

PAY- AS-YOU- DRIVE

Some Considerations
Before You Hit the Road



BY KEVIN BINGHAM, PETER BOYD, MICHAEL GREENE, AND ROB BROWN

Consumers need to weigh the ecological benefits against privacy concerns about the digital trails they leave.

VOLATILE GAS PRICES AND CONCERNS ABOUT GLOBAL WARMING have sparked a lot of interest in pay-as-you-drive (PAYD) automobile insurance rates. As insurance departments, state legislatures, and insurance companies across the country consider the implications of introducing PAYD, journalists and pundits are ramping up their scrutiny with articles that range from considering the beneficial impact on the environment to citing concerns about Big Brother and possible fraud by drivers who enroll in such programs. At this point, it's hard to predict the ultimate outcome of this debate, but one thing is clear: Actuaries will play a critical role in shaping the final PAYD rating structure. In order to ensure the smooth and successful adoption of PAYD plans, we believe actuaries must be ready to proactively address a number of important issues.

Big Brother on the Road

Privacy and security issues have always been a big concern for Americans as technological advances continue to enhance Big Brother's ability to monitor our behaviors and actions. This is especially true when it comes to America's love affair with the car and the freedom of the open road.

Historically, insurance underwriters' consideration of vehicle usage focused on the self-reporting of work versus pleasure and the distance of the commute. A simple description of usage, such as "Commute to work: under 10 miles," was all that was tracked. Some forms of PAYD insurance employ advancements in GPS technology that cause insurance consumers to share a treasure-trove of information, including:

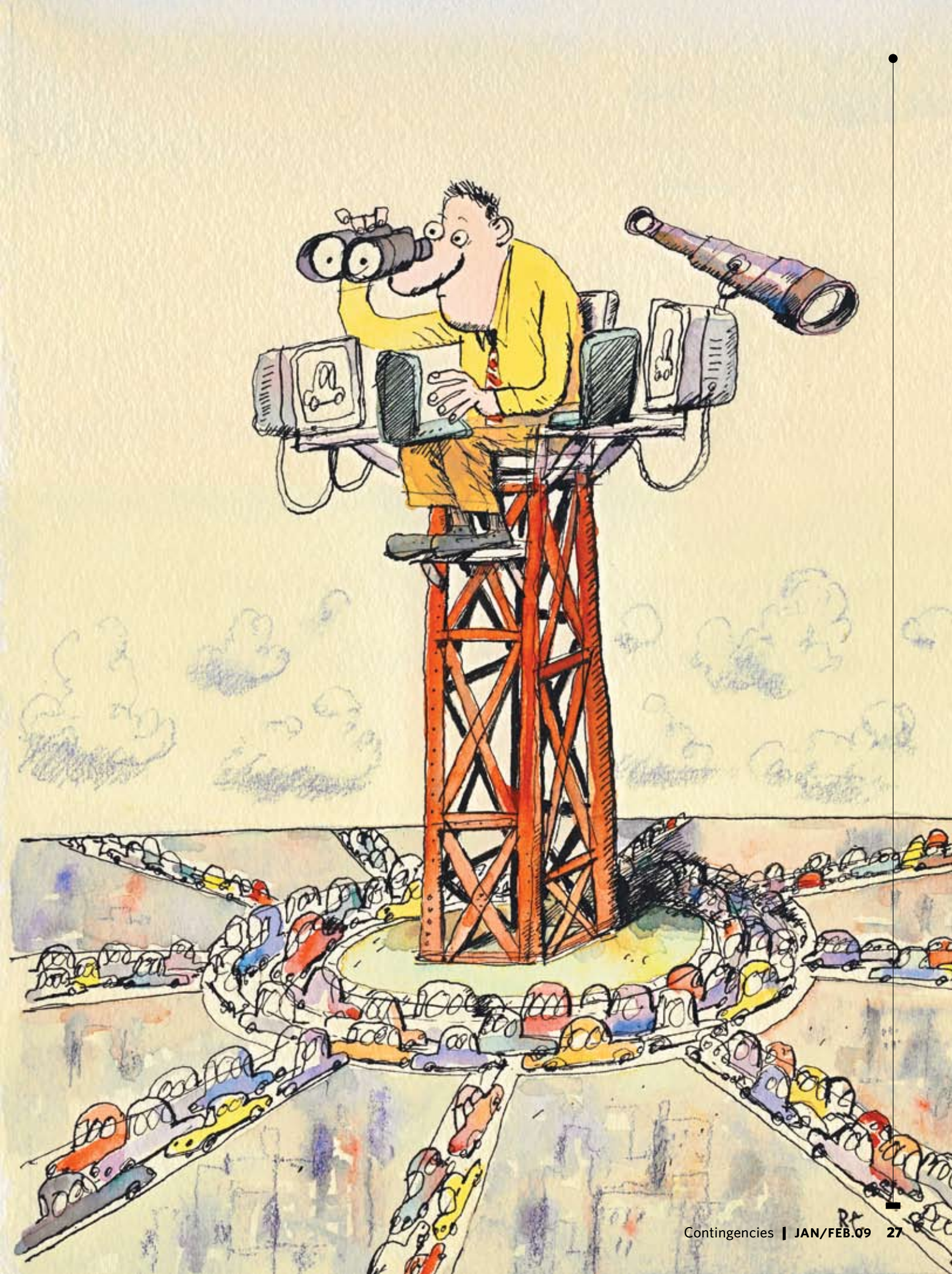
- › Where the vehicle was driven;
- › When the vehicle was driven;
- › How the vehicle was driven (e.g., speed, acceleration, braking habits, etc.).

The attraction of PAYD to the insurer is readily understandable. For two drivers within the same territory who boast the same age, sex, and marital status, the availability of information relating to when, where, and how they used their vehicles, including how far they drove them, can provide a much better measure of relative exposure than current rating variables. When it comes to aligning risk with expected loss costs, the "where/when/how" information

is significantly more powerful than the self-reported distance of a commute. On the other side of the equation, many drivers find PAYD attractive because of the possibility of lower premiums.

However, the benefits of PAYD also bring the potential of some privacy risk. Cell phones, personal digital assistants (PDAs), black boxes (event-data recorders), and GPS devices have been used by attorneys as evidence that a driver was using a cell phone, was in a particular location, or was speeding at the time of the accident. These same devices have also been used by divorce attorneys, public defenders, and prosecutors to defend or prosecute cases. The proliferation and the retention of these data and the potential for third parties to access them complicate the picture for many insureds.

It may be possible to mitigate this privacy risk. For example, Ohio-based Progressive Insurance ran a pilot PAYD program in which customers voluntarily participated in order to receive a modest insurance discount. To allay privacy concerns, Progressive had customers use an off-the-grid approach, plugging a USB drive into the car's onboard computer and uploading the data over the Web at the customer's convenience. The customer didn't receive the discount unless the data were uploaded to Progressive. However, some have expressed concern that participation in PAYD may effectively become involuntary if automobile insurers turn PAYD into the preferred rating approach in the marketplace. Given the privacy challenges, actuaries must be prepared to discuss





Defining PAYD

Pay-as-you-drive (PAYD) insurance plans are innovative ways of rating auto insurance that charge by the mile instead of on a territory system. This method of rating can vary per-mile charges based on actual road exposure, such as where you drive, how you drive, and when you drive.

and address consumer concerns about the digital trails that Americans enrolled in PAYD programs will be leaving across the country.



International Reaction

Internationally, interest in PAYD insurance has been sparse. Jurisdictions with mandatory government auto coverage, like Israel and the state of Victoria in Australia, both of which have PAYD systems in place, seem more likely to take an interest in PAYD than jurisdictions where coverage is private and voluntary. The automobile regulator in the province of Manitoba, Canada (where government auto insurance is mandatory), has stated an interest in PAYD, although there has been no explicit action to date.

In the private sector, Norwich Union (part of the AVIVA Group) in the U.K. at one time offered PAYD insurance but has since discontinued its use. This wasn't because of human rights or legal complications but simply because the hardware involved was awkward and expensive to use.

In Canada, AVIVA insurance licenses the rights to the Progressive Insurance system and is now running a voluntary pilot program of PAYD in the province of Ontario. There are currently more than 6,000 participants. As in the Progressive scheme, drivers get a computer chip that records their driving as to time of day, speeds in excess of 120 km (about 75 mph), and "hard" braking. Drivers upload the data to AVIVA and, once they finish, receive an insurance discount. The system doesn't include a GPS component to date.

While international interest in PAYD hasn't been far-reaching, there's little doubt that PAYD automobile insurance is coming to an insurance company near you. How soon, however, largely depends upon how fast actuaries can help regulators across the country assess the reasonableness, actuarial soundness, and adequacy of various proposed PAYD rating plans. With the right level of research, the rollout of easily understood consumer education campaigns, and open dialogues with regulators, we believe PAYD will be a tremendous success. The keys are in our hands. Will the profession help to move the concept forward? We think the clear answer is yes.



KEVIN BINGHAM is a principal at Deloitte Consulting LLP in Hartford, Conn., and chairperson of the Academy's Medical Malpractice Subcommittee. **PETER BOYD** is a senior manager at Deloitte Consulting LLP in Hartford. **MICHAEL GREENE** is a senior consultant at Deloitte Consulting LLP in Boston. **ROB BROWN** is a professor of actuarial science at the University of Waterloo, Ontario, Canada.

This article is solely the opinion of its authors. It does not express the official policy of the American Academy of Actuaries; nor does it necessarily reflect the opinions of the Academy's individual officers, members, or staff.

Fraud Considerations and Social Effects

PAYD insurance has many apparent benefits. However, there's no doubt that some savvy insurance customers will use PAYD insurance as a great opportunity to pull a bait-and-switch. Although we've seen these tactics used before (e.g., a father claims that he will be driving 10,000 miles a year but forgets to mention that 90 percent of the miles will be driven by his 18-year-old son), PAYD presents a whole new learning curve for insurance companies looking to spot those who plan to game the system. The risk will vary depending on the type of data required by each PAYD program and by the reporting mechanisms used.

Mileage monitoring systems are already in use by insurance companies in Massachusetts, where they have partnered with the Registry of Motor Vehicles to use odometer readings from annual vehicle inspections in order to verify mileage discounts. PAYD programs would allow insurers to have tighter control over many aspects of data, from the verification of mileage discounts to discounts for keeping the speedometer under 80 mph or staying off the road between the hours of 1 a.m. and 4 a.m.

It's important to consider the potential for "unintentional side effects" from an advanced PAYD program. A number of articles have touted the potential for a PAYD system to enhance fuel conservation efforts and greening initiatives through a direct linkage between miles driven and insurance costs.

Another consideration is the potential social effects from movement to PAYD. Currently, auto insurance rates are based in part on the loss experience of the rate territory (i.e., where the vehicle is garaged). As a result, the claims from the drivers who live in the suburbs and commute to the city get charged back to the suburb and not to the city. Under a sophisticated PAYD program, the premium is affected by where the vehicle is driven, not where it is garaged. Therefore, accidents occurring in the city will contribute to the loss experience for all who drive in the city, regardless of where the car is garaged. Under PAYD, the suburban driver who commutes to the city will pay relatively more than the suburban driver who doesn't. This makes sense from an actuarial perspective, but we need to be aware that this may also result in some dislocation (dislocation being an economic term meaning yelling and shouting). For those who live, and presumably do most of their driving, in an urban area, this could have a pronounced impact on their annual costs. The actuary should be aware that the regulatory and social concerns that resulted in territorial rate subsidies and territorial rate flattening will need to be addressed.

