

The meeting was called to order in Room 323, Legislative Building, at 1:34 p.m. on Thursday, February 8, 1979.

Senator Blakemore in the Chair.

PRESENT: Senator Richard Blakemore, Chairman
Senator Wilbur Faiss, Vice Chairman
Senator Keith Ashworth
Senator William Hernstadt
Senator Clifford McCorkle

ABSENT: Senator Lawrence Jacobsen
Senator Joe Neal

OTHERS

PRESENT: Will Scott, Office of Traffic Safety
Col. Barney Dehl, Nevada Highway Patrol
Sharon Alcamo, Department of Motor Vehicles
Art Rader, Southern Nevada Chapter, National Drivers' Association
John Borda, Office of Traffic Safety
Stan Warren, Nevada Bell
Gene Phelps, Nevada Highway Department
Joe Souza, Nevada Highway Department
Melvin Beauchamp, Nevada Highway Department
Barton Jacka, Department of Motor Vehicles
Jim Barrows, Las Vegas Sun
Robert F. Guinn, Nevada Motor Transport Association
Doug Hill, Administrative Office of the Courts
Ralph McVane, Federal Highway Administration
James F. Rud, Federal Highway Administration
Virgil Anderson, American Automobile Association
Hugh Ricci

The Committee heard testimony on the following bills:

S.B. 167 PROHIBITS RENEWAL OF DRIVER'S LICENSE IF DRIVER HAS FAILED TO COMPLY WITH CERTAIN TRAFFIC CITATIONS.

Senator Hernstadt, who introduced the bill, spoke on S.B. 167. He said this is just another scofflaw bill and is a permissible bill. He asked for testimony that would make this bill more workable so it would not cause more inconvenience for the Department of Motor Vehicles.

Ms. Sharon Alcamo, Chief of the Driver's License Division of the Department of Motor Vehicles, spoke on problems that would be caused by administering the bill. Since they have a current program, F.T.A. or Failure to Appear, it would be difficult to administer both programs; it would prove inconsistent and there would be an increase in the workload. There would also be duplication in suspensions and it would have a fiscal impact which would run about \$67,000 a year.

Mr. Doug Hill, Administrative Office of the Courts, spoke on the effects of S.B. 167. He said that drivers with 11 demerits on their licenses would not be able to avoid losing their licenses.

Senator Hernstadt asked Mr. Hill if he thought a larger time frame than one year, possibly three years, and more demerit points would be more feasible. Mr. Hill thought this might help but was not certain.

Col. Barney Dehl, Nevada Highway Patrol, gave information on quantities of drivers' traffic warrants. They can serve approximately 10 percent. He spoke on how the problem is solved in other states.

Senator Hernstadt asked if this bill would pay for itself, as does the F.T.A. Program, or would it exceed the F.T.A. Program. He asked if this could be a good program from an economic point of view as well as from a law enforcement point of view. Ms. Alcamo said it could.

The hearing was closed on S.B. 167.

Chairman Blakemore asked for testimony on the balance of the Agenda.

S.B. 176 INCREASES MAXIMUM SPEED LIMIT ON NEVADA HIGHWAYS TO 65 MILES PER HOUR.

S.B. 177 EXCLUDES CERTAIN CONVICTIONS FOR SPEEDING FROM DEMERIT POINTS SYSTEM AND LIMITS INSURANCE RATE INCREASES THEREFOR.

S.B. 186 AUTHORIZES DEPARTMENT OF HIGHWAYS TO INCREASE SPEED LIMITS ON CERTAIN HIGHWAYS FOR PURPOSE OF CONDUCTING STUDIES.

S.J.R. 11 MEMORIALIZES CONGRESS TO PERMIT STATES TO RAISE MAXIMUM SPEED LIMIT.

Senator Ashworth spoke on the bills introduced by him, S.B. 176, S.B. 177 and S.B. 186. He said the crux of the whole matter is Senator Hernstadt's bill, S.J.R. 11, in which Congress is memorialized to do something about the maximum speed law in the State of Nevada. Senator Ashworth said that he had learned today that there are 14 western states that are considering the same problem. He said the main thrust of the introduction of these bills is to try and get some attention in Washington, D.C. He did not feel S.B. 176 could be passed. He did feel that S.B. 177 could be passed since this is being done in other states and he felt S.B. 186 was an innovative idea to try and get attention in Washington, D.C.

Mr. Art Rader, National Drivers' Association, read a letter written to Senator Ashworth (see Exhibit A). He also read from pages 1, 4, 5, 6, 7, 9, 10, 12 and 14 from a booklet that was distributed to the Committee (see Exhibit B).

Senator McCorkle stated his personal opinion is that the only legitimate reason to oppose this bill is the loss of federal funds. He asked if the present laws in Idaho and Montana are exactly like the bills that have been introduced here. Mr. Rader said that S.B. 177 is somewhat similar.

Senator Ashworth stated that most citations in Idaho and Montana are for wanton waste of fuel and not for exceeding the speed limit.

Senator McCorkle was interested in evaluating ways to replace the revenue. He asked what has been the federal government's attitude toward Idaho and Montana since 1974. Did they threaten to withhold funding and then did not follow through? Mr. Rader said that he did not know what happened in recent years, his research was done for the 1977 Session and at that time no serious action had been taken. Mr. Rader did not see how the federal government could take funding from Nevada if they had not taken it from other states that were not observing the 55 miles per hour speed limit.

Senator McCorkle asked if anyone had been trying to coordinate other states to work with Nevada. Senator Ashworth stated he had been requested to attend a meeting in Denver and there will be at least 14 states that will be attending where there will be introduction of speed law bills that are safe and sane. The thrust will be to get the attention of Washington, D.C. He did not think any of the states would be irresponsible in regard to their federal funding.

Mr. Joe Souza, Nevada State Highway Engineer, reviewed the loss of funds and what it would do to the State. He said that if Nevada does not comply with the federal mandate, all of the federal highway funding would be lost. This would mean \$88,000,000 in 1979, \$80,000,000 in 1980 and \$60,000,000 in 1981. This loss in revenue would cause 700 to 800 employees in the Department to be laid off or an overall unemployment figure of over 10,000. To offset this loss, gas tax would have to be increased by 12¢ a gallon.

Senator Hernstadt asked Mr. Souza his opinion on what the impact would be on each of the three bills; which would cause Nevada to lose highway funds and which would not.

Senator Ashworth asked Mr. Souza if there was a schedule of sanction by the percentage of noncompliance.

Mr. Souza replied yes. He said the percentage of vehicles over 55 miles per hour in 1979 would be 70 percent and that would be an assessment of \$1.235 million. In 1980, it would be dropped to 60 percent which would be \$1.10 million. He said the State could not lose more than 5 percent of \$80,000,000.

Mr. Melvin Beauchamp, Deputy Attorney General with the Nevada Highway Department, said that if S.B. 176 were passed it would mean a mandatory loss of 100 percent of highway funds.

Senator Hernstadt stated he wanted to clarify the subject bills. He understood that S.B. 176 would be a mandatory loss of 100 percent of funds. If S.B. 186 were processed, Nevada might be cited for not being in compliance on a part of the highway system and therefore would lose 100 percent. If S.B. 177 were passed and the percentage of cars over 55 miles per hour stays below 70 percent, Nevada might not lose any funds. If Nevada were to lose any funds with S.B. 177 in effect, the maximum would be 5 percent. Mr. Souza said that would be assuming the Secretary of the Department of Transportation took the position he has with Montana and Idaho.

Mr. John Borda, Director of the Office of Traffic Safety, submitted a document showing what bills regarding the speed limit have been introduced in other states (see Exhibit C). He will be speaking further on the speed bills at the Joint Hearing on February 27, 1979. He stated what actually happened in the five states, Montana, Wyoming, Oklahoma, Idaho and one other, that did have varying laws which actually weakened the 55 miles per hour with either no demerits, a maximum \$5.00 fine, an energy citation, etc., and all they ever received from Washington was a strong letter and a telegram. He stated the five aforementioned states had no increase in fatalities but the rest of the nation including Nevada had a 17 percent decrease. He felt that fatalities will go up if the speed limit goes up. He thought the way to go would be to ask Congress if the speed limit could be lowered in some necessary areas and up to 65 miles per hour in rural areas. Senator Ashworth agreed with this.

Mr. Robert Guinn, Nevada Motor Transport Association, stated the law on the books now says the Secretary of Transportation shall not approve any federally funded highway project unless the Governor or some delegated representative can certify to certain things; one of them being that the State has an adequate 55 miles per hour speed limit law on the books. He felt Nevada would be playing Russian roulette if this legislation were passed.

Mr. Virgil Anderson, American Automobile Association, said the insurance industry would be very much concerned about the loss of federal funds. They also feel the 55 miles per hour speed limit has reduced fatalities.

Mr. Hugh Ricci, representing himself, gave some statistics on energy consumption. He stated the easiest way to conserve energy is by lowering the speed limit. He stated that according to some calculations that he had done that between Las Vegas and Reno the approximate miles per gallon came to be about 19.8 at 65 miles per hour or 23.1 miles per gallon at 55 miles per hour, which is a difference of 15 percent. The difference in time being one hour and fifty minutes. He said there is an average usage of 112,000,000 gallons of gasoline at 65 miles per hour and 96,000,000 gallons at 55 miles per hour which is an increase of 16,000,000 gallons or 3.6 percent. All of his comments were directed at S.B. 176.

Col. Barney Dehl, Nevada Highway Patrol, commented on some of the statements made by Mr. Rader. He distributed Chi-Square Criteria (see Exhibit D). He said that a study done by the Nevada Highway Patrol showed that 18 percent of traffic accidents investigated by the Highway Patrol have had 55 miles per hour speed convictions and 8 percent that have 55 miles per hour speed convictions were not involved in accidents. He said there is a definite correlation that drivers who get speed tickets are twice as likely to be involved in an accident as drivers who do not get 55 miles per hour tickets.

Chairman Blakemore closed the hearings on the speed bills until the Joint Hearing on February 27, 1979.

ACTION WAS THEN TAKEN BY THE COMMITTEE ON THE FOLLOWING BILLS:

Senator Ashworth moved that S.J.R. 11 "Do Pass."

Seconded by Senator Faiss.

Motion carried.

Senator Hernstadt moved that S.B. 167 be "Indefinitely Postponed."

Seconded by Senator Ashworth.

Motion carried.

Respectfully submitted,


Jane A. King, Secretary

APPROVED:


Richard E. Blakemore, Chairman



FEBRUARY 4, 1979

KEITH ASHWORTH
Member,

Transportation Committee
NEVADA STATE SENATE
Carson City, Nevada

RE: National Speed Limit
and SB 176, SB 177

DEAR SENATOR ASHWORTH,

Three cheers for you!

I strongly support your two recent bills dealing with reform of the National Speed Limit.

SB 176, advancing the limit to 65 mph in Nevada (hopefully in concert with several other western states), is excellent legislation because it will mandate a more realistic limit.

For each 20 miles traveled at 65 mph rather than 55 mph, a motorist saves three minutes. On a 440 mile auto trip from Las Vegas to Carson City, a driver will save 66 minutes travel time at 65 mph over 55 mph.

I'm sure you will agree this is a substantial savings in travel time. It diminishes driver fatigues on long trips and thus promotes safety.

Your second bill, SB 177, eliminating demerit points and insurance premium penalties for convictions of speeding between 55 mph and 70 mph, is also excellent legislation.

While Dick Rottman was Insurance Commissioner, he conducted hearings in June, 1977, on similar administrative proposals. Assemblyman Bob Price and I attended the hearing in Las Vegas during which insurance industry executives testified that they had conducted no actuary studies to prove motorists who get tickets going up to 70 mph are greater risk liabilities. Thus there is no actuary justification for insurance companies penalizing these motorists.

It is important to note SB 177 duplicates two of the four provisions of the Dale Goodman bill last session that copied laws on the books in Idaho and Montana since 1974, and partially adopted in Oklahoma, Texas and Nebraska. None of these states have lost their federal highway funds.

So it is impossible to believe Nevada would lose its federal highway

funds if SB 177 is enacted.

Enclosed is a booklet with copies of studies and surveys that directly contradict what federal and state traffic safety bureaucrats have been telling us about the National Speed Limit.

PAGE ONE is a survey done by Mechanix Illustrated Magazine which shows Americans oppose the speed limit by a 2-to-1 margin. This contradicts a recently published DOT poll which claims 56% of all Americans strongly favor the speed limit.

The DOT poll was taken from a sampling of 1500 Eastern citizens.

The Mechanix Illustrated poll was offered to the magazine's five million nationwide readers. Ten thousand of these responded. The sampling audience and response audience was vastly larger than DOT's poll and is probably vastly more valid.

PAGE TWO is a study done by the chairman of the economics department of University of California, Irvine, which proves the speed limit costs the United States SIX BILLION DOLLARS in annual lost productivity. It also saves only one or two percent of our total gasoline consumption.

PAGE THREE is a study by the National Traffic Safety Administration that reports traffic deaths relate directly to economic growth and recession (and thus do not necessarily relate directly with the National Speed Limit).

PAGE FOUR is a study done by the California Highway Patrol that proves naked speeding is only the 11th most important cause of highway deaths, far behind drunk driving and other violations.

PAGE FIVE is a study by Car & Driver Magazine on how the speed limit does not really save lives (or saves lives at best at a marginal rate), and that possibly federal safety officials are manipulating the death statistics for their own purposes.

PAGE SIX is a Texas A&M University study that indicates the National Speed Limit is unsafe because it promotes driver fatigue on long trips.

PAGE SEVEN is a study commissioned by Motor Trend Magazine that indicates the National Speed Limit saves energy at a marginal rate, if at all.

PLEASE WRITE ME OR CALL ME TO ADVISE WHEN THE COMMITTEE HEARINGS WILL BE HELD ON SB 176 and SB 177. I will appear to testify strongly in support of both of your fine bills.

SINCERELY,



ART RADER

4923 Colorado Avenue
Las Vegas, Nevada 89104
452-8881

Our 55-MPH Vote Ends In a Surprise!



THE VOTES are counted in MI's National 55-mph Speed Limit Referendum. The news is that 55 loses by a margin of 2 to 1. America hasn't had such a disliked law since Prohibition.

The outcome was not really a surprise because 55 has never been popular, particularly with MI's readers, who understand and care about cars much more than does the average motorist.

We found a major surprise in the 25-word comments that voters could write on their ballots if they wished. What the comments revealed is a widespread feeling of disenchantment and frustration with ineptness in government. In short, our people are seething. Our 55 ballot in many cases thus became a means of expressing feelings not relating directly to the speed issue.

The number of marked ballots sent in was another surprise. By the time we closed the books, MI received more than 10,000 votes. That response was nothing short of astounding in view of the circumstances. In order to be counted, a reader had to cut out our printed ballot, mark it, sign with name and address (optional) and then furnish his own envelope and stamp. Nobody can tell us people just don't care anymore!

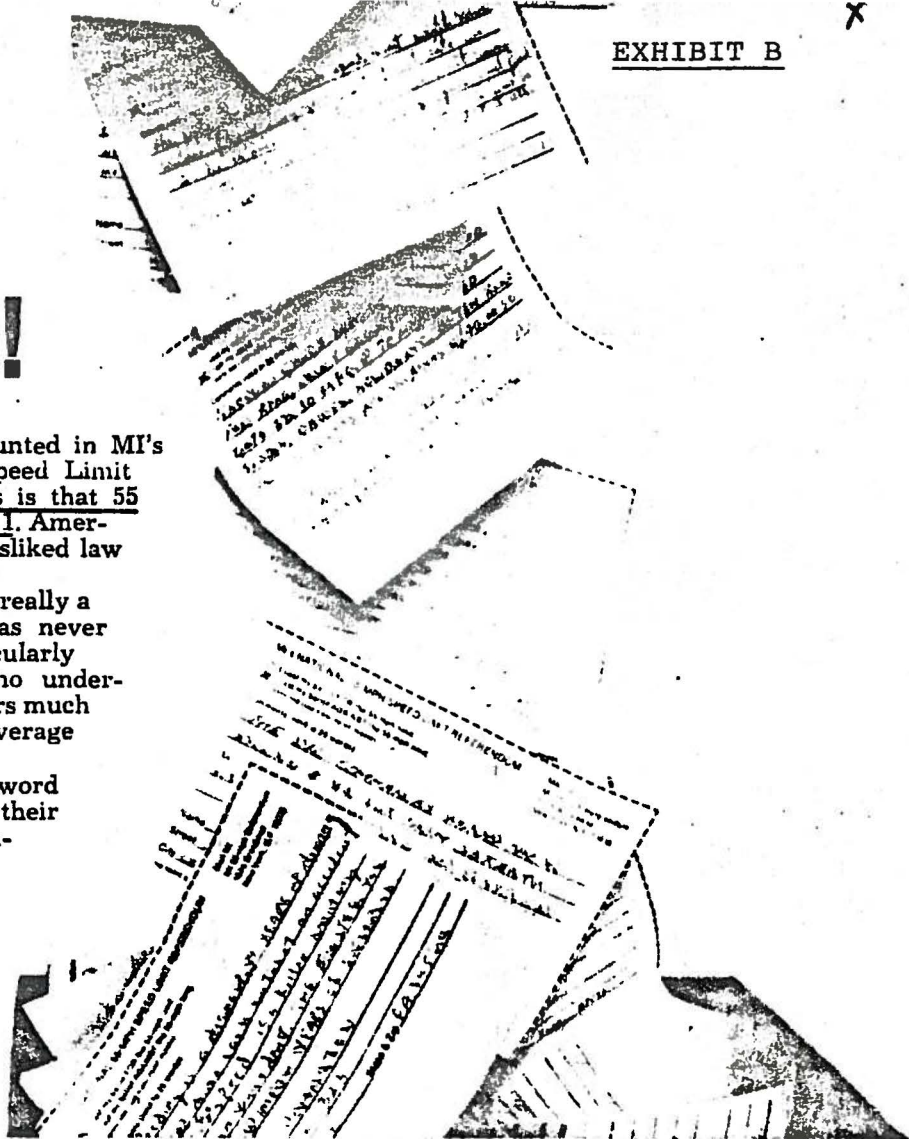
Of 10,333 ballots, the counting went this way:

For 55 mph 3,649
Against 55 mph 6,684

If that is the feeling of our readers, what do they want in place of 55? There was some consensus on the answer—increase the national limit to 60 or 65 mph, the latter having been in effect on many highways when 55 was imposed. As another possibility, many readers who voted Against said they'd favor 55 if it were enforced. Sample comments are presented alongside this report.

The results of our Referendum have been made known to every member of the U.S. Senate and House. In addition, all 50 governors were given the information.

(Continued on page 95)



FOR

At 70 mph a crash has almost twice the damaging forces as at 50. Think it over.
F. Roehler, Malibu, Calif.

It's either sacrifice at 55 now or we will be required to make far bigger sacrifices later.
M.W. Kline, Long Beach, Calif.

Average human reaction time can still function reasonably well at 55. Beyond that, reaction time fails due to speed.
Julia Burgen, Arlington, Tex.

Whatever the limit, strict enforcement is imperative. Nonenforcement creates two streams of traffic at vastly different speeds. This difference is extremely hazardous.
N. Dobbins Callahan, Rocky Face, Ga.

Although I feel need for speed, I am realizing that not only have I arrived about the same time but I have, in fact, arrived.
Lewis McNaughton, Lancaster, Pa.

The 55 mph speed limit, if enforced, can result in a significant saving in gas and oil.
Charles Kordowski, Palmetto, Ga.

Many lives have been saved by the lower speed limit, but if only one were saved—and it was yours—would you favor it?
L. Bryan Cox, Reseda, Calif.

Remember: If you and I collide on some highway, the fact that I was traveling at 55 rather than 65 may save your life.
R.M. Barnett, N. Huntingdon, Pa.

AGAINST

55 is not safe for the person who obeys because he is constantly being tailgated.
Dennis Downey, Lansing, Ill.

If the idiots in Washington really want to save gas, they should remove half the stoplights in our cities and synchronize the rest!
R. Jesse Davis, Greeley, Colo.

At 70 mph, traffic was spread out, which made it safer. At 55 the only thing you find in a rear-view mirror is somebody else's radiator.
John G. Meyers, Elk Grove, Ill.

If we want to save fuel, have a higher limit (75 mph?) for economy cars.
Duncan P. Johnson, Weymouth, Mass.

I go 40,000 mi. a year, 727.3 hrs. at 55, 615.4 hrs. at 65. I don't intend to spend an extra 111.9 hrs. driving.
John B. Baker, Billings, Mont.

55 is impractical in most western states due to long distances between cities.
Bryan Keathley, Abilene, Tex.

How about extra time added to a 300-mi. trip? 50 min. added to 4½ hrs. can be unsale for a tired businessman.
Tom Cagen, Cahokia, Ill.

If legislation is necessary then regulate miles per gallon, not speed.
J.E. Harmon, Jr., Carrollton, Tex.

55-MPH

(Continued from page 58)

The import of this expression of opinion hardly can be ignored by our legislators because the huge sample provided by the ballots represents the feeling of almost 6 million readers. Organizations conducting public-opinion polls (such as on the popularity of television shows) use samples that are miniscule compared to what MI's readers produced. Thus our confidence in the viability of our balloting.

Our kind of people—we own one to three cars each, like to drive, like to take care of our machinery, own a home, work for a living and struggle forever to make ends meet—see the 55 limit as a relic of the Nixon Administration that has never accomplished what was supposed to be its main objective. The law was imposed to conserve fuel; it was said. Anyone who takes a look at the country's petroleum-consumption figures knows instantly that we have a massive failure on our hands.

Besides that, the 55 limit, like Prohibition itself, simply is not being enforced. And even in the few spots where there is enforcement, treatment of motorists does not seem to be fair and even-handed.

On the other side of the coin, the minority who voted in support of 55 point out that the discernible slowing of traffic has saved lives. No one claims we have fewer accidents than in pre-55 days but those that occur tend to be less destructive and fatalities are fewer. Backers of 55 also say that nonenforcement does not mean the law is bad—only that enforcement is bad. These and other minority opinions also were made known in our letters to Washington and the state capitals.

The comments that came in with both For and Against ballots often seemed to be the cries of disenfranchised citizens. Even those who voted to support 55 had sharp criticisms of the government. Generally the ballots reflected a profound dissatisfaction, a type of alienation usually associated with college students. We working people are often pictured as happy and even smug in being the best-paid and best-fed such group in the world.

Well, happy we're not, according to what we read. Whether dismissing the 55 limit with a sharp jab—"it stinks"—or supporting it because of the lives it is supposed to

x 2
EXHIBIT B

save, reader after reader displayed dismay at the colossal and unresponsive Washington bureaucracy.

Some voters felt—and said—that Washington is too stubborn to admit the 55 limit is played out. To another set of readers, Washington is not responsive for precisely the opposite reason. The government is not taking a hard-line, they said, and is not committing itself to proper enforcement of the law.

The 55 mph limit in many comments became the symbol of a government out of control, one that no

longer answers to the individual citizen. Some readers admitted voting against the limit solely to vent anger at Washington. They felt the Referendum was the only way they could register their frustration, they said. In several instances two ballots would have almost exactly the same comment but one reader would vote For, the other Against.

The ballots show an overwhelming reliance on the automobile. Not one comment even mentioned the possibility of mass transit. Many described a feeling that the 55 limit

was an intrusion on their right to drive as fast as desired. To hear some tell it, you'd think the car should be mentioned in the First Amendment to the Constitution.

There's irony in all this, of course. One of the attractions of our Referendum had to be our announcement that the results would be made known to influential lawmakers—the exact people who are so distrusted by the vote-casters. Perhaps they're angry and frustrated—but they obviously haven't given up hope. ●

The Costs of Going 55

BY CHARLES A. LAVE

• The campaign to educate us about the benefits of the 55-mph limit has been strident and persistent. Somehow this wonder drug, the 55 limit, is supposed to cure our national energy problem, save lives, and cause us all to pursue a more virtuous existence. But wonder drugs often have unfortunate side effects, and this one is no exception. I want to focus your attention on some of these undesirable side effects.

The major cost associated with the 55-mph limit is an enormous chunk of wasted travel time. Specifically, it costs about 102 man-years of extra travel time to save one life. In contrast to this considerable cost, the energy savings associated with the 55-mph limit are so trivial that we could get about the same conservation effect by simply ensuring that everyone kept his tires properly inflated. (Consider the whimsical implications of this fact: imagine an elite sidewalk Pressure Patrol, armed with air gauges, ticketing cars for low tire pressure.)

There is another way of evaluating the costly side effects of the 55-mph wonder drug: the value of time. The principle is simple: time is money, and studies have shown that commuters are willing to pay up to 42 percent of an hour's wage to save an hour of travel time. Thus, when transportation analysts measure the benefits of new subway systems, like BART or METRO, they count up the number of travel hours that would be saved by the transit improvement and then multiply by the value of time to compute a dollar measure of the benefits. The same principle can also be used to assign a dollar cost to the extra travel time caused by slowing down traffic. When we do this we find that the 55-mph limit causes enough of a slowdown to waste about \$6 billion worth of travel time per year.

The National Highway Traffic Safety Administration says we save about 4500 lives per year because of the 55-mph limit. Hence, it costs about \$1.3 million per life saved. Is this a bargain, or are there other social policies that might save more lives

for less money? Well, it has been estimated that placing a smoke detector in every home in the U.S. would save about as many lives in total as the 55-mph limit, and would cost only \$50,000 to \$80,000 per life saved; or more kidney-dialysis machines could save lives for only about \$30,000 per life; or additional mobile cardiac-care units cost only about \$2000 per life saved; and there are even a great number of highway improvements that can be made, through reducing roadside hazards, which cost only about \$20,000 to \$100,000 per life saved. At a cost of \$1.3 million per saved life, the 55-mph limit is hardly a bargain.

For a more humane way of calculating the cost of the 55-mph limit, we might compare the 2.710 billion extra travel hours (from lower travel speeds) with the reduction in fatalities. This shows that it costs 102 man-years of wasted time to save one life. Yes, that means 102 years of extra time riding around in your automobile in order to save one life. Now, I confess to some trouble keeping up with the latest theological notions as to the nature of hell; but 102 years of traveling in an automobile fits my personal notion of that place rather closely.

Where does all this leave us? We now see that the 55-mph limit is an incredibly expensive way to save lives, and that there are cheaper and more effective means of reducing our national death rate. We now see that the 55-mph limit has only an insignificant effect on energy conservation: even the most optimistic government estimates say that it saves only about 1 to 2 percent of our gasoline consumption. This is an effect so trivial that we can do as well by switching to radial tires or by changing spark plugs at more regular intervals.

If we want to save transportation energy, there is a much more effective way to do so. Instead of focusing so much of our attention on a misguided speed limit that saves only 1 to 2 percent of our gasoline, let's look at some changes that could save 50 percent of our gasoline. The average car in

the U.S. now gets about fifteen miles per gallon. But the showrooms are full of cars that can double or triple this efficiency. If we could persuade only 4 percent of the drivers to switch from conventional cars to fuel-efficient cars, we would make a bigger contribution to saving energy than was accomplished by the 55-mph limit.

How could we get people to drive smaller cars? Well, there are two traditional approaches to influencing human behavior: we can pass a new law and make the desired behavior compulsory—the method so beloved of dictators, lawyers, and old-fashioned liberals, or we can increase the incentives for buying fuel-efficient cars—the method favored by economists, psychologists, and other suspicious characters.

Since I am a card-carrying member of the second group, let me advocate an incentive scheme. Suppose we reward the drivers of fuel-efficient cars by allowing them to drive faster: a 55-mph limit for gas guzzlers and a 65-mph limit (traffic permitting) for economy cars. Issue two kinds of license plates so that the police would have no trouble telling the classes apart; permit differential speeds only on uncongested highways.

Would this kind of reward, getting to drive faster, provide enough of an incentive to cause people to switch car types? Well, twenty years of traffic research aimed at trying to predict why commuters choose one mode of travel over another, or one route over another, all confirm one straightforward rule: the fastest mode gets all the people. There is no question that the chance to drive faster would make a really significant impact on relative market shares of gas guzzlers versus fuel-efficient cars.

The point is simple: if we are going to insist on manipulating the speed limit to affect energy consumption, then let's at least manipulate it in an effective way.

Lave is chairman of the economics department and a member of the Institute of Energy Studies at the University of California, Irvine.

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Speed Kills But Not Very Often

Every fatal accident in the U.S. is investigated by a state-police unit which reports the "primary collision factor." Blood tests are used to identify drunken drivers, and experienced investigators can reconstruct the events leading up to an accident with surprising accuracy.

The result? Typically, speeding ranks about eleventh as a cause of highway deaths, well behind such sundries as "improper turns" and "drivers being distracted by passengers." In 1976, only 2.3 percent of fatal accidents in California, and only 5.4 percent of fatal accidents in New Jersey, were caused by vehicles exceeding the speed limit, according to the respective state-police Fatal Accident Investigating Units. New Jersey and California are significant for this comparison because New Jersey has just about the highest concentration of radar units per mile of Interstate in the country, and consequently the strictest enforcement of the 55 mph speed limit. In California, on the other hand, police radar may not be used by the highway patrol.

Even more interesting, these percentages didn't change much when the speed limit was reduced from 70 mph to 55 mph. Complete statistics weren't compiled in 1973, but New Jersey's 1972 figure was 6.25 percent fatalities caused by exceeding the speed limit. In California in 1972, unfortunately, fatality figures for exceeding the speed limit weren't broken out of the total. But it's easy to see that in New Jersey, at least, the number of people killed because of speeding stayed virtually the same no matter what the speed limit, while the percentage of drivers driving faster than the posted speed limit rose from only 10 percent who exceeded the 70-mph limit in 1972 to over 60 percent who exceeded the 55-mph limit in 1976.

Surprisingly enough, there has been no NHTSA study on the causes of fatal accidents. These records are kept only on a state level, but, according to NHTSA, figures have been collected on a national level for drunken drivers and youthful drivers. And it's pretty well documented that over 50 percent of all vehicular fatalities are caused by

drunks and 20 percent by drivers between the ages of 17 and 24.

The moral of this story is obvious. Speed may kill, but drunks and inexperienced drivers kill about fifteen times as often. It's about time that the NHTSA rearranged its priorities accordingly.

—Rich Taylor

1. Driving while intoxicated 1126
 2. Driving within speed limit, but too fast for conditions 584
 3. Pedestrian stepped into road 375
 4. Driving on wrong side 237
 5. Failed to yield at intersection 237
 6. Disobeyed stop signal 190
 7. Improper driving maneuver 141
 8. Driver distracted by passenger 140
 9. Improper turn 103
 10. Pedestrian failed to yield 98
 11. Driving over speed limit 90
 12. Improper passing 53
 13. Improper lane change 48
 14. Under the influence of drugs 18
 15. Improper parking 17
 16. Brakes failed 14
 17. Following too close 11
 18. Other equipment failure 9
 19. Improper backing up 7
 20. Headlights failed 2
 21. Undetermined 438
- Total California 1976 fatal accidents... 3980
Source: Analysis Section of CHP

Why You Shouldn't Believe The Feds Body Count

BY RICH TAYLOR



The government says the 55-mph
speed limit saves lives.
We say the government is wrong.

Continued

Footnote to Fig. 1 (above): You will notice that the fatality numbers in this illustration do not agree with the numbers in the text. Both sets come from the NHTSA Office of Statistics and Analysis. The ones in the illustration are more recent, having undergone an "adjustment" earlier this year. The "adjustment" served to narrow the gap between pre- and post-speed limit fatalities. But why deaths, particularly those dating back to 1973, should be adjusted at this late date has not been explained.

“55-mph Speed Limit Saved Lives,” claims the headline in the *New York Times*. And the article of January 24, 1978, goes on to say, “Federal officials interviewed all agreed on one thing—that at least 50 percent of the reduction in traffic fatalities over the last few years was attributable to efforts by many drivers to comply with lower speed limits.”

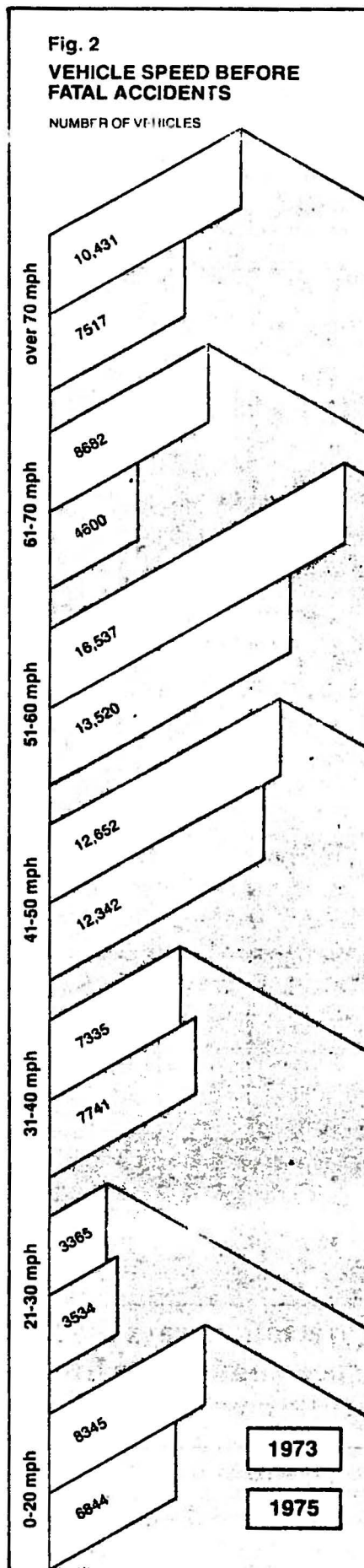
In this case, “federal officials” means representatives of the National Highway Traffic Safety Administration, and NHTSA is not exactly what you’d call an unbiased source. Their \$150 million annual budget is dependent on proving that American roads are safer because of NHTSA regulations, and the only statistics available come from NHTSA.

But NHTSA’s claims simply don’t add up. The 55-mph speed limit is nowhere near as effective at saving lives as the government would like you to believe, and you can prove this using NHTSA’s own statistics. Rather than accounting for 50 percent of the reduction in traffic fatalities, the 55-mph speed limit has accounted for no significant fatality reductions at all.

The 55-mph speed limit was made mandatory on all U.S. roads as of March 4, 1974. At that time, NHTSA had been convinced by a study done for the Ohio State Highway Patrol that reducing the national speed limit to 55 mph was the most efficient way to save gasoline during the “Energy Crisis.” But, even with the reduced speed limit, consumption increased. Domestic demand for gasoline actually rose from 6.674 billion barrels a day in 1973 to 6.978 billion barrels a day in 1976, as total vehicle miles traveled increased from 1309 billion to 1391 billion.

According to Dr. John Eberhart of the Department of Transportation, Office of Driver Research, the most accurate government study shows a maximum fuel savings of only one percent directly attributable to the 55-mph speed limit. To put this in perspective, John Kelley, director of development at the Firestone Tire & Rubber Company, says a one percent improvement in fuel economy can be gained by increasing inflation pressure of the radial tires on the average car from 24 to 26 psi. A one percent improvement in fuel economy is so insignificant, in other words, that no one now defends the 55-mph limit as a conservation measure.

The 55-mph speed limit has survived solely because it “saves lives.” According to table A-4, *Traffic Safety ’76*, published by NHTSA, there were 55,759 traffic fatalities in 1973—the last year of the 70-mph



speed limit—and only 46,629 in 1974, the first year of the 55-mph limit. In 1975, 45,515 people were killed; in 1976, 46,150. (Because of the complexity of compiling these figures on a national level, the 1977 total will not be available until later this year.) NHTSA officials would like you to believe that there’s an across-the-board correlation between the speed-limit reduction and this reduction in traffic fatalities, that reducing the speed limit by fifteen mph is responsible for at least half the average of 9661 lives saved each year for the past three years. Maybe. Then again, maybe not.

Until 1975, all government traffic-fatality figures included everyone who died within one year as a result of injuries suffered in a vehicular accident. But in the fall of 1975, according to Marvin Stevens of the NHTSA Office of Statistics and Analysis, the recording system was changed to include only people who died within thirty days after an accident. The published 1975 and 1976 fatality figures have been artificially reduced by five percent, says Stevens, making direct comparison impossible with earlier years. As research is being done for this article, the NHTSA has yet to publicize this change. Adjusted to conform to the earlier system, traffic fatalities were actually 47,791 in 1975 and 48,457 in 1976. Applying the appropriate correction, the difference in the number of traffic fatalities between 1973 and 1976 is then 7,302, not 9,609 as the NHTSA would like you to believe.

Still, considering that much of every driver’s time is spent mired in urban and other low-speed traffic, the real question is how many of these fatalities were even subject to the 55-mph speed limit in the first place. NHTSA claims that half of the fatality reduction when you compare 1973 and 1976 was due to the speed reduction. But according to table II.2.1.5. of the NHTSA *Fact Book*, 59.35 percent of all vehicles involved in fatal accidents in 1973 were traveling 55 mph or less before the accident, even though the speed limit was 70 mph. In 1974 and 1975 this figure was 66 percent. (Later information was not available at press time.)

This is a very important point. If 59 percent of all vehicles involved in fatal accidents were going less than 55 mph when the speed limit was 70, then it’s obvious that reducing the speed limit from 70 mph to 55 mph would not have affected these drivers. So, of the total reduction in fatalities that occurred between 1973 and 1976, 59 percent is not attributable to the lower

speed limit. To assess the effect of the speed limit change then, we must subtract 59 percent, or 4308, from the total reduction of 7302 fatalities to calculate the effect of 55 mph. Subtotal: 2994.

There's another big group of fatalities, a full seventeen percent, that hasn't been considered. In 1973, 9774 pedestrians blundered into the street and were killed by oncoming traffic; in 1976, only 7895 (8290, adjusted to compensate for the new NHTSA recording system) pedestrians were killed, according to *Traffic Safety '76*. This reduction of 1484 pedestrian deaths is due to a combination of factors, none of which had anything to do with the 55-mph speed limit. Breakaway hood ornaments and rear-view mirrors, smooth hubcaps and soft-nose cars have accounted for most of this reduction in low-speed pedestrian fatalities. Obviously, nearly all pedestrian deaths occur on surface streets where the speed limit was unchanged between 1973 and 1976. Subtract 1484 pedestrians from the 2994 fatalities saved between 1973 and 1976. New subtotal: 1510.

There are now about 104 million automobiles in the United States, and approximately ten million new cars enter the total transportation pool each year, while ten million old cars are scrapped. In other words, to make a complete changeover of all U.S. automobiles takes effectively ten years, actually a bit more. The Motor Vehicle Safety Act was passed only in 1966 and began to affect the design of cars only in 1968. The progression since then has seen the percentage of cars equipped with lap and shoulder belts increase from 60 percent in 1973 to 90 percent in 1976, according to NHTSA's *Fact Book*.

The big change in seatbelt usage came in 1974, due to the ignition interlock, the same time as the 55-mph speed limit came into effect. But since the interlock was a short-lived measure, disregard it. Still, between 1973 and 1976, 30 million 1974-1976 cars equipped with lap and shoulder belts entered the highways, according to NHTSA's *Fact Book*, while another 30 million old cars with only lap belts or no belts at all left the highways. The usage for seat belts increased from six percent on 1963-1966 models in 1973 to 21.37 percent on 1974-1976 models in 1976, according to *Safety Belt Usage Survey*, published by NHTSA.

According to NHTSA's *Traffic Safety '76*, page 5, "Each ten percent increase in the usage rate of lap and shoulder belts results in about 1115 lives saved." Since usage of lap and shoulder belts increased fifty percent between 1973 and 1976, sub-

tract 1673 fatalities saved through increased use of better seatbelts in order to determine the effect of the 55-speed limit. New subtotal: -163.

The Motor Vehicle Safety Act of 1966 decreed a multitude of changes in car design in addition to lap and shoulder belts. These include collapsible steering columns, energy-absorbing chassis and dashboards, roll over protection, side-impact door guards and energy-absorbing bumpers. Almost 30 million safer 1974-1976 cars were put on the roads between 1973 and 1976, while another 30 million comparatively

The speed limit had nothing to do with the 1484 fewer pedestrian deaths in 1976

unsafe older cars were junked. According to studies done for NHTSA by the North Carolina Highway Safety Research Center, a person is "ten to fifteen percent less likely to be killed or seriously injured in a post-1974 car." Let's split the difference at 12.5 percent for purposes of discussion. Now, this study has lumped fatalities and serious injuries together. But we will statistically separate them by referring to a study conducted by Volvo in 1965 and 1966, which concluded that serious injuries and fatalities occur in a ratio of 6.5 to 1. In other words, of the 12.5 percent reduction in serious injuries and fatalities observed by the North Carolina Highway Safety Research Center, only about 1.9 percent are fatalities. But, since 1974 and newer cars accounted for only about one-third of the cars on the road in 1976, only one-third of the 1.9 percent can be applied to the overall car population. Applying that factor to 1973 deaths yields a savings of 353 lives attributable to safer car design. New subtotal: -516.

According to Marvin Stevens of NHTSA, stricter driver-licensing requirements, stricter vehicle inspections, improved roadways, completion of more miles of federally funded Interstate highway, increased police patrols and stricter drunk-driver legislation have all contributed to the reduction in highway fatalities. Breaking out figures for the individual changes is impossible, says Stevens, but there has obviously been some benefit. We will not try to calculate it here.

What else changed? Well, there has been a dramatic shift in the number of drivers who are safer than the average. In the 1973

to 1976 period, drivers increased by six million, according to the *Fact Book*, with a corresponding shift of the total driver population from 55.2 percent male/44.8 percent female to 54.2 percent male/45.8 percent female. Because men are involved in fatal accidents at about four times the rate of women (among other factors, they drive more miles), this population shift should result in about 1.1 percent fewer fatalities if everything else remained the same.

We could go on about the reduction in the number of convertibles and the increasing tendency of all cars to gravitate towards a weight of 3100 lbs.—thus eliminating the dangerous weight disparity between big cars and small cars in two-car collisions, which is pointed out by Hans Joksch in *Analysis of Increased Small Car Usage upon Traffic Deaths and Injuries*, published by the Department of Transportation. There have also been a substantial increase in the use of radial tires with improved roadholding, increased use of disc brakes and heavy-duty suspensions.

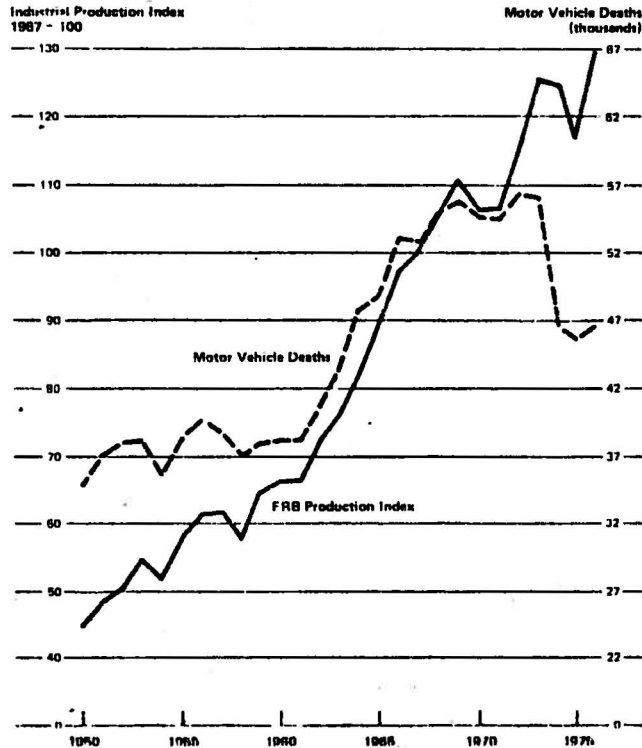
You get the point. NHTSA would like you to think that 9609 people were saved in 1976 who would have been killed in 1973, and that half those people, 4805, were saved because the speed limit had been reduced from 70 mph to 55 mph. There is no reason to believe that. In fact, data provided by the NHTSA suggest otherwise. Comparing vehicle speed immediately before fatal accidents (Fig. 2) for 1973 and 1975 (numbers for 1976 are not yet available), we can see that the reduction in accidents happened not only above 55 mph but also below 20 mph. So it would be very difficult for a rational man to give all the credit to the lowered speed limit.

We're not going to argue that the 55-mph limit actually cost 516 lives, as our calculations show. That would be as feeble as the NHTSA's position. Instead, we'll settle for a compromise. The NHTSA already admits that the 55-mph speed limit doesn't save fuel. It should admit that it doesn't save lives either.

And when it gets that done, it might just as well raise the speed limit back up to 70 mph where it was, at least on the Interstates. The death rate is incredibly low there—1.43 fatalities per 100 million vehicle miles in 1975 (the latest figures available)—less than half that of any other type of road. And it is insensitive to speed.

Looking back into our history for precedents, Prohibition was another misguided attempt to restrict the American people, and when it was proven ineffectual it was rescinded. We think that same time has come for the 55-mph speed limit.

Gasoline and Prosperity Don't Mix.



• In its campaign against traffic deaths, the safety establishment invariably falls back on statistics. It tries to find a correlation between an increase in fatalities (or a decrease) and some other trend or occurrence in society. But these correlations are hard to find. Traffic deaths don't automatically go up when the number of cars on the road increases. Or when the number of licensed drivers increases. Or when the average horsepower of the new models goes up.

To the frustration of everybody, traffic deaths seem quite unpredictable. That is why the NHTSA has been so quick to credit the 55-mph speed limit with saving lives. On the surface, there is a correlation. But after checking through the evidence it appears to be more of a coincidence.

There is, however, one correlation that seems unshakable. That is the relationship between motor-vehicle deaths and the Federal Reserve Board's Industrial Production Index, a commonly used indicator of the strength of the economy. As you can see on the accompanying graph, whenever the Industrial Production Index goes up, so do fatalities. And when the index goes down, there is an associated reduction in deaths.

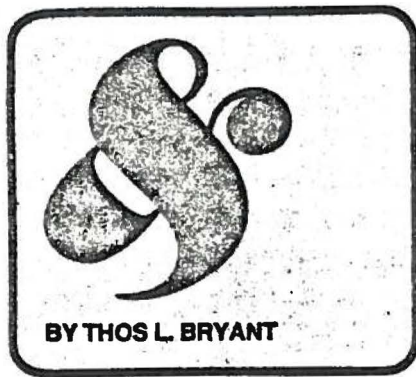
This relationship was noted by B. Bruce Briggs in his well-researched book, *The War Against the Automobile*. He reasoned that the mood of the nation changes with the economy. "In hard times, people are pessimistic and cautious, and are not risk takers.

... Good times mean good feelings, ebullience, optimism and a tendency to put your foot on the gas and go." Certainly the death rate supports this conclusion.

Interestingly, the death rate also suggests something else. Looking at the two curves, it's clear that their respective rates of increase begin to diverge about 1968. Even though the Industrial Production Index continues to climb, deaths start to level off and later decline. You will remember that 1968 was also the year in which federally mandated safety equipment (energy-absorbing steering columns and other occupant-protection devices) first became required on new cars. It would appear that this equipment is doing the job for which it was designed.

Nevertheless, it seems to be the economy that's calling the shots here, because, with or without the safety equipment, both curves rise or fall at the same time. Then why, you ask, doesn't somebody mail this page down to the NHTSA so our men in Washington can get on with the real correlation? Well, you can forget that approach. They already know this stuff. In fact, the graph was taken from the NHTSA *Fact Book*.

So why don't they pay attention to their own data instead of trumpeting red herrings such as the speed limit? For that answer you'll have to examine the political process by which laws are made. Congress is not likely to vote for a recession, no matter how many lives it would save. —Patrick Bedard



COMFORTABLE SPEED VS LEGAL SPEED

There's a big difference, according to one study

THERE HAS BEEN a multitude of words written, spoken and probably shouted about the national 55-mph speed limit which has been with us more than two years now. And it will probably remain in force for quite some time, if not forever, despite the antipathy of many drivers. Several of us associated with R&T have been traveling recently, covering rather long distances in a variety of cars, and have rediscovered the impracticality of 55 mph. The Feature Editor recently drove approximately 5000 miles round trip going home to Wisconsin for the holidays and I made a 2500-mile jaunt to Wyoming and back. One of life's great frustrations is being on the interstate highway system in the wide open spaces of Nevada or Utah and only a single car in sight . . . that one, unfortunately being a highway patrol car. You stare at the mountains in the distance and it seems they never get any closer.

One of the more interesting essays I've

seen on the subject of the speed limit is "An Analysis of Comfortable Driving Speed" by Dr Ronald Morris and Charles Berry, Jr. Their report stems from an experiment they carried out for Texas A&M University's Texas Transportation Institute, in which they hypothesized that a comfortable driving speed would be established by the driver based on vehicle characteristics and roadway design and conditions if he or she was not receiving feedback from the speedometer.

Dr Morris is now living in southern California and I spent some time talking with him about the experiment and reading the report he presented to the 14th SAFE Symposium (SAFE is an organization of specialists involved with survival, transportation safety, life support and related fields).

In stating the problem of comfortable driving speed, Dr Morris says that even the casual observer can perceive that

there is a relationship among himself, the operating characteristics of the car being driven and the roadway parameters, which tends to establish a comfortable speed of sustained travel. Dr Morris admits that the exact nature of this relationship is not known even though there has been a considerable body of research over the past several decades attempting to identify parameters.

The primary question for our purposes here is what effect does mismatched comfortable speed and legal speed have on driver performance. Dr Morris says that if a driver's comfortable speed varies significantly from the legal speed limit, and if the driver desires to remain legal, he will constantly be adjusting speed by throttle changes and continuous observation of the speedometer. He adds that any relaxation of vigilance results in a tendency to return to the comfortable speed.

To test this hypothesis, Morris and →



Berry designed an experiment in which they attempted to keep the number of uncontrolled (nuisance) variables to a minimum. With the cooperation of the Texas Department of Public Safety, they used an isolated section of Interstate 30 some 40 miles west of Texarkana, Texas. All testing involved runs in both directions to compensate for lighting and wind conditions, tests were conducted at the same time of day during dry, sunny weather, the vehicle's interior temperature was maintained between 70 and 75 degrees Fahrenheit, and driver instructions were administered identically to all subjects by use of a tape recording.

Morris adds, "It was assumed that vehicle type would be a significant parameter, so a single-factor, 3-treatment-level, completely randomized experiment was constructed. Three automobiles, selected to cover the range of generally available commercially manufactured types served as the test vehicles." These were a Datsun 240Z, a Ford Torino station wagon and a GMC Sports Van, each with less than 22,000 miles and each recently tuned (including wheel balance and alignment) to factory specifications. Each was equipped with a speed recorder that was hidden from the driver, and the instrument panel was covered so the driver had no feedback from the vehicle's standard instrumentation. The drivers involved were not told the purpose of the experiment and their instructions were as follows:

"You have been asked to take part in a human factors experiment. You will be required to drive approximately 30 miles on Interstate Highway 30. This experiment is intended to measure various human factors associated with driving; the instrument panel will be covered. You are asked to find a speed which is comfortable to you and maintain it. I will be taking various measurements during the experiment but try to ignore what I am doing. Your task is to drive as you normally would. Adjust your speed so that it feels comfortable to you. If there are any questions I will replay the tape; otherwise, begin now. I will give directions as required."

There were seven drivers for each of the three vehicles but none of them drove more than once. Dr Morris concedes that his sample was small in number and thus conclusions drawn from the experiment must be general. He adds that there is an apparent need for more experimentation to determine the nature of the distribution of comfortable driving speeds. His conclusion?

"The experiment clearly demonstrates that the average comfortable driving

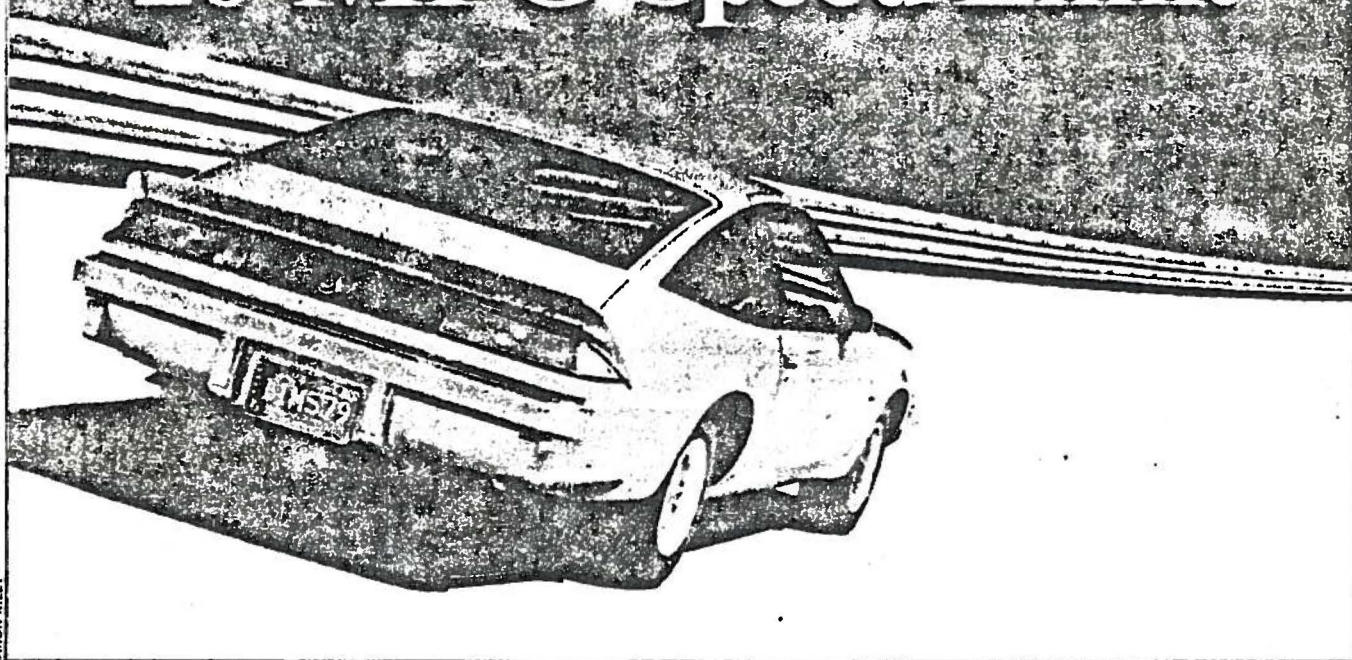
speed is well above the existing national speed limit of 55 mph. The analysis of our data resulted in an overall mean comfortable speed of 69.94 mph with a standard deviation of 4.425 mph. From this it is reasonable to conclude that the probability that the entire population's comfortable speed is 55 mph is essentially zero. The comfortable speed of 69.94 mph demonstrates that if the present speed limit of 55 mph is to be continued, further research is needed in the areas of vehicle and roadway design to establish a more acceptable interface between inherent vehicle characteristics and legal speed limits."

Dr Morris adds that constant attention to speed on the part of the driver places additional stress and fatigue on the person, as well as requiring constant throttle corrections which do little to maximize engine performance and conserve energy.

Just as an additional-point of interest, the fastest mean average was for the GMC van. The 240Z was second fastest and the station wagon was third. Dr Morris told me that if anyone is interested in pursuing this line of research, he would be happy to give whatever assistance and guidance he can, even though he is presently in a different field. He can be reached at PO Box 2169, Downey, Calif. 90242.

NOVEMBER 1977

What This Country Needs Is a Good 20-MPG Speed Limit



AARON KILEY

That way we could save time while we're saving gas.

BY PATRICK BEDARD

• We must assume that our lawmakers had their hearts in the right places during the hard times of 1974 when they lowered the speed limit from 70 to 55 mph. The nation was faced with a critical fuel shortage, and nobody either then or now disputes that cars use less fuel when traveling at lower speeds.

But just because their hearts were in the right places doesn't mean that they did the right thing. Why, a reasonable man might ask, if the government was looking for a

way to boost fuel economy, did it make a law controlling speed? Speed, in the fundamental sense, has little to do with economy. If the government wants better fuel economy, it should pass a law that specifies fuel economy.

Moreover, that same reasonable man might find the 55-mph limit discriminatory in that it does not divide petroleum resources equally among motorists. In an America based on equal rights for all, why does the law allow motorists who opt for

fat-back highway hogs to burn more fuel than those who voluntarily choose more frugal models?

The question boils down to this: If the government wants twenty mpg, why doesn't it write a twenty-mpg law instead of a 55-mph law? Because even though speed does have some effect on fuel consumption, it's not nearly as important as the type of car.

Our technical editor, Don Sherman, has produced an eye-opening set of test results.

20-MPG *Continued*

He evaluated three cars: a 460-cubic inch Ford LTD as the typical gas guzzler; a 305-cubic inch. automatic Monza Spyder as a representative performance car; and a 1600cc Ford Fiesta, a delegate from the econobox ranks. In each car, he measured steady-speed fuel economy in ten-mph increments from 30 to 90 mph (actually, he ran the Monza up to 110 mph).

The data shows that the 55-mph limit effectively subsidizes gas guzzlers at the expense of more efficient cars. Peak mileage of the LTD was 16.5 mpg at 40 mph. Consumption dropped to fifteen mpg at 55 mph and twelve mpg at 70 mph. The Monza's most efficient range was 35 to 55 mph where it produced 25 mpg regardless of the speed. At 70 mph, mileage dropped to about 21 mpg. As expected, the Fiesta was a miser, scoring a peak of 58 mpg at 30 mph, dropping to 46 mpg at 55 mph and 35 mpg at 70 mph.

But most important of all, the curves show that car size is ever so much more important than speed. The Monza, at 92 mph, produces the same economy as the LTD at 55 mph. And driven flat out, the Fiesta still gets better mileage than that of the LTD when it is cruising at its most

When it comes to saving gas, tests show that car size is ever so much more important than car speed.

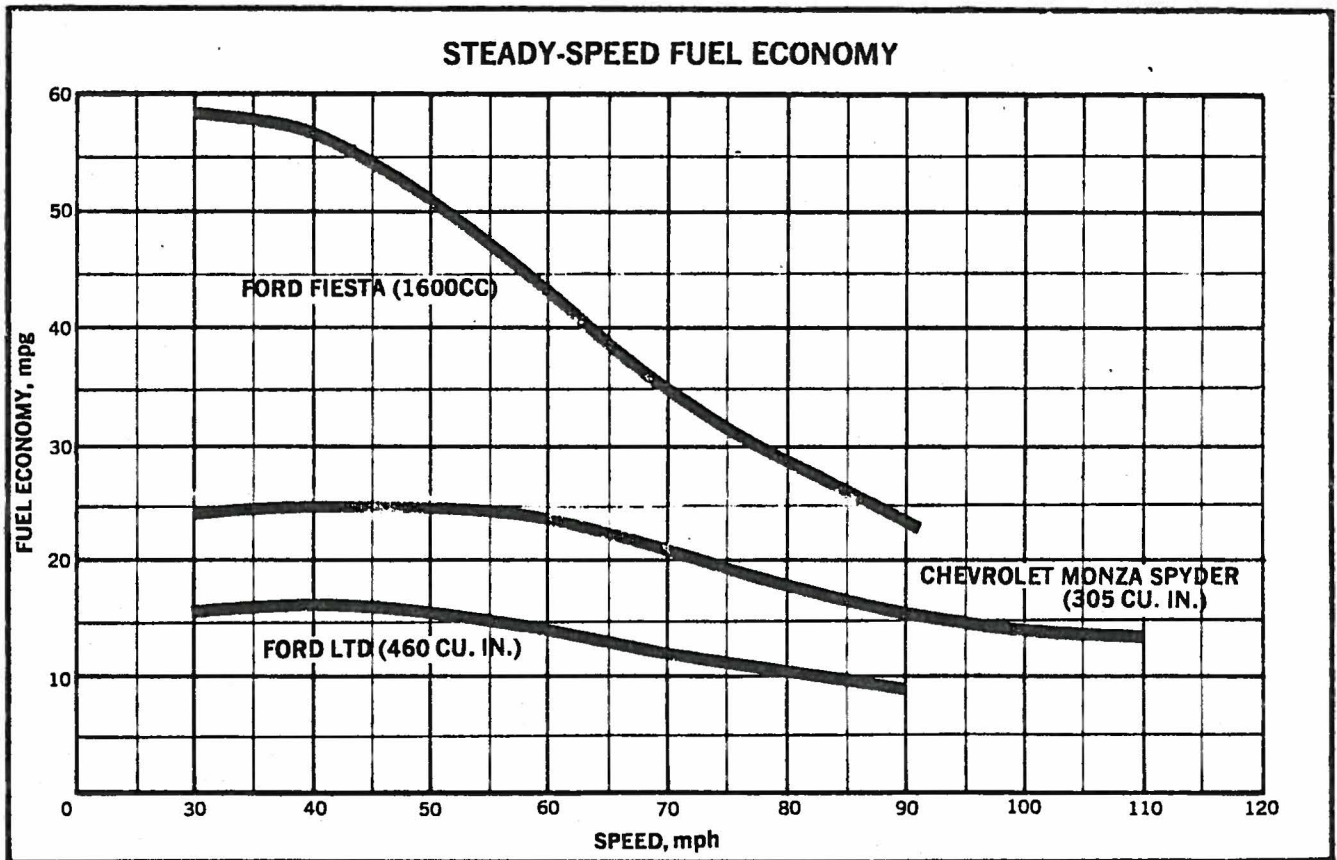
efficient speed of 40 mph.

The comparison shows up the 55-mph limit for the limp gesture that it is. And President Carter's idea of a gas-guzzler tax, at least temporarily put on the shelf now, is more of the same bureaucratic folly. What this country needs is a good twenty-mpg speed limit (or eighteen mpg, or 22 mpg—whatever can be agreed upon in the smoke-filled committee rooms). Let the motorists go as fast as they want so long as they don't drop below the mileage minimum. You can be sure that gas guzzlers would lose their appeal if they were confined to the slow lane, being passed by streams of Fiestas, Hondas, Rabbits, Chevies and the like.

Such a scheme could be easily put into motion. The EPA compiles mileage figures on every new car as it is being certified for emissions. A speed limit for each car could be based on the same data. The government already requires that emissions numbers be pasted on the side windows of new cars. Maximum allowable speed could be placarded there as well.

Of course, there would be criticism from the safety establishment. It would see the unequal speeds as a source of danger. But it should be reminded of the natural selection process at work here. The slow speed limit for big cars would soon make them unpopular, weeding them out of the traffic mix, ultimately making the roads a safer place for smaller, more efficient cars. And in fact, the hazard to small cars would be reduced immediately because big cars traveling at lower speeds pose less of a threat.

But best of all, getting rid of the speed limit in favor of an economy limit provides an incentive to improve transportation that's missing now. The first goal of better transportation always has been—and always should be—getting to the destination sooner. And who can argue with getting there sooner and saving fuel in the process?



The 55-mph fallacy: Slowing a 460 LTD from 70 to 55 mph saves three mpg but 23 mpg could be saved in a Fiesta without slowing.

1 1974 was a year of desperation. Millions of motorists all across the country reported late to work because a good portion of their early morning hours were spent playing a new game called "Find The Fuel." No one felt much like playing, particularly when the payoff might be as little as an eight- or ten-gallon drink, maximum. The motorist was rightly outraged. There could be no winner in such a game

But the worst was yet to come. The government quickly upped the ante of desperation by responding in kind with another desperate move. The 55 mph speed limit was enacted by an unpopu-



PHOTO BY RICHARD J. STANLEY

CATCH 55: THE NATIONAL SPEED LIMIT

Does Congress have enough sense to pound sand into a rat hole?

By Herb L. Adams

lar and essentially inoperative administration with the avowed intent of conserving precious gasoline. The government also undertook the task of printing millions upon millions of rationing coupons. "Just in case."

States quickly jumped into the act, many of them with "rationing" programs of their own. The government countered with its own national allocation plan, supposedly based on each state's own needs for fuels. Daylight saving time became the law of the land to help conserve heating oil.

Since then, of course, our Arab friends have resumed business as usual, if only for the time being. Permanent daylight saving time is gone, as are state's rationing schemes. All the threatened lawsuits which would have pitted state against federal government over allocation allotments are forgotten. Tensions have eased. For the time being.

But what about this offensive 55 mph speed limit? The bad news is well known, it's here to stay. Both houses of Congress have perpetuated the lowered maximum speed indefinitely. What about the ire of multitudes of Americans—often expressed violently during the so-called "crisis days"—against this most unpopular restriction?

Has it, in fact, saved enormous amounts of gasoline as promised?

No one knows. The federal officials whom one might suspect have such data have remained strangely silent. The Ford administration admitted that no one, *except* the oil industry itself, has any hard facts on what our real petroleum situation is.

Reason urges us to confess that we believe there is a distinct possibility that this 55-mph speed limit may actually be preventing us from using our finite fuel reserves most intelligently.

We're getting ahead of the story. When the 55 mph speed limit was first imposed it was because it seemed a quick means of saving gasoline and would affect all citizens equally. Raising the price of gasoline (which happened anyway) was rejected because of obvious increased hardships (proportionally) to lower income families.

Although the lowered speed limit might appear to be equal for all citizens, consider a Cadillac traveling at 55 mph and a Volkswagen cruising at 70 mph. The Cadillac is using approximately twice the fuel, even though it is traveling slower. It would be difficult to administer a law which would permit smaller, more economical cars to run faster but this would probably be fairer.

Before we look at an alternative means of saving gasoline, let's look at just how much the 55 mph speed limit might be saving. Figure #1 shows a typical full-size car's fuel usage at constant speeds. At 70 mph it gets 16.2 mpg and at 55 mph it gets 18.6 mpg.

The difference is 2.4 mpg or a 14.8 percent increase in fuel economy. It should be noted that is the maximum increase that could be expected. Factors such as some smaller cars in the overall driving population and actual variable-speed driving conditions would significantly reduce this percent of improvement. Since we don't have data to support these factors, we will use the 14.8 figure for further analysis.

All the cars in the country do not run at highway speeds because they are frequently operated in urban areas. The U.S. Department of Commerce estimates that 45 percent of the mileage accumulated by passenger cars is on rural roads which are affected by a 55 mph limit. This means that the 14.8 percent savings in gasoline must be factored by 45 percent for an actual savings potential of 6.7 percent. This savings must be factored again by the mileage driven in those states that had speed limits lower than 70 mph before the Federal law was passed.

THE NATIONAL SPEED LIMIT

FUEL ECONOMY VS. CONSTANT SPEED

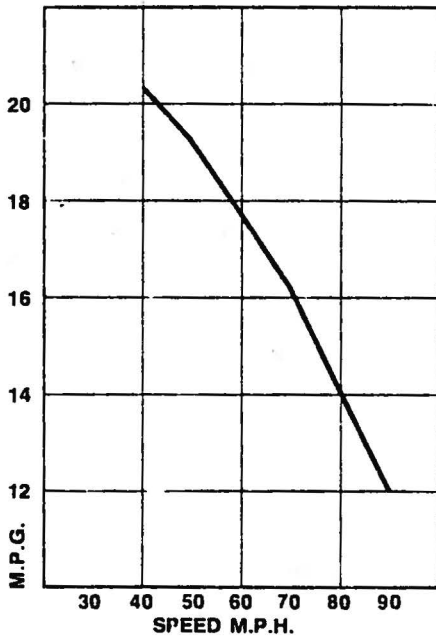


FIGURE #1

Figure #2 shows the state by state breakdown of old speed limits and population. A weighted average of the population of each state plus an average of the state-imposed speed limits shows that 63 mph is representative of the average speed a driver was traveling in rural areas before the federal 55 mph limit was imposed. When this data is factored into our 6.7 percent potential savings, the maximum savings is consequently reduced to 3.1 percent.

This calculation does *not* consider that some drivers always exceed the speed limit or that some drivers never go as fast as the limit allows.

It does not take into account driving factors such as acceleration, hill climbing and traffic patterns that would all reduce the potential savings. For comparison purposes it is safe to say that the three percent savings in fuel we calculated is the maximum that might be expected as a result of the federal 55 mph speed limit. Considering actual driving conditions in all parts of the country, the minimum potential gasoline savings could be as little as one percent. A three percent fuel savings is significant but not really very much in light of the enormity of the problem.

Can a better way to save gasoline and the time-saving 70 mph speed limit go together? Ideally, a fuel conservation program should affect all people equally and save maximum amounts of fuel. If we could reduce the weight of the average car by 1000 pounds we

SPEED LIMITS AND POPULATION

STATE	DAY	NIGHT	INTERSTATE	POPULATION (1,000's)
ALABAMA	60	50	70	3,151
ALASKA	60	—	70	305
ARIZONA	60	60	—	1,742
ARKANSAS	60	—	75	1,976
CALIFORNIA	65	—	65	19,994
COLORADO	70	—	70	2,225
CONNECTICUT	RP	—	—	3,039
DELAWARE	50	—	60	550
WASHINGTON D.C.	45	—	50	753
FLORIDA	65	70	—	6,845
GEORGIA	60	50	70	4,602
HAWAII	45	—	65	774
IDAHO	60	55	70	717
ILLINOIS	65	—	70	11,137
INDIANA	65	—	70	5,208
IOWA	70	60	75	2,830
KANSAS	70	60	75	2,248
KENTUCKY	60	50	70	3,224
LOUISIANA	60	—	70	3,644
MAINE	45	—	70	995
MARYLAND	50	—	70	3,937
MASSACHUSETTS	40	—	65	5,599
MICHIGAN	65	55	70	8,901
MINNESOTA	65	55	70	3,822
MISSISSIPPI	65	—	70	2,216
MISSOURI	65	60	70	4,693
MONTANA	65	55	—	617
NEBRASKA	65	60	75	1,190
NEVADA	No limit except as posted in rate.			493
NEW HAMPSHIRE	60	—	70	742
NEW JERSEY	50	—	60	7,195
NEW MEXICO	70	70	70	1,018
NEW YORK	55	—	65	18,260
NORTH CAROLINA	55	—	70	5,091
NORTH DAKOTA	60	65	75	618
OHIO	60	50	70	10,688
OKLAHOMA	65	55	70	2,572
OREGON	55	—	70	2,102
PENNSYLVANIA	55	—	70	11,817
RHODE ISLAND	55	45	60	951
SOUTH CAROLINA	60	50	70	2,596
SOUTH DAKOTA	70	60	75	666
TENNESSEE	65	55	75	3,932
TEXAS	70	65	70	11,254
UTAH	60	50	70	1,069
VERMONT	50	—	65	447
VIRGINIA	55	—	70	4,653
WASHINGTON	60	—	70	3,414
WEST VIRGINIA	50	—	70	1,716
WISCONSIN	65	55	70	4,433
WYOMING	65	—	75	334

FIGURE #2

would realize a fuel savings far greater than would ever be possible with reduced speed limits.

The weight of your car has a greater effect on fuel economy than any other design factor. Analysis of comprehensive data shows that the *overall* fuel economy is approximately equal to a constant,

$$\text{MPG} = \frac{56,000}{\text{Weight}}$$

56,000 divided by total vehicle weight.

Figure #3 shows this relationship for a group of cars with varying weights and fuel economies. This data indicates fuel economy that is realized in overall driving conditions such as you might encounter in putting 25,000 miles on your car over a two year period. As is shown by the data it is accurate within two mpg. This variation allows for different driving habits, car-to-car variations, engine tune and all the other variables that affect fuel econo-

OVERALL FUEL ECONOMY VS. TOTAL VEHICLE WEIGHT

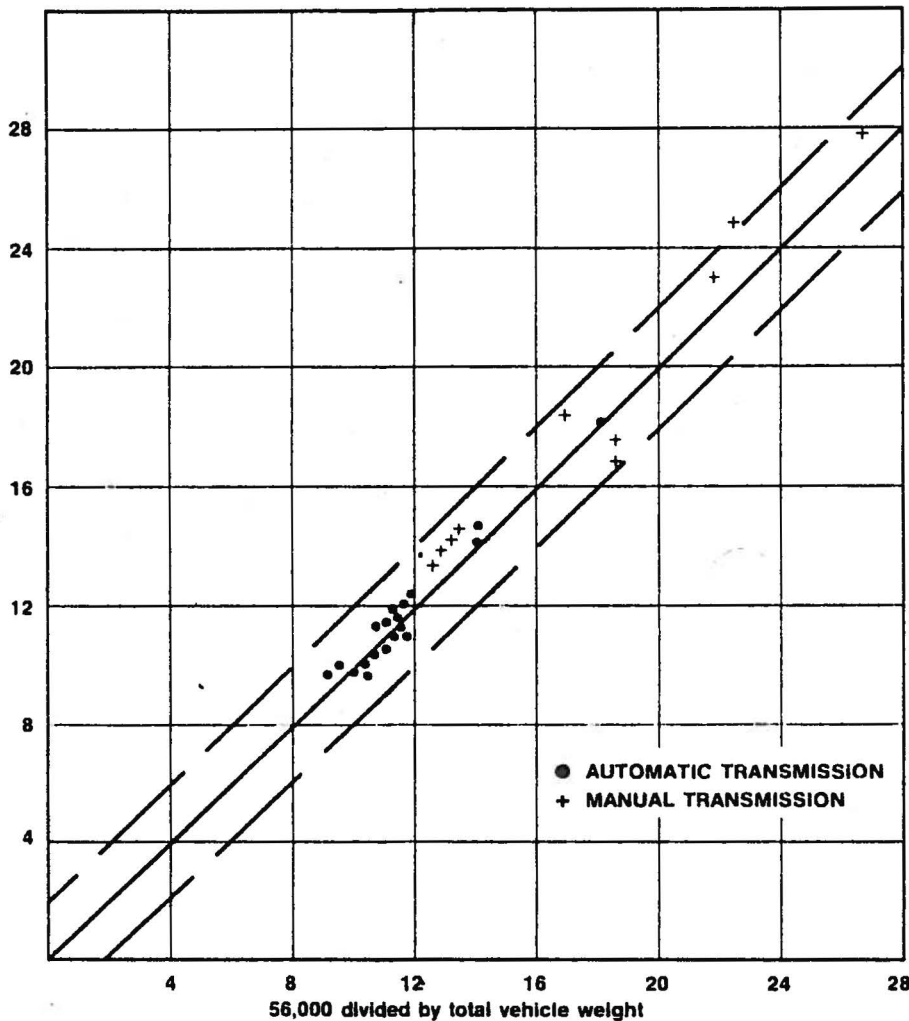


FIGURE #3

my. Our purpose in presenting this data is to show the relationship between fuel economy and total vehicle weight. In this case the total vehicle weight includes passengers, cargo and anything else that moves with the car. Reduced weight results in fuel savings because less energy is required to move less weight. Using the chart for an example we see that a 4000 pound car will get approximately 14 mpg average under all driving conditions. We also see that a 3000 pound car will get 18.6 mpg under the same conditions. This increase of 4.6 mpg equals a 32 percent saving in fuel. If we could reduce the weight of the average car on our roads from 4000 to 3000 pounds, we would realize a fuel savings ten times as great as might be realized with the 55 mph speed limit. The reason reduced weight can save so much fuel is because every car will save all the time, not like with a reduced speed

limit where only a select few will save on select occasions.

Foreign manufacturers (and Detroit, to a much lesser degree) have shown us that it is possible to build smaller, lighter cars that are still safe, attractive and, if desired, luxurious. The use of smaller and lighter cars has the advantage of other savings besides that of gasoline. For one thing, fuel costs to customers will be reduced because they will use less gasoline. More importantly, the widespread use of smaller and lighter cars will result in raw material savings as well as a savings in the energy required to process these raw materials.

Automotive manufacturers will build any type of car that sells because their business is to make money. During last year's gasoline shortage the sale of small cars boomed. But, as soon as gas was available again, even at higher prices, people returned to buying big

cars. It is easy to see why Detroit has not forsaken large cars. What we need then, is an incentive to make people want to own and drive smaller, lighter automobiles.

The obvious incentive to buyers in the middle of a recession is monetary. If the government levied an excessive tax on the weight of cars—proportionally increasing with the weight of the vehicle—it would be possible to influence the weight of cars on the road and realize a savings in fuel usage. Since we would like to make it attractive for people to own and drive lighter cars, the formula for applying the excise tax should favor lighter weight vehicles. This can be done by making the excise tax a cubic function of car weight. An example of how this would work would be:

$$\text{TAX} = 3 \left(\frac{\text{Weight of Car}}{1000} \right)^3$$

WEIGHT	TAX
1000-pound car	\$ 3 per year
2000-pound car	\$ 24 per year
3000-pound car	\$ 81 per year
4000 pound car	\$192 per year
5000 pound car	\$375 per year
6000 pound car	\$594 per year

To simplify paper work in collecting taxes and as a further incentive to owning a lightweight car, all taxes of \$100 or less could be waived. This would mean that a car weighing less than 3000 pounds would pay no tax yet a 6000-pound car would pay almost \$600 per year in excise tax. Over the ten year life of a car, the excise tax of a heavy car could approach its initial cost. This system would permit the status seekers and wealthy to still own their large cars, but in the process they would be paying for the privilege. The majority of the public would be conscious of the cost savings advantages of lighter cars, buy them, and drive them for an overall savings in total gasoline used.

The above tax formula is presented only as an example. The constant and power of the formula can be changed to meet any tax rates that might be desired.

Since the change to light cars is one that must be made slowly, we propose for the full program to be exercised over a five-year period. This would allow for the normal death of existing cars while encouraging the manufacturers and the public to work toward the use of lighter cars. If the program were enforced 20 percent per year we would have a progressive approach to realizing the overall objective. The total

THE NATIONAL SPEED LIMIT

results would not be immediate but each year the fuel savings would increase and the tax dollars to the government would multiply.

To get some idea of how much tax money the government would realize, assume an average car weight of 4000 pounds. The first year, 20 percent of the total would be about \$40 per car. 108 million cars x \$40 each is over four billion dollars. The second year this would grow to over eight billion dollars until the fifth year when it would exceed 20 billion dollars per year. Naturally, by this time more people would be using smaller cars to save the tax. This would reduce the amount of money that the government

would collect in excise tax but it would also result in a considerable savings in gasoline and that is the real objective.

We have attempted here to show how much gasoline the 55 mph speed limit really saves. We have also tried to show that reducing the weight of cars is a much more effective means of saving gasoline. We hope that the government recognizes the effectiveness of this gas savings program and uses this—and all available—information in formulating our country's long range energy policies. But we doubt this will be the case. Remember that the federal government has religiously adhered to a knee-jerk, get-in-the-swim regardless attitude about your car and mine

that has resulted in some of the most laughable and ineffective laws on the books. And now that President Ford has proposed a five-year moratorium on emissions standards—against the advice of such prestigious organizations as the National Academy of Sciences—it is a pretty good indication that your government will continue to allow depressed big business all the leeway it can take, never you mind that implicit hardships of such policies will be forced onto an over-burdened public.

Yes, indeed, friend, you and I will continue to pay the biggest part of the tab to undo what has already been done. And that is the biggest rip-off of all. Such are the politics of desperation. ■

WYOMING

- *Has two bills introduced. One bill in the Senate, one in the House.
- *The House Bill (HB 432) has been amended to be similar to the Senate Bill (SB 117).
- *The Senate Bill passed, and is now in the House Transportation Committee.

CALIFORNIA

- *Has one Bill in the Senate to repeal the 55 mph speed limit and revert to prior speeds.
- *They have one resolution petitioning the U.S. Congress to remove the 55 mph mandate or remove the sanctions.

MONTANA

- *On the 30th day of a 90 day session, they have had no bills introduced in reference to the 55 mph speed limit.

COLORADO

- *House Bill 1341 changes speed limit from 55 mph to 65 mph. This bill is presently in the State Affairs Committee.
- *House Bill 1345 eliminates demerit point penalty from driving record; depending on the stretch of road. This bill was assigned to the Transportation and Energy Committee.

ARIZONA

- *House Bill 2011--Traveling over 55 mph becomes a petty offense; citations

would not count against insurance. This bill was amended and sent to the Transportation Committee.

*Senate Bill 1021--Extends the 55 mph speed limit from July 1, 1979 to July 1, 1981. This bill died on the floor.

IDAHO

*A Bill to change the speed limit from 55 to 65 died.

*Anticipate that other similar bills will arise.

NEW MEXICO

*A bill that would make a speeding citation of over 55 mph have a maximum fine of \$5. This bill was passed in the house but was killed in Senate Transportation Committee.

*A bill to raise the speed limit to 65 has not gotten out of the Committee.

UTAH

*Nothing currently introduced--they are awaiting action taking place in Wyoming

OREGON

*One bill to revert to suggested speed of 70 mph for the valley; 75 mph for the eastern portion of Oregon.

*A bill was introduced to raise the speed limit to 65. This was introduced by a majority of the House Transportation Committee

CHI-SQUARE CRITERIANevada Drivers Only

QUESTION: Is there a relationship between involvement in traffic accidents by Nevada drivers to the type of citation previously received.

LEVEL OF SIGNIFICANCE: 0.05 level

DEGREES OF FREEDOM: 2

CRITICAL VALUE: 5.991

NUMBER: 152 driver involvements (Sampling of 200 drivers)

Class	<u>1</u>	<u>2</u>	<u>3</u>	Total	Percent
	55 mph	Other Speed	Other Viol.		
<u>A</u> Involved in Accident 100 drivers	18 (18.3)	29 (35.2)	60 (53.5)	107	70.4
<u>B</u> Not involved in Accident 100 drivers	8 (7.7)	21 (14.8)	16 (22.5)	45	29.6
	26	50	76	152	100.0

<u>Class</u>	<u>fo</u>	<u>fe</u>	<u>fo-fe</u>	<u>(fo-fe)²</u>	<u>(fo-fe)²/fe</u>
A-1	18	18.3	.3	.09	.005
A-2	29	35.2	6.2	38.44	1.092
A-3	60	53.5	6.5	42.25	.790
B-1	8	7.7	.3	.09	.012
B-2	21	14.8	6.2	38.44	2.597
B-3	16	22.5	6.5	42.25	1.878

$$\chi^2 = 6.374$$

χ^2 of 6.374 is greater than the critical value of 5.991 at the 0.05 level, therefore, there is a relationship between accident involvement and the type of citation previously received.

Note: The foregoing figures are not numbers of citations. They are number of drivers cited. Several drivers received more than one citation per type. Firm correlation cannot be determined as all types of citation are not listed.

COMPARATIVE SURVEYACCIDENT AND DRIVERS RECORDS

<u>Class of Driver</u>	(Previous to Accident)			<u>No Violation</u>
	<u>55 mph viol.</u>	<u>Other speed viol.</u>	<u>Other Viol.</u>	
Nevada drivers involved in accident	18%	29%	60%	27%
Nevada drivers not involved in accident	8%	21%	16%	70%
California drivers involved in accident	34%	18%	48%	34%
California drivers not involved in accident	4%	8%	18%	76%

N = 300

Note: The foregoing are based on the percentage of drivers who received citations for a particular class of offense. The percentages will not total 100% because of those drivers who received more than one citation.

NEVADA HIGHWAY PATROL
 ENFORCEMENT REPORT - 55 MPH N.M.S.L.
 OCT. '76 THROUGH SEPT. '77

<u>Citations</u>	<u>ZONE I (Las Vegas)</u>	<u>ZONE II (Reno)</u>	<u>ZONE III (Elko)</u>	
56-65 mph	3,351	11,548	6,969	(21,868)
66-75 mph	11,085	7,619	9,826	(28,530)
76-85 mph	4,288	1,035	1,389	(6,712)
85+ mph	485	162	174	(821)
	<hr/>	<hr/>	<hr/>	<hr/>
	19,209	20,364	18,358	(57,931)

Residence (%)

Nevada	48%	47%	15%
Other	52%	53%	85%

3,351	11,548	6,969
<u>x .48</u>	<u>x .47</u>	<u>x .15</u>
1,608	5,428	1,045

1,608
 5,428
+ 1,045
 8,081