect on the car's operating characteristics.²² The policyholder would have to switch from standard to larger wheels or a higher axle ratio after the annual audit and calibration, and reverse the change before the next annual audit. To cut the mileage readings about 10% from actual distance traveled would require a 2-inch increase in tire diameter. The car's insurer would be defrauded thereby of \$100 for every \$1,000 worth of protection provided. If the use of oversized tires to steal insurance protection should ever become a problem, however, it could be controlled by recording the tire size on the insurance ID card with the warning that use of a different tire size without a recalibration voids the on-the-road protection. Switching drive axle gear ratios before and after each annual audit would require even more effort than changing tire sizes, but can be controlled if necessary by application of a single seal to the axle housing.

21. Protection would be received without premium payment only for accidents after which the policyholder was able to reconnect and seal the odometer without being observed.

Although using a car with the odometer cable unhooked is not stealing insurance protection because protection does not exist, use of a car in this condition violates the compulsory insurance law, which is the subject of section VI, *infra*.

22. The manufactured design optimizes handling performance with given tire sizes and axle ratios. A "slow" speedometer and low-reading odometer are inconveniences, at least whenever speed limits and map distances are of interest.

EXHIBIT F
Reset Odometer Example

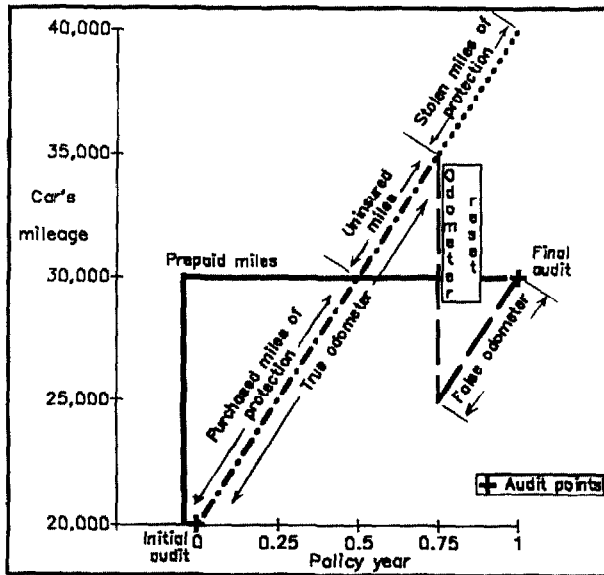
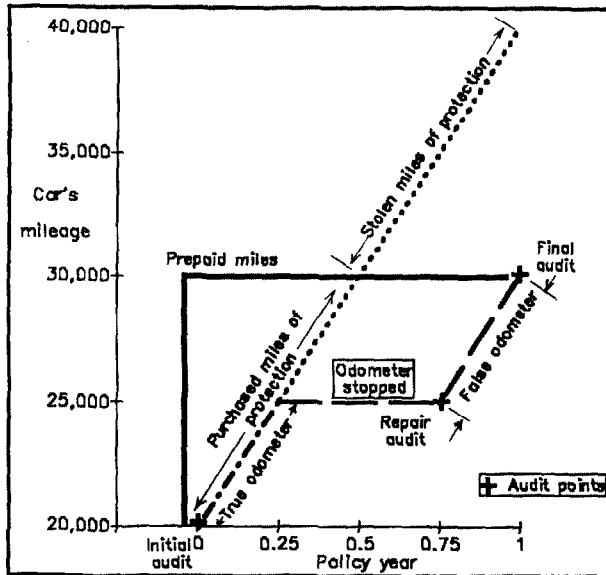


EXHIBIT G
Stopped Odometer Example



Some years ago, when odometers had metal gears that could stand high speeds, dishonest car dealers ran odometers rapidly in reverse by unhooking the cable and attaching a high-speed drill. For several decades, however, plastic gears have been standard in odometers. Such gears are durable in service because even the most rapidly revolving one-tenths digit turns very slowly—one rpm at sixty mph. These gears heat up and break, however, when attempts are made to back up the odometer rapidly with an electric drill.

Professional insurance theft by resetting the odometer. Criminal experts can turn back odometer tumblers with a thin pick. Charging \$30 to \$50 per two-minute job, the criminal can remove several tens of thousands of miles from the odometers of late model high mileage fleet or lease cars to increase resale value an average \$1500.²³ Given the fact that insurance rates for full coverage of relatively expensive cars in high-rated territories can exceed \$0.10 a mile, a policyholder could defraud the insurance company of \$1000 in premium each year by paying \$50 to have the ten thousands tumbler rotated back one digit.²⁴

To counter such major odometer fraud in the mile/year system, odometer auditors and inspectors look for telltale signs of rollback tampering that can lead to convictions of the policyholders responsible. The following example shows how annual audits can control and constrain this kind of theft of insurance protection.

Exhibit F. In the initial audit, the odometer of a hypothetical insurance thief's car reads 20,000 miles. Although the car will be driven 20,000 miles during the coming year, the thief plans to have the odometer rolled back 10,000 miles and therefore only buys ten thousand miles of protection. To keep from producing an

23. Connie McNamara, *Odometer cheats get a lot of mileage, officials say*, Harrisburg Sunday Patriot News, June 28, 1987.

24. Patrons of meter-tampering criminals take considerable risk. For example, when a New York lock picker who reduced gas and electric meter readings by half was caught, he cooperated with the prosecution of his clients--by wearing a hidden tape recorder while being paid--in exchange for reduced punishment. In addition to facing criminal prosecution, his customers are to pay restitution for tens of thousands of dollars of stolen gas and electricity. N.Y. Times Sep. 27, 1985, p.2 45 L.I. *Businesses Accused of Cheating Utility Meters*.

More recently in the Philadelphia region, criminal experts in altering electric meters to underrecord actual consumption up to 58% were involved in tampering with more than 50 meters for Bucks County homes and businesses. Phila. Inquirer, Jan 21, 1992, B2 *Third person faces charges in Bucks meter tamperings*.

On the other hand, meter-tampering criminals can be caught with the help of clients hoping to escape punishment. *56 had TV boxes rigged to cheat, police say*, Patriot-News (Harrisburg, Pa.) May 8, 1992. Facing \$300 fines and 3 months in jail, customers who paid \$35 to \$100 to two criminal experts to alter pay-TV meters, are cooperating in their apprehension.

odometer reading that is less than the initial audit (20,000 miles) and thus voiding protection, however, resetting the ten-thousands digit has to be delayed until after 30,000 miles is passed at mid year. The rollback is done in the example at 9 months (0.75 year) to reduce the reading from 35,000 miles to 25,000 miles. Apparently unknown to the thief, however, there was no insurance protection for the last 5,000 miles before the rollback because these miles exceeded the 30,000 prepaid-miles limit. Therefore, the amount of protection actually stolen in the example is not 10,000 miles, but only 5,000 miles, Exhibit F.

A more sophisticated policyholder than the insurance thief described above could steal several thousand dollars of auto insurance protection annually on a fully covered expensive car in a relatively high-rated area.²⁵ It is significant that auto insurance companies and their honest policyholders are not the only victims of odometer rollbacks: providers of car warranties and mechanical breakdown insurance, and buyers of used cars are defrauded as well. Widespread public awareness of the seriousness of odometer tampering has developed from news reports on a decade of prosecution of strong federal and state odometer fraud statutes.²⁶

Amateur insurance theft with a stopped odometer. Odometer failure, whether spontaneous or induced, presents an opportunity for theft of insurance protection.²⁷ According to policy language, insurance coverage is void while the odometer is stopped unless the company is notified. Nevertheless, to protect the validity of a claim, a policyholder can always assert that the odometer had failed just before the accident or was broken as a result of it. Test system procedures are designed to control such theft.

25. Apparently some sophisticated car owners violate mandatory insurance requirements. State police testimony pointed out that "It is just as probable to find a counterfeit inspection sticker or false insurance identification card associated with a Mercedes Benz as a Chevrolet. The motivation to avoid the law is economic, whether the owner or lessor can afford the insurance or not." House Insurance Committee hearing April 25, 1991, Tr. 117. Under the mile/year system, federal and state odometer anti-tampering law provide additional strong sanctions against cheating.

26. Although the focus has been on professional thieves who tamper with tens to hundreds of odometers, some individuals are being punished. *E.g.*, a Baltimore police lieutenant recently was indicted for theft for having his own odometer rolled back to increase the car's resale value. *Baltimore Sun, Brief*, April 22, 1992.

27. An odometer cable can be caused to wear rapidly and break by pulling its casing into an overly tight curve. Society of Automotive Engineers specifications put the minimum radius of curvature at six inches. SAE J678 Dec 88.

In addition to the inconveniences of not having a speedometer and odometer (note 22, *supra*), cars built after 1980 will not run efficiently with the odometer cable broken because it provides a signal to the ignition/fuel-injection computer. R. Morse, Chief of Odometer Fraud Staff, USDOT, at the

Should an odometer stop, policyholders are instructed on the ID card to stop driving and to telephone the Company in order to maintain coverage, Exhibit C (*supra*, page 8). The company responds with a confirmation code, a time limit for repair, and any other instructions or limitations appropriate for the situation.²⁸ Before any seal is broken to replace the odometer or its cable, a mandatory first step is to have a physical audit to get the reading and inspect the seals. This audit comes between annual audits and shows the average driving before and after the odometer failure. An unexplained and marked difference in the averages indicates possible premium fraud, which can be further investigated. A hypothetical example of protection theft shows how the audits are used.

Exhibit G. Actual use of a hypothetical car is 20,000 miles during a policy year. At the beginning of the year the odometer reads 20,000 miles and 10,000 miles of insurance protection is bought for the coming year. The odometer cable breaks (or is broken) at 0.25 year with a reading of 25,000 miles, but is not reported to the Company until 10,000 miles more have been driven in the next half year. If an accident happens during this 10,000 mile period, the policyholder can claim coverage with the excuse that the odometer "just broke." With the excuse sustained, the Company has provided coverage without collecting premium for 10,000 miles. The excuse can be challenged, however, after the end of the policy year with audit information.

At the repair audit the odometer shows the same 25,000 mile reading it did six months earlier when it stopped. A "miles-driven" line joining the initial and repair audits would show 5,000 miles in 9 months, which is a rate of 6,670 miles per year, Exhibit G. An increase of 5,000 miles on the odometer in the next three months between the repair audit and next annual audit, however, indicates the true driving rate is 20,000 miles per year. Even though such an apparent strong change in car use might be insufficient to prove theft of insurance protection, it nonetheless alerts the test system to get more evidence on the actual amount of driving done. Another odometer failure in a following year would be even more suspicious. Stealing insurance protection through odometer tampering is a risky way for policyholders to try to save money.²⁹

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11th Ann. Conf., National Odometer Enforcement Association, August 12, 1991.

28. If the failure happens on a trip, the insurance company specifies that coverage stays in effect over the route for completion of the trip. A value for the unrecorded miles of exposure is derived from the route distance.

29. This kind of amateur theft is akin to that in which householders steal gas by running a bicycle inner tube around the meter or steal electricity by removing the meter and inserting spoons or forks

V. Premium charges for nondriving periods

If the possibility that policyholders may be able to steal insurance protection is cause for concern, then the possibility that companies may be able to charge premium for driving coverages during nondriving periods must be an equally serious concern. This section examines various administrative provisions made for periods of nondriving and the effects they have on premiums. In the current year system, rate manual rules allow interruptions of insurance protection and premium charges during nondriving periods, such as:

SUSPENSION OF COVERAGE, SEASONAL USE, WITHDRAWAL FROM USE

A. Suspension of Coverage

Coverage afforded under a policy insuring a motor vehicle may be suspended during the time the vehicle is withdrawn from service. The coverages suspended *afford no protection* under the policy during the period of suspension.
* * * *

The continuation of certain coverages during the period of suspension may be desirable; e.g. comprehensive [coverage for nondriving losses].
* * * *

Premium credits on suspended coverages will be computed pro rata for the period of suspension.

General Rule 106 A, State Farm Mutual Auto. Ins. Co. (emphasis added)

The administrative problems of this and several other ways that the year system currently handles nondriving periods can be compared to the automatic response of the mile/year system to nondriving periods:

Year system

- When there is a period of "withdrawal from use" accompanied by "suspension of coverage," as the above manual rule provides, prepaid premium for the non-covered period is refunded to the individual policyholder.

Example: Hypothetical car considered below in 2nd policy year.

- When many policyholders in an identifiable group are not driving, a portion of prepaid premium is refunded uniformly to all policyholders in the group.

Example: Policyholders who served in the Middle East armed forces in 1990 and 1991, were refunded prepaid premium for a fraction of the time they were

(continued)

across the connections. Control on such theft includes monitoring consumption for anomalous patterns and abrupt changes. P. VALENTINE, *On the Trail of Power-Hungry Thieves*, Wash. Post, April 6, 1991 at B1.

overseas, despite the fact that companies had no way of knowing whether the cars actually were withdrawn from use or even driven less in the owner's absence.³⁰

- When economic recession triggers a reduction in claims because many policyholders drive less, insurance companies provide uniform refunds ("dividends") to all policyholders without distinguishing whose cars actually were driven less.³¹

Example: Owing to a decrease in accident claims since the current recession started in mid-1990, State Farm made statewide refunds in 12 states reaching 20 percent of semiannual premium.³²

- When individuals interrupt driving for periods of time, in most cases no refund of prepaid premium occurs at all.

Example: Hypothetical car considered below in 3rd and 4th policy years.

Mile/year system

- Only the miles driven by each car, as recorded on its odometer, determines individual premium consumption and obviates the need for group refunds. With miles prepaid, the car is fully insured whenever driving is resumed after a nondriving period. Therefore, no administrative costs are incurred for suspending and reinstating insurance.

Example: Hypothetical car considered below over four policy years.

30. Geico Insurance Company's "Desert Shield dividend" consisted of a 25% premium credit for the period on active duty in the Middle East in 1990 as certified by a superior officer. Source: Geico forms (P-294a & P-295) sent to policyholders on request.

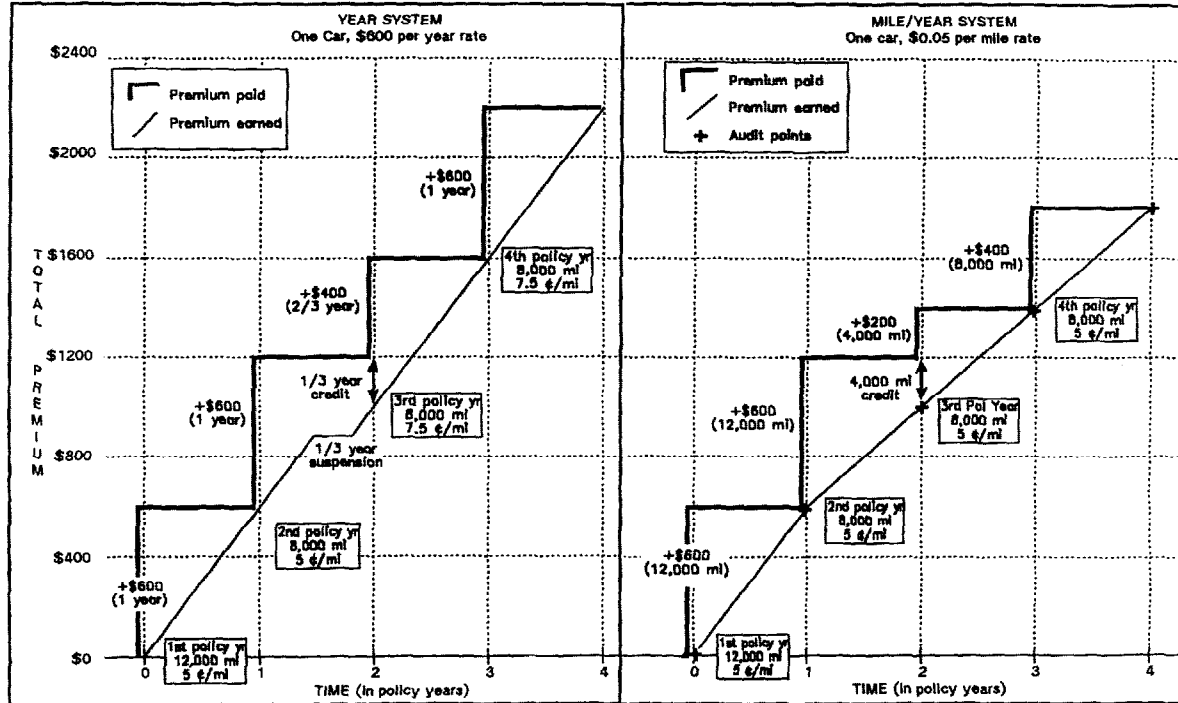
This refund appears to assume that the estimated 16,000 Geico-insured cars eligible were on average driven 75 percent as much as usual while their owners were overseas. (I.e., for every four months that the policyholder was overseas, one month's prepaid premium was refunded.) A Geico official's reply to a reporter's question about an equivalent "Desert Storm" dividend for 1991, however, suggests that the refunds were not based on a cost-savings estimate, but instead on the budget for public relations: "For this year, we don't have an idea as to whether the company is making a profit or not, so we can't make a decision yet." NAT'L UNDERWRITER, *Geico To Pay Desert Shield Auto Dividend*, Feb. 4, 1991.

31. Speculation that "a lot of cars are up on blocks" by the State Farm vice president for Pennsylvania was cited by the president of the Insurance Federation of Pennsylvania to dramatize the marked drop in claims following the July 1990 onset of the current recession. Transcript of testimony before the House Insurance Committee November 14, 1991, page 112.

32. J. Commerce, *State Farm to Refund Millions in Car Premiums*, Dec. 18, 1991, at 9A. State Farm's reported explanation was that "claim costs were less than anticipated." At rate hearings and in other forums, however, officials of State Farm and other auto insurance companies directly attributed a drop in claims to a recession-related decrease in driving and a rise in gasoline prices. In Pennsylvania where State Farm had litigated strongly against premium reductions mandated by Act 6 of 1990, it seems clear that the company did not take the nearly 6 percent increase in July 1991 authorized by the law because of the drop in claims caused by the recession and gasoline price rise. The effect of the recession on claims is evidently continuing because the State Farm Pennsylvania rate manual pages effective May 15, 1992 show only moderate changes (about -6% to +7% depending on coverage and territory).

EXHIBIT H

Example: Effects of NonDriving Periods on Premiums



331

Exhibit H. A hypothetical example involving one car compares the response of each system to a decrease in driving from 12,000 miles during the first policy year to 8,000 miles a year for the next three years. Graphs of premium vs. time (in policy years) for each system show the relationship between premium prepaid and premium consumed throughout the year.

Prepaid premium is represented by a stepped plot in the graph for each system. (Compare with the graph of odometer readings vs. time for the mile/year system in Exhibit B, *supra*, page 7). The vertical segments are payments made shortly before the start of each policy year.³³ The horizontal segments represent the passage of time between additional premium payments.

Year system. Premium for all coverages is earned proportionally with time, as shown by the inclined, lower line. By the end of the first policy year, all of the \$600 has been earned. At the beginning of the second policy year, \$600 is again paid in advance. During this year, however, the car is not driven for four months (1/3rd year) and insurance coverage is suspended for this period.

The earned-premium plot is flat with time during the 1/3rd year period of suspension because no insurance is in force. When coverage is reinstated at the end of the period, the earned-premium plot resumes proportionality with time. Because of the suspension of insurance, however, 1/3rd (\$200) of the prepaid premium remains unearned at the end of the 2nd policy year. This amount is credited against the \$600 premium due for the 3rd policy year so that only \$400 is paid.

In the third and fourth policy years, driving remains at 8,000 miles annually, but the periods of non driving are spread throughout the year. The periods are either shorter than the Company allows for suspending coverage, or the car may be needed occasionally during the longer periods and there would not be time to reinstate insurance and get the license plate back from PennDOT.³⁴ Therefore, even though mileage has not increased from the second policy year when \$400 was paid for insurance, the policyholder pays \$600 per year because coverage cannot be

33. Payment is shown 20 days before the beginning of the policy year.

34. Given the fact that suspension of insurance benefits only the policyholder while reducing both premium income and commissions for the company and agent with no offsetting transaction charges, it is not surprising that few policyholders know that coverage can be suspended during periods of nondriving. Sworn testimony by actuaries in *Pennsylvania NOW v. State Farm* indicates reluctance of companies to suspend coverage, because "someone has to make a notation on the policy and recalculate the premium." 6 J. INS. REG. 243, 282 (1988).

suspended. The policyholder's cost per mile of protection increases by 50 percent from 5 cents to 7.5 cents for the final two years solely because the year system makes it no longer practical or even possible to suspend coverage during non-driving periods, as it was in the 2nd policy year.³⁵

Mile/year system. At an assumed rate of 5 cents a mile for coverage of the hypothetical car, the test system produces a \$600 premium for 12,000 miles in the 1st policy year and a \$400 premium for 8,000 miles in the 2nd policy year, as did the current year system. The annual odometer audits, connected by lines, show the increases in miles recorded by the car's odometer as the miles of premium earned.

In the 3rd and 4th policy years, however, when driving continues at 8,000 miles a year, the mile/year system premiums continue to be \$400 at mile rates, equal to the \$400 premium at the \$600 per year rate when coverage was suspended for 1/3 year. Mile-rate premiums are \$200 less than the year-rate premiums in the final 2 policy years simply because, as noted above, the year-rate coverage could not be suspended for part of the year as it was in the 2nd policy year.

Quasi-suspension of coverage produced by the year system. Insurance enforcement apparently makes suspension of coverage both difficult for companies to administer and costly for policyholders to use, judging from the special provisions companies make for suspending required coverages. For example, State Farm has added a Pennsylvania section 106 C to its rule 106 A (quoted above), resulting in what appears to be a quasi-suspension of coverage.

SUSPENSION OF COVERAGE, SEASONAL USE, WITHDRAWAL FROM USE

A. Suspension of Coverage

* * *

Any coverage may be suspended unless it is *required by statute* to remain in force. (See Section C for statutory coverages.)³⁶

* * *

35. Lienholders also provide an impediment to suspension of coverage, to judge from the intervention that Geico provided for Desert Shield policyholders who stored their cars while overseas. The Geico letter to the service person accompanying the dividend certificate states: "If your car is in storage but you've been told by a lien holder that full coverage must stay in effect, let us know. We've intervened successfully in getting some lien holders to waive this requirement for our insureds."

36. Despite Rule 106's implication here that "statutory coverages" means insurance that car owners must buy, the coverages listed in Rule 106 C include non required Combined Benefits, Uninsured Motor Vehicle, and Underinsured Motor Vehicle in addition to the Bodily Injury Liability, Property Damage Liability, and Medical Payments coverages that are required by Pennsylvania law. The law requires companies to make these additional coverages available, but does not require their purchase. 75 Pa.C.S. Sec. 1791-1792.

C. Premium Credit on Statutory Coverages for Vehicles Withdrawn from Use

During the period when a motor vehicle is withdrawn from service, the coverages indicated below may, at the option of the insured, remain in force at 40% of the otherwise applicable premium.³⁷ The period of withdrawal must be for at least 30 days, and the insured must complete a *certificate of withdrawal*.

General Rule 106 A & C, State Farm Mutual Auto. Ins. Co. (emphasis added)

This option of keeping statutory coverages in force on a car while it is not being driven seems to be a response to the Pennsylvania requirement that the car's registration card and plate must be returned to PennDOT while insurance is not in force.³⁸ The "certificate of withdrawal" specified above is a company form to be signed by the policyholder which states: "I hereby certify that the motor vehicle described below will be withdrawn from use for a period of not less than 30 days from the date indicated." The policyholder further agrees on the form that "In recognition of the fact that my motor vehicle will not be used, the premium for the coverages required by law will be reduced."³⁹ The question is: why is the premium not reduced to nothing if it is believed that the car will not be used? Why is it worth 40 percent of the premium to the owner to keep the license plate? Why does the company need to get 40 percent of premium to keep driving coverage on a nondriven car?⁴⁰ Such an arrangement argues that the company expects the car to be driven despite its nominal "withdrawal from service."⁴¹

37. Apparently the basis to which the 40% of full rate applies is not just the rate for the required minimum amounts of protection, but for any increased protection amounts--"limits"--of each coverage chosen as well.

38. Although California also requires all cars to be insured, Rule 106 in the State Farm manual on file at the California insurance department (Oct. 9, 1991) does not have a section "C" with its special provisions for required or statutory coverages. The difference may be that some enforcement provisions, including criminal penalties and proof of insurance as a registration requirement, were allowed to sunset in California in 1990. NATL UNDERWRITER, *Change In Regulators Worries Calif.*, Jan. 7, 1991, at 4. (Rule 106 "B" provides for "Seasonally Used Farm Trucks," and is nearly identical for both states.)

39. State Farm Insurance Companies form G-4658, 7 Rev. 07-91 "Notification that Motor Vehicle is Withdrawn From Use."

40. What this provision means in terms of premium cost to policyholders may be assessed from the example of Exhibit H, above. During the 2nd policy year the car was not driven for four months, and the "suspension of coverage" rule was used to get a refund of \$200 on a \$600 prepaid premium. Assuming that the \$600 premium was only for State Farm's "statutory" coverages, State Farm would have retained 40%, or \$80, of the refund to keep enough coverage so that the policyholder presumably could keep the car registered and not have to return the license plate and registration card to PennDOT.

VI. Insurance enforcement and compliance

This section examines enforcement provisions of mandatory insurance under the current *year* system and under the *mile/year* test system.⁴² In each case, the analysis assesses the effect of these provisions on both enforcement efficiency and the ability of the car owner to achieve compliance.

With respect to the intent of the law that all cars have minimum insurance while they are *being driven*, two kinds of enforcement are involved: at-car verification of insurance when it is certain that the car is being driven; and indirect enforcement through the registration-license plate process when the car may or may not be being driven.

Direct at-car enforcement. A random sample of cars being driven receive at-car insurance verification by police and state officials through the happenstance of accident investigation and citations for moving violations where verification is generally required, and in the course of roadside checks for various reasons where insurance verification may be included.⁴³ Under both systems, the at-car verification is determined by the policy expiration date on the car's insurance ID card. Under the *mile/year* system, full verification also requires that the odometer reads less than the ID card's prepaid miles limit, is operating, and shows no signs of tampering.⁴⁴

Although at-car proof of insurance is required by annual safety inspections and provides a strong incentive to get insurance, few uninsured cars are likely to be

41. Since the 40% charge is applied to premiums rated by territory and other class categories, it is not just an administrative fee, but varies presumably to reflect different driving conditions. Under rate regulation law, State Farm is supposed to have claim-cost statistics to justify the charges. 40 P.S. Sec. 1183(c).

42. Minimum coverage required is \$15,000/\$30,000 bodily injury liability, \$5,000 property damage liability, and \$5,000 medical payments. 75 Pa.C.S. Sections 1702 and 1711.

43. Accidents, and to a large extent law enforcement stops, are inherently processes of random sampling of the cars being driven at the time. INS. INDUSTRY COMMITTEE ON MOTOR VEHICLE ADMIN., *Guidelines for Compulsory Liability Insurance Enforcement*, July 1992.

The sample size for checking insurance compliance via accidents may be approximated from the 1990 PennDOT report: 234,814 reported driver involvements gives the number of vehicles sampled, which is about 3% of the 8.7 million registered vehicles which were checked for insurance in this way. If traffic violation checks were verified on approximately the same number of cars, then the proportion of cars randomly checked for insurance this way would be less than 10% annually.

In vehicle law enforcement checks, police officers radio in driver's and registration information to PennDOT computers for verification. Insurance information, although entered into the PennDOT system, could not be checked the same way in 1991. State Police testimony before the House Insurance Committee, April 25, 1991, Tr. 133.

identified this way. Owners of uninsured cars are able to bypass this requirement illegally, as described by the state police.⁴⁵

Under the *mile/year* system, the company odometer audits enhance enforcement of insurance because direct company involvement and self-interest in verification improves control on illicit ID cards beyond what police officials and inspection stations can do.⁴⁶ Furthermore, policyholder no-shows for renewal or final audits (dropouts) indicate that the cars have been driven uninsured without prepaid miles of protection. A gap in protected miles would be evidenced by odometer readings or signs of tampering even if insurance is re-initiated with another company. Enforcement sanctions could be invoked for owning a car driven without insurance, or for odometer tampering.

Indirect enforcement. The logic behind indirect enforcement through the license plate issue and revocation process is that requiring insurance on a licensed car to be kept continuously in force assures that insurance will be in force on the car whenever it is *being driven*. Specifically, the law requires that a license plate may be retained only while insurance is in force.⁴⁷ When insurance coverage terminates, sanctions can be avoided by not driving the car and by returning the license plate to PennDOT within 21 days if insurance has not been reinstated or replaced.⁴⁸

44. Owning a car that is *being driven* with no insurance in force is a direct violation of the law's intent. It is fully sanctioned by a \$300 fine and three-month revocations of the license plate and the owner's driving license. The restoration fee at the end of the suspension periods is \$50 for each license. 75 Pa.C.S. Sections 1786 (d), 1786 (f), & 1960.

45. Illicit inspection stickers are used to avoid the inspection altogether, or illicit insurance ID cards or other insurance documents are used to defeat the verification process at the inspection station. Testimony to the House Insurance Committee, April 25, 1991, by Lt. Colonel Robert Hicks, Tr. 102-134.

Although the law requires inspection stations to report any uninsured cars seeking inspections, it seems that stations have little to gain by reporting the few customers unaware of the insurance requirement for inspection. 75 Pa.C.S. Sec. 4727 (d)(2).

On the other hand, at-car information for the *mile/year* system is collected as part of the inspection process because mileage readings for verified-working odometers are reported to PennDOT and help build an audit trail for each car. (Two odometer readings are reported: "present odometer reading" and "odometer reading on old inspection sticker." PennDOT *Inspection Record*, form TS 431 (11/81)).

46. The company audits may or may not be done in conjunction with the state safety inspections according to individual arrangements between auto insurance companies and private inspection stations.

47. The partial sanctions applied for violation are the three-month revocation of the license plate followed by a \$50 reissuing fee. 75 Pa.C.S. Sec. 1786 (d); Sec. 1960.

The law appears to specify the 3-months suspension of registration penalty only for cars being driven without insurance, and not just for keeping an uninsured car's license plate. (75 Pa.C.S. 1786 (d).) According to testimony by PennDOT, however, the 3-month registration suspension periods are being applied to cases where the license plate has been kept for an uninsured car, without establishing

Whenever insurance for a car is terminated and driving coverage is not in force, the insurance company is required by law to notify PennDOT.⁴⁹ When suspended insurance is reinstated however, it is the policyholder who must provide the insurance information to PennDOT. PennDOT in turn sends a sampling of such reports to the Company for verification.⁵⁰ The Company may also notify lienholders when the car securing the loan has no collision insurance, and also when the coverage is restored.

Under the current *year* system there is no reliable way to establish whether or not a car is actually being, or has been, driven without insurance beyond scattered information that is produced by the random sampling process during at-car enforcement, as described above. Under the *mile/year* system, however, the odometer serves as a witness to prove nondriving for the policyholder, or to prove uninsured driving for enforcement purposes.

Compliance. Under the current *year* system, premium payments are fixed costs of car ownership with inevitable due dates. A policyholder in straitened circumstances has no legal option but to lapse insurance, surrender the license plate, and do without the car. If a policyholder cannot meet a deadline for a premium payment, and cannot suspend coverage to stop or lower premiums owed, it is not surprising that there may be little real choice but to drive illegally without insurance.⁵¹

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that the car was actually being driven uninsured. (Douglas Tobin, House Insurance Committee hearing transcript Oct. 30, 1991, page 168.)

48. 75 Pa.C.S. Sec. 1786 (d)(1) & (g)(2). The instruction given by PennDOT's public information telephone (March 1992) for interrupting insurance while the car is not being driven is to send in the license plate (not the registration card) to PennDOT with a letter of explanation. According to PennDOT testimony before the House Insurance Committee, returned plates are destroyed and new plates issued with no charge when insurance is again in-force. Douglas Tobin, Oct. 30, 1991, Tr. 169.

49. 75 Pa.C.S. Sec. 1786 (e)(2): "Obligations upon termination of financial responsibility--An insurer who has issued a contract of motor vehicle liability insurance . . . shall notify the department in a timely manner."

Companies provide notices of cancellation of insurance to PennDOT on computer tape in batches covering a week or two of activity. NOW telephone information from Chairman's office, Erie Insurance Group, Feb. 1, 1991.

50. PennDOT's goal is to have companies verify the insurance information provided on registration forms of 50 percent of Philadelphia registrants and 25 percent of registrants elsewhere. Joint State Government Commission, "Insure-the-Driver Program" study pursuant to Act 6 of 1990, Section 29 (1991), page 16. (These goals would require about 2 million company verifications annually.)

51. Under the current year system, considerable administrative effort is expended in sending billing and nonpayment-cancellation notices to installment payers who are on very tight budgets. This is especially true for assigned-risk plans in high-rated territories. An active and ongoing discussion

Under the *mile/year* system, in contrast, the only fixed costs for keeping mandated insurance in force are the cost of the annual odometer audit plus any administrative charges (about \$20 total per year). Premium for driving coverages is earned by the company only while the car is being driven. To the extent that the *mile/year* system reduces mid-term lapses and eliminates suspension of coverage transactions, there is a comparable reduction of state and company administrative expense for recalling and reissuing license plates, with attendant insurance verifications. The *mile/year* system makes required insurance an operating cost and promotes compliance by providing the public with a means of direct individual control over the amount and timing of premium payments.

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June 22, 1992 #486

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continues in the weekly INS. ADVOCATE column *Views of a Storefront Broker* by Michael Carbajal in New York City. April 18, 1992, for example, on the size of the premium deposit needed and the administrative expense to companies and agents. In Philadelphia the minimum cost assigned risk plan premium is \$696 annually, paid \$211 down (30%) and \$98 per month for five months, as advertised for months in *The Review* (Chronicle, S. Phila.), e.g., April 16, 1992, at C14. In the past, eighty percent of assigned risk car owners did not pay all of the installments, which are billed, and were canceled in their first year. JOINT STATE GOVT COMM. staff analysis, *Insure-the-Driver Program for Philadelphia* (1991) at 15.