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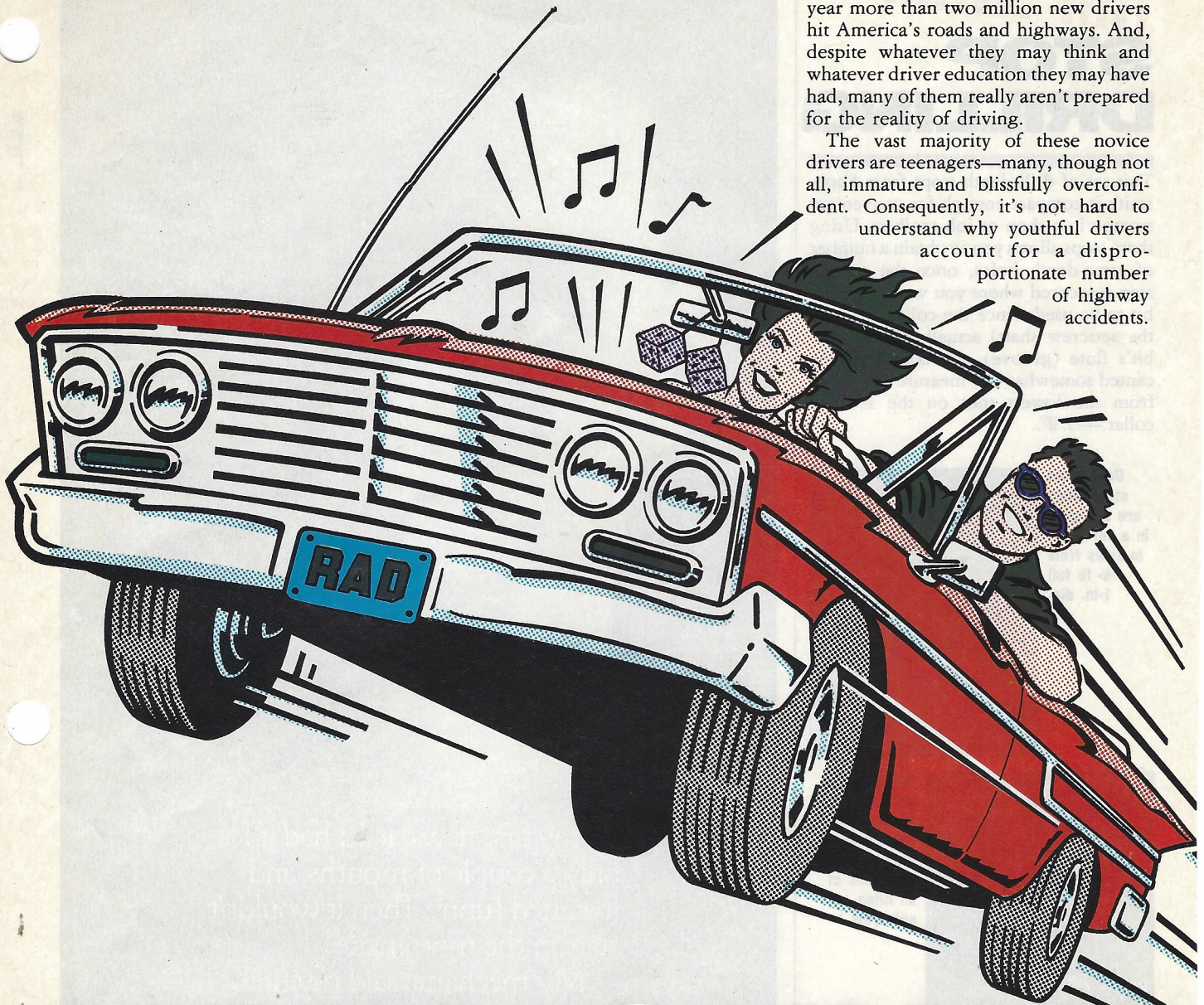
**BEST
REPLACEMENT
FURNACES AND
WOOD STOVES**



BY GARY WITZENBURG

Consider this sobering thought: Each year more than two million new drivers hit America's roads and highways. And, despite whatever they may think and whatever driver education they may have had, many of them really aren't prepared for the reality of driving.

The vast majority of these novice drivers are teenagers—many, though not all, immature and blissfully overconfident. Consequently, it's not hard to understand why youthful drivers account for a disproportionate number of highway accidents.



WHY JOHNNY

**The worst
drivers are the
ones who have
just learned
how to drive.
Here's why.**

The facts are that American teenage drivers kill themselves and each other at a rate of nearly 10,000 every year. Indeed, motor vehicle crashes are the leading cause of death among teenagers, accounting for about half of all fatalities of 16- to 19-year-olds. And, since we all share the roads, these young drivers manage to kill and injure more than their share—statistically speaking—of the rest of us as well.

LEARNING TO DRIVE

Bob Bondurant, a former top racing driver who now heads the Bondurant School of High Performance Driving near Sonoma, California, travels the country giving talks and seminars on safe driving. "What I'm starting to realize," he says, "is that most people—probably 96 to 98 percent—never get any formal training after high school driver education. After that they just fend for themselves."

Charles Butler, manager of driver education programs for the American Automobile Association (AAA), agrees: "The driving public learns to drive mostly by the seat of its pants, by trial and error. The majority of people driving today have never been through any structured training. And for those who have, the quality of that training is suspect, at best."

Consider objectively your own driver training: How aware and knowledgeable are you on the road? Do you recognize every potentially dangerous situation well in advance and know precisely what to do about it? And how to do it? Face it, how many sudden, life-threatening driving emergencies have you been in? How skilled are you at emergency evasive maneuvers and skid control?

Most traffic safety experts agree that nearly all accidents are caused; they don't just happen. One driver makes a mistake;

another doesn't see it coming or lacks the skills to avoid it. Cars don't go out of control; drivers *lose* control.

WHAT IS GOOD DRIVING?

Good driving pretty much boils down to four fundamental elements: 1) knowledge, 2) attitude, 3) skill and 4) experience. The first two are the foundation upon which everything else is built, and they are readily teachable in a classroom. The latter two are not. They must be learned at the controls of a car.

Beginning driver's courses cover the basics: how to start a car, what the controls do, what the gauges mean. Then they cover rules of the road and traffic laws. They also explain how to sit properly in the seat, how and where to grip the wheel, where to look, what to watch for. Some courses also touch on elementary vehicle dynamics—how the laws of physics affect a moving car.

Any good course also attempts to teach proper attitude: courtesy, alertness and defensiveness, not to mention awareness of the responsibility that comes with driving. "Driving is closely related to how well a person adjusts to and interacts with other people," says AAA's Butler. "There is a definite relationship between your personality and how good a driver you're going to be."

After the driving course, a never-ending process should begin: the development of behind-the-wheel skill and experience. Unfortunately, the amount and type of in-car instruction varies widely. So do the qualifications of the instructors. "It's probably fair to say that there are a lot of courses out there that aren't doing much," says National Highway Traffic Safety Administration (NHTSA) research psychologist Michael Smith.

NHTSA recommends a minimum of six hours of behind-the-wheel training

for beginning drivers—barely enough for the average novice to become comfortable enough to master the controls. But some high school courses substitute back-seat observation or practice on driving simulators for much of even *that* crucial minimum.

After that, it's up to the student to gain whatever additional instruction and supervised experience he can, which comes down to trial and error.

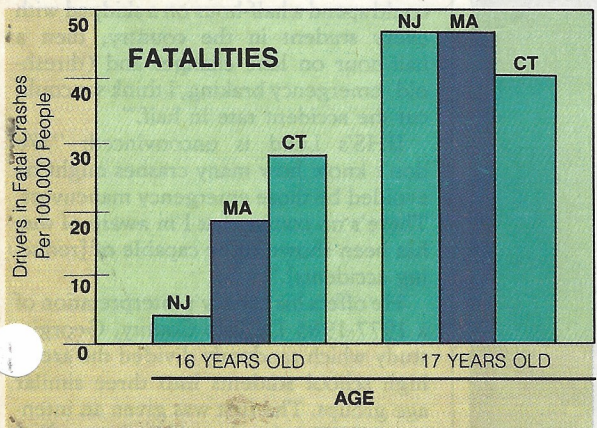
BETTER THAN DRIVER ED?

Adrian Lund of the Insurance Institute for Highway Safety (IIHS) contends that high school driver education may do more harm than good. He claims the program's very existence encourages teens to get licenses sooner—usually shortly after turning 16—and 16-year-old drivers have by far the worst record of any age group. "We don't know whether the course makes them better drivers or not," Lund says. "It may do some things that help; it may not. The bottom line is, the more Driver Ed there is, the more kids there are who get into crashes."

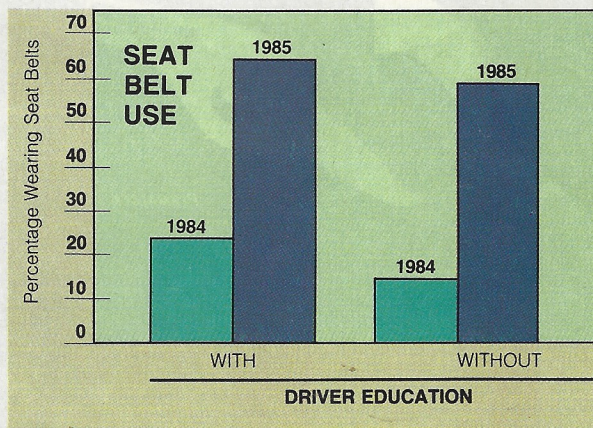
He points to a study conducted in New Jersey, which has the highest minimum driving age—17—in the nation. The study showed that 17-year-olds, even as first-year novices, are statistically safer drivers than experienced 16-year-olds. "The evidence," he asserts, "was that the 17-year-olds' crash rate was the same as if they had been licensed at 16 and had been driving for a year."

Most others, however, see *improving* Driver Ed, not eliminating it, as a key factor in highway safety. "AAA has been a supporter of high school driver education for more than 40 years," Butler states emphatically. "We believe that someone who is trained to do something will do it better than someone who is not."

CAN'T DRIVE



Youth is the main factor in accidents; New Jersey 17-year-olds (new drivers) crashed no more than 17-year-olds with a year of experience.



Seat belts save lives. One benefit of Driver Ed is the slightly higher rate of seat-belt usage (new drivers) by educated drivers.

But we see a number of problems facing Driver Ed today, starting with the common misperception of how much it can really accomplish. Training enough competent instructors is a problem. We believe that any such program is only as good as its instructor, which is why we spend 40 hours in basic instructor certification training. Beyond that, we provide a master instructor training workshop at Summit Point, West Virginia, to teach driving instructor instructors."

AAA also designs and administers various safe driving and instructor certification courses and provides instructional

materials free of charge to colleges, universities and public agencies that train and certify Driver Ed teachers. AAA's driver improvement program, called "Managing Time, Space and Visibility," is now used by (among others) nearly all of the U.S. armed services, and there's even a version of it designed specifically for older drivers.

The granddaddy of standardized driver improvement programs is the National Safety Council's "Defensive Driving Course" (DDC) now 23 years old and in its fifth edition. "One problem for many drivers is that they don't anticipate

anything going wrong," says John McCarthy, manager of NSC's driver improvement programs. "Our programs are designed to help those who already can drive to think ahead, to anticipate what could go wrong and to defend against it.

"Most of us tend to expect too much of others. We drive down the freeway with a lot of other vehicles around us, assuming those other drivers are competent, sober, awake and alert—and that's not always the case. Another thing is picking up those small clues that tell us what other drivers are about to do."

The basic eight-hour DDC is available virtually nationwide through both public and private (NSC-approved) agencies. NSC also offers a six-hour condensed version, a four-hour refresher course, motorcycle and alcohol modules, a professional truck-driver course and a DDC self-instruction package.

ADVANCED TRAINING

But these and other programs do not offer instruction in what many consider "advanced" driver skills—handling sudden emergencies, controlling unexpected skids. Bondurant and the handful of other pros who teach advanced techniques in this country believe that competent training in such techniques should be considered *basic* to safe driving.

"The fact is," Bondurant asserts, "that most people don't know how to re There needs to be a program in Driver Ed that at least teaches emergency evasive maneuvers." One terrific tool for that is what he calls an accident simulator, which is simply three lanes marked off by pylons with a traffic light over each one. As the student driver approaches, an instructor suddenly switches two of the three lights from green to red to simulate a partially blocked freeway.

But are most people physically capable of handling a car in extreme conditions? Can the average driver learn emergency maneuvers? "Absolutely!" says Terry Earwood, chief instructor of the Skip Barber/BMW Advanced Driving School based in Canaan, Connecticut. "If we could spend a half-hour on a skidpad with every student in the country, then a half-hour on lane changes and (threshold) emergency braking, I think we could cut the accident rate in half."

IIHS's Lund is unconvinced: "We don't know how many crashes might be avoided by those emergency maneuvers. There's no course that I'm aware of that has been shown to be capable of [reducing accidents]."

He offers his agency's interpretation of a 1977-1983 DeKalb County, Georgia study which randomly divided the are high school students into three similar age groups. The first was given an intensive NHTSA-developed program called the "Safe Performance Curriculum"

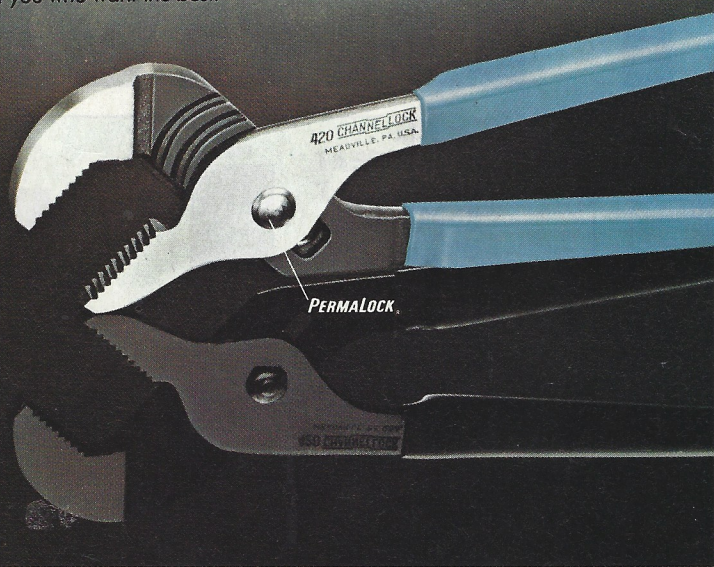
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(SPC), which included three hours of evasive maneuvers (but only two of on-street, behind-the-wheel training); the second group took a minimum basic driver Ed course; the third, the control group, was offered no course at all.

Their subsequent driving records, surprisingly, showed little difference. Interestingly, there was *slightly more* crash involvement among the specially trained group in their critical first year of driving. Lund ascribes that to earlier licensure: "The control-group kids (those with no school-sponsored training) were substantially less likely to become licensed and therefore had fewer crashes because their exposure was lower."

Dr. Frank Kenel, AAA's staff director of traffic safety, on the other hand, believes advanced training can be beneficial. "The typical driver," he says, "has not even reached the point where he is capable of making a controlled emergency stop." But he contends that all *beginning* drivers are too inexperienced to deal with it. "When we try to go from basic control function and visual process to the point of controlling skids, or steering and braking simultaneously, the student does not have the driving skills development at that point."

"One of the possible explanations of the DeKalb study," he theorizes, "is that those SPC students were taken beyond

their capabilities. My contention is that, having learned such skills, they drove beyond their capabilities because they were convinced they could handle anything that came up."

But former racing champion Bertil Roos, now president of the Procision School of Advanced Driving at Blakeslee, Pennsylvania, prefers his students relatively young and inexperienced. "If students know how to start, stop and turn, we can teach them from there," he says. "Actually, the longer they have driven, the harder it is to break them of their bad habits and teach them good ones." Among other things, Roos is known for pioneering the use of specially modified "skid cars" to permit skid-control training at low speeds on dry pavement.

HOPE FOR THE FUTURE

NHTSA's Smith believes first in more and better training, both classroom and behind-the-wheel, and that all instructors should be certified by the states. "But the second part of my solution," he adds, "is probationary or provisional licensing. There should be a system that restricts the types of driving that young people can do until they have demonstrated that they are safe drivers. The two key types of restrictions would involve driving under the supervision of an adult and limited night driving for a certain period of time."

"I think the answer," says AAA's Butler, "is that beginning Driver Ed definitely should be taught, and that it should teach certain basic skills. Then, after two years or so, when the person has gained enough confidence and can concentrate on more advanced skills, bring him or her back for a refresher course on skid control and evasive maneuvers."

"We think training should be continuous. It shouldn't be a one-time thing. We believe that parents should provide supplemental training and that it should be coordinated with Driver Ed so the parent knows what the child is being taught."

"There are things that have been shown to work," offers IIHS's Lund, "and they don't happen to be driver education. Some states have curfew laws, and those have been shown to have a large effect when the curfew is observed. Also, you can delay the licensure of teenagers and it doesn't seem to have a negative impact on their life-style."

AAA's Kenel agrees with the idea of probationary licensing (for six to 12 months), but contends that it should apply to all new drivers, not just teenagers. "The research that I'm aware of on a worldwide basis indicates that a new driver is a new driver for from three to seven years. It takes that long before he or she reaches some level of proficiency."

(Continued on page 87)

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TAKING IT TO A PRO

When the brakes pulsate or chatter, you'll want to perform a diagnosis first. Most of the cures for the problem are included in what are often advertised as complete brake jobs, and it's tempting to say, "Let me get the complete job and not have the problem come back."

However, a complete brake job also can be a waste of money, because it may not cure the problem. It may not cover wheel balancing or suspension service, runout checks or replacement of a power brake unit.

Further, it may not include resurfacing a disc or drum. Even if it does, you may not want it, because resurfacing isn't always beneficial. It reduces disc and drum thickness, so these parts are more prone to warping, which can shorten their life.

Another factor to consider: The so-called complete brake job may not include the rear brakes, and the problem could be there.

If a shop pushes for the complete package, you probably should go elsewhere. A recommended independent garage is generally your best bet, particularly if there is any indication the problem may be in the suspension or wheel balance.

In any case, if a shop wants to surface the disc or drum, find out why. Some do it without first measuring, just because it's a common treatment for pulsation-chatter problems. However, the shop should do a diagnosis first, and you have every right to expect the mechanic to check the parts with a micrometer, dial indicator or drum gauge before he decides that resurfacing is necessary.

If you have a GM car, you should insist that the mechanic check the clearances between caliper and anchor plate stops. It's common for shops to automatically resurface GM discs, and sometimes more than once, when the problem is the caliper-to-anchor plate clearance.

If there's grease on a brake lining, the brake shoes on the other side should be replaced, too, for balanced braking, but not necessarily the shoes on the other axle.

Although brake linings are serviceable down to 1/16-in. thickness (or 1/16 in. above the rivet heads), it may make economic sense to have new shoes installed even if the thickness is slightly greater. The biggest part of the job is the labor required to get to the shoes for lining inspection.

Loose driven-wheel bearings normally can be adjusted tighter. But if the problem is in a sealed wheel bearing hub, it must be replaced, which can cost over \$100.—P.W.

WHY JOHNNY CAN'T DRIVE

(Continued from page 81)

Every entry-level driver should be handled the same way, regardless of age."

Kenel also emphasizes the need for in-car instruction immediately following the classroom sessions: "When what you're doing in class is directly related to driving, you should be able to put that into effect right now, not six months down the road."

He adds that AAA will soon have an instructional video tape called "Helping Your New Driver," for use at home by

parents whose children (or other new drivers) are learning to drive.

HM's own recommendations? First, get the best possible education for *all* novice drivers, and have the courses monitored and regulated by the state. Second, probationary licensure requiring adult supervision for the first six months and restricted night driving for a full year. An unrestricted license could then be issued no sooner than at age 17, contingent on completion of *both* an eight hour AAA or NSC-type defensive driving course *and* a half-day, state-certified skid-control/accident-avoidance school. **HM**

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