

C O M M A N D C O L L E G E
C L A S S I I

THE ELDERLY DRIVER AND TRAFFIC SAFETY
IN THE YEAR 2000

AN
INDEPENDENT FUTURES RESEARCH
STUDY

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TABLE OF CONTENTS

FORWARD	1
THE ELDERLY CONDITION	4
Decreased Vision	5
Rheumatism and Arthritis	5
Skeletal and Structural Changes	5
Changes in Central Nervous System	6
Cardiovascular Changes	7
Information Processing	7
Personality Changes	7
NEWS CLIPPING ON THE ISSUE	9
THE AUTOMOBILE	15
Plastics	17
Steering Systems	19
Instrumentation and Dashboard Design	20
Anti-Skid Systems	22
Run Flat Tires	23
INVESTIGATIVE INTERVIEWS	25
FLORIDA D.H.S.M.V. FORMS	36
LESSONS TO BE LEARNED FROM GENERAL AVIATION	39
ANALYSIS OF LICENSE RE-EXAMINATION IN OTHER JURISDICTIONS	41
PLOTTING THE FUTURE	46
Future Wheels	47
Delphi Instrument #1	51
Delphi Instrument #2	55
Trend Trajectories (Attitude Survey)	59
SCENARIOS	64
The High-Tech Scenario	65
Legislative Scenarios	70
Senior-Active Organization Scenario	72
Public Transportation Scenario	74

STRATEGIC PLANNING	76
Situation	77
Environmental Analysis	78
Resource Analysis	79
Stake-Holder Analysis	81
Mission Statement	85
Execution	85
Negotiations	87
Administration and Logistics	87
Communications	88
TRANSITION MANAGEMENT	90
The Current Situation	91
Transitions	92
Approach	92
Critical Mass	93
Management Structure	97
Technologies	97
Conclusion	98
FOOTNOTES	100
EXHIBIT A	102
EXHIBIT B	109
EXHIBIT C	113
EXHIBIT D	114

FORWARD

There is a folk tale that has been circulated throughout Europe since the thirteenth century, "The Tale of the Ungrateful Son."¹ The story begins with the description of an old merchant who day by day grows more infirm. The old man's wife has long since died, and he is miserably lonely. Fearing that he will soon lose the powers of his mind, the old man finally decides to ask his middle-aged son and daughter-in-law if he could live with them in their home in the country.

At first the couple is happy about the request for, in compensation for living with them, the old man has promised to will them his small fortune before he dies. But the old man in his dotage becomes increasingly more troublesome to clean and feed. Eventually the daughter-in-law grows more resentful of the old man's constant need and his senile chatter. Indeed, she berates her husband day and night until he reluctantly agrees that the time has come to take the old man out to the barn.

The ungrateful son, however, is too embarrassed to confront his father directly with this shameful decision. He gives that chore to his own youngest child.

"Take your grandfather to the barn and wrap him in the best horse blanket we have on the farm," he tells the boy. "That way the old man will be as comfortable as possible until he dies."

Weeping, the child does as he is told except that having selected the farm's best horse blanket, he tears it in half, and he uses one part to wrap his beloved grandfather.

Finally the old man dies and the grandson goes to the house to get his father. They both return to the barn, but when the father sees that the horse blanket has been torn in half he goes into a rage. "What have you done putting your grandfather out in the barn to freeze with only half a horse blanket!" he shouts. "But father," the child replies, "I am saving the other half for you."

The implications of the story are clear. Whatever we do with regard to elderly people will one day be visited on us. Hence it behooves us to act with care and concern when we, as a society, take any action which will affect our older citizens.

As each year passes the number of elderly increase. People are living longer, healthier lives than ever before. To illustrate further the spectacular achievements occurring in longevity and health: A person in the United States who reached age 65 in 1983 can be expected to live another 16.8 years. Many are living to be 100 years old. The 1980 Census counted 32,000 persons alive in the United States over 100 years old, a record figure and climbing daily.

The periodical "Health" in 1984 gives some specific reasons for the recent remarkable increase in longevity and health of Americans: improved eating habits, generally better over-all living habits; decreases in use of tobacco and the consumption of alcohol, increase in sensible exercise activities and a greater achievement of adequate rest on a regular basis. These lifestyle practices have increasingly been adopted by millions of Americans since the late '60s. These factors certainly account for the age group of 70 and over being the fastest growing portion of the population in the United States. The report "Health '84" shows that in

1983 the life expectancy in the United States reached nearly 75 years. This is a stunning four years longer than as recently as 1970, and seven years longer than in 1960.

A significant number of our older citizens are mentally alert and physically healthy and leading relatively normal, self-sufficient lives. Nevertheless, as the aging process inextricably takes its toll in reaction time, mental alertness, vision and other physical activities, there will obviously be some changes with the increasing population of elderly in the futures of traffic safety.

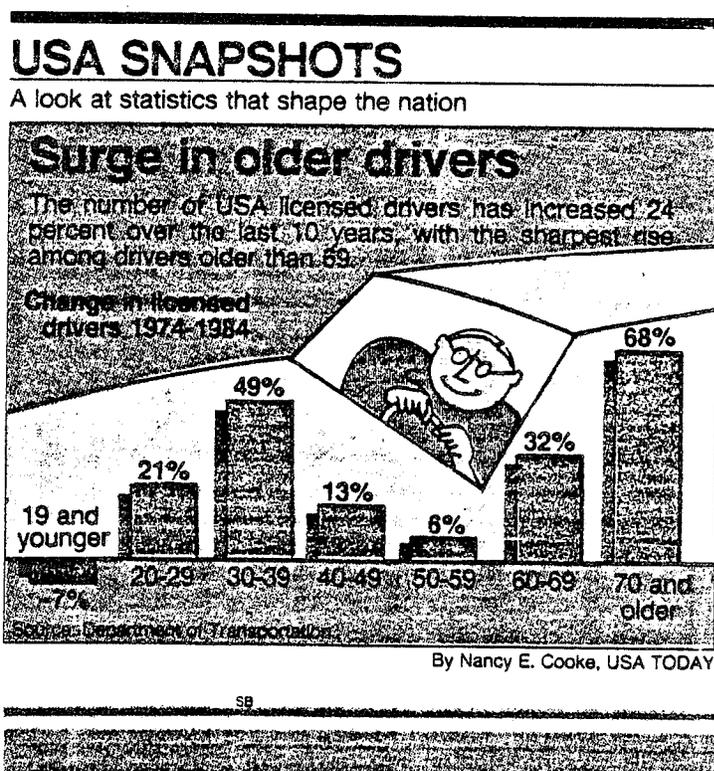


fig. 1

1. The Elderly Condition: As stated earlier, people are living longer than ever before. The average life expectancy has increased by 25 years so far this century.² Obviously, as the population grows older, so will that segment of the population who operate automobiles. Clearly this increase in the number of aged drivers will impinge upon the futures relating to traffic safety. How much impact will they have? Where and in what way? What are some of the things that can be done to mitigate any negative effects those elderly drivers may have? These are the questions that, along with others this research may pose, may guide in defining an appropriate public policy and for law enforcement and traffic enforcement organizations to begin to develop policies and procedures to meet these likely futures.

First we must look at what the process of aging does to the individual. As those processes take their toll from the person's physical and mental capacity, their ability to operate a complex piece of machinery in a rapidly changing environment will most likely decline. Certainly this will have an effect on accident rates in the overall picture of traffic safety. A cursory study of the accident statistics and interviews of police traffic commanders and Department of Motor Vehicles personnel indicates that the majority of the accidents involving elderly people result from poor vision, lack of physical coordination and mental confusion. Therefore we will begin by making a review of what is known currently of the physical problems that typically accompany the aging process and the current statistics regarding elderly drivers. Approximately 85% of those persons over 65 suffer from one or more chronic diseases, although only 5% suffer from senile deterioration severe enough to require that they be institutionalized.³

a. Decreased Vision: Visual deterioration is a natural consequence of aging. Older persons typically experience diminished peripheral vision, show a steady decline in night acuity and have a more difficult time focusing on near objects.⁴ Obviously this deterioration of visual acuity will have a severe effect on the individual's impact on traffic safety, particularly where night time driving is involved. Older drivers generally take longer to recover their night vision lost due to the glare from an oncoming vehicle during the night time. Also the ability to focus and re-focus from the roadway to a traffic sign to the roadway, and then to the speedometer or instrument panel, also takes longer. While the individual's eyes are taking this additional time to adjust from the highway to a traffic sign, to the instrument panel, and then back to the highway, the vehicle in motion is consuming additional feet of roadway without the driver of that vehicle being able to see what's occurring in front of him.

b. Rheumatism and Arthritis: Rheumatism and arthritis and a general stiffening of the joints are common among the elderly.⁵ These problems, coupled with a deteriorating nervous system, tend to slow reaction time which increases the chances of having an automobile accident. Likewise, backing up and changing lanes may be more difficult and more hazardous because the neck and spine of the older person is less supple than in his younger years. Typically, as the range of motion of his neck and head decrease, his field of vision is also decreased, and he is less aware of what's going on around him.

c. Skeletal and Structural Changes Resulting From Aging: As people age the skeletal system of the body goes through many changes. There's a loss of calcium which may be accompanied by diseases of the bone, and there are structural changes in the

muscular system. Muscle mass decreases with age. These two factors work in concert to make it more difficult to safely operate a motor vehicle.⁶ As an example, changes in posture may make it physically difficult or even impossible to operate vehicle controls effectively or to respond quickly in an emergency, while the reduction in muscle power may make it difficult to properly steer or brake the vehicle. This may be especially true in an emergency should a vehicle equipped with power steering lose power.

10-31-85

**Driving test
is a smashing
failure for him**

OAKLAND (UPI) — Many fail driving tests, but Roy Johnson, 89, Oakland, flunked in style by ramming his car through a window of the Department of Motor Vehicles.

State Police Sergeant Robert Best said Johnson was completing his 15-minute test Tuesday and had stopped in front of the DMV building with examiner Pamela Grayson in the car.

Johnson's foot slipped off the brake and hit the accelerator and his car sped across the 10-foot sidewalk, smashing about 18 inches into the building, Best said.

Johnson and Grayson were unhurt but the office received about \$1,000 damage, Best said.

Johnson did not qualify for a license renewal.

d. Changes in Central Nervous System: The aging process is often accompanied by changes in the central nervous system including slower response time, retarded reflexes, loss of balance and increased susceptibility to shock.⁷ Without a doubt these problems can have a tremendous impact on a person's ability to operate a motor vehicle, particularly in the case of unexpected traffic problems or an emergency situation. These problems will make it particularly difficult for the person's brain, the information processing center of the body, to be able to receive information fast enough to react in time to prevent an accident.

e. Cardiovascular Changes: Due to cardiovascular changes occurring in the body, older persons generally have some degree of impaired circulation as well as an increased probability of sudden death, lapse of consciousness or other disabilities sufficient to impair vehicle control.⁸ It has been the experience of law enforcement that when the operator of a motor vehicle suffers a heart attack or stroke, there is a knee-jerk reaction that causes a body stiffening in reaction to the intense pain. This is usually accompanied by stomping down on the gas pedal and the vehicle careening down the highway out of control. The researcher has personally investigated three accidents in his career where this has occurred.

f. Information Processing: As we get older the processing of information in the central nervous system takes more time. Hence it is more difficult to respond to hazardous situations.⁹ Decisions concerning tricky driving situations and unexpected road hazards become far more difficult than earlier in the individual's life. As police officers we see this day in and day out. The elderly driver may not know how to respond appropriately to an emergency vehicle coming toward them with a red light and siren. They become confused when confronted with new driving situations, changes in the roadway or unexpected distractions, such as a pedestrian in a crosswalk.

g. Personality Changes: Behavioral changes such as agitation, impatience, and impaired memory frequently are related to the impairment of the cerebrovascular circulation and are far more likely to be manifested in older persons.¹⁰ These changes can create hazards in driving and when such changes are extensive, or accompanied by disorientation,

periods of mental confusion or signs of advanced senility, driving by these people can become an extremely dangerous proposition.

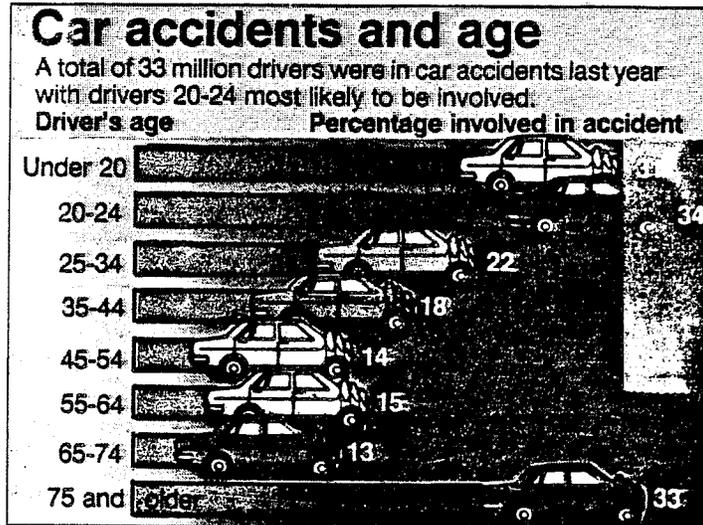
This list is not intended to be all-inclusive. Neither is it meant to suggest that all elderly persons suffer from any or all of these conditions.

Rather, the list is merely intended to represent some of the more common problems associated with the aging process and point out the effects these problems may have on one's ability to operate a motor vehicle safely.

There is ample evidence nationwide that drivers 65 and older have equal or probably fewer accidents per driver than do younger drivers. However, they also drive many fewer miles than any other group and when accident rates per miles driven are considered, the elderly are involved in more accidents per vehicle-mile-traveled than all other age groups over 25. In addition their chances of being seriously injured or killed if involved in a traffic accident are greater than for any other age group, generally because of their physical condition and the frailties of old age.¹¹

USA SNAPSHOTS

A look at statistics that shape the nation



Source: National Safety Council

By Suzy Parker, USA TODAY

SB

FIG. 2

7-14-85

Vehicle rammed through house

A man stepped on the gas when he should have hit the brakes Monday afternoon and drove his car into a parked vehicle, pushing it through the wall of a Port Hueneme house, police said.

John Charles Abbott, 71, Oxnard, was attempting to pull away from the curb in the 200 block of Fifth Street about 12:30 p.m., police said, when one of his tires jumped the curb.

Abbott told police he tried to stop the vehicle by stepping on the brake, but accidentally pushed the accelerator, sending his car up a driveway, through a chain link fence and into the rear of a parked car which, in turn, was pushed through the wall of the house.

Police said they had no estimate of the damage caused to the house and parked car, both owned by George C. Chavez of Port Hueneme.

No one was injured in the accident and Abbott was not cited.

2-16-86

Woman, 75, run over by own car

Fortunata Salvo, 75, of Riviera Beach, was crushed to death Tuesday by her own car, and her husband Frank, 81, broke his shoulder trying to save her. Neighbors said Mrs. Salvo was loading the Cadillac for a trip to visit their son when the car began to roll. The open door pushed her down, and she was dragged 20 feet and crushed under a wheel. The car's engine had been turned off but its gears had been left in neutral, neighbors said. Riviera Beach is in Palm Beach County.

— Compiled from staff and wire reports

4-19-85

Pair's wrong turn takes them right into the bay

ST. PETERSBURG, Fla. (UPI) — An elderly Chicago couple, thinking they were on an interstate highway bound for central Florida, drove their rented car onto an airport runway and into Tampa Bay, police said.

Jack Comiskey, 87, and his wife Winifred, 78, were hospitalized for observation and were reported in fair condition Thursday.

Police said the couple flew to Tampa International Airport on Wednesday, planning to drive to a nursing home in central Florida to visit her sister.

But as Comiskey left the airport, he apparently turned onto Interstate 275 South by mistake and, thinking he was headed east, drove through St. Petersburg. He

then swung onto Interstate 175, which feeds into the downtown area, ending a few blocks short of the Coast Guard station and Albert Whitted Airport on the bay-front.

Comiskey drove onto the Coast Guard base, mistook the runway entrance for a highway ramp, drove the length of the runway, across a grassy strip, over a seawall and into the bay.

"That car must have been doing at least 50 miles per hour when it went off the end," said Bill Jordan, who supervises the airport control tower. "We thought for sure that the car would stop before it hit the water, but it never did," Jordan said.

Five injured in vehicle crash near Fillmore

Five people from Fillmore were hit by an 87-year-old man who tried to pass a truck and misjudged the distance of oncoming traffic Sunday afternoon, north of Riverside Street on Highway 23.

Dewey Barton Mascho, 87, of Fillmore was traveling southbound on Highway 23 at 55 mph when he attempted to pass a truck. As he saw the oncoming car, he swerved to return to his lane and sideswiped the car, "almost hitting it head on," according to a California Highway

Patrol officer.

The oncoming car was driven by Refugio Arambula, 25, of Fillmore. He suffered a fractured left femur, fractured ribs and a lacerated forehead. Maria Arambula, 26, of Fillmore sustained lacerations and a fractured femur. Yolanda Trujillo, 19, of Hamilton City, suffered bruised legs and a 3-inch lacerated forehead. An 8-month old boy, Daniel Arambula, and a 3-year-old boy, Victor Trujillo, both of Fillmore, were uninjured.

The injured were transported by ambulance to Ventura County Medical Center where they were listed in fair condition today.

Mascho was transported to Santa Paula Memorial Hospital with multiple lacerations, a lacerated tongue, possible fractured ribs, and a fractured left knee and right elbow. He was also listed in fair condition today.

A CHP spokesman said Mascho will be cited for passing with insufficient distance to do so safely.

1-21-86

12-12-55

Wrong-way motorist, 74, called cause of pileup

An elderly Simi Valley man caused a major pileup on the Ventura Freeway this morning after driving his car more than 15 miles the wrong way in the southbound lane, California Highway Patrol officials said.

Investigators said Alfonso Americo Devito, 74, nearly clipped a CHP cruiser and struck four cars before he discovered his mistake.

The incident began at 5:15 a.m. when Devito entered the offramp to the Moorpark Freeway at Tierra Rejada Road, CHP investigators said, driving his car northbound in the southbound lanes, and continuing onto the Ventura Freeway clear to Camarillo.

Along the way he nearly ran a CHP patrol car off the road near the Camarillo Springs offramp.

His trip ended at the Pleasant Valley Road interchange, where he struck several cars, injuring at least one person seriously.

Struck head-on in the accident was a vehicle driven by Javier F. Alcaraz Pacheco, 23, Oxnard. Pacheco was taken to Pleasant Valley Hospital and then transferred to County Medical Center, Ventura, where he was still undergoing treatment this morning. Pacheco's passenger, Juan Lopez Perez, 47, was treated for his injuries at Pleasant Valley Hospital and released.

Drivers Thomas K. Mericle, 19, Hacienda Heights, and Gregory A. Casedy, 30, Newbury Park, were not hurt in the accident.

Devito was taken to Pleasant Valley Hospital, where he was listed in fair condition this morning.

Investigators said alcohol did not play a part in the accident.

Devito told CHP officers that he was headed to San Francisco and was unable to stop safely when he discovered he was driving in the wrong lanes, investigators said.

1-14-56

Two hurt when car rams Community Center

Two people were injured Monday when their car crashed into the Santa Paula Community Center at Steckel and Main streets causing \$3,000 worth of damage to the building and major damage to the car.

Joel Hickman Fristoe, 68, was driving the car eastbound on Main Street when his steering wheel locked as he was turning right. This caused the vehicle to jump the curb, go on to the lawn and hit the building.

In the police report, Fristoe said the steering broke loose just before he hit the building and at that time he turned left. He said he never took

his foot off the gas pedal.

Fristoe complained of pain to his left hip, but refused treatment. His passenger, Clara Gallaway, 48, complained of chest pain and a strong headache. She was transported to Santa Paula Memorial Hospital.

The driver was not insured, but the city will try to recover damages, said Norm Wilkinson, city engineer and public works director. He said the car hit one of the columns in the middle of the building, shattered its concrete footing and "punched it in" 8 to 10 feet. The column will have to be replaced, he said.

city AND state

ST. PETERSBURG TIMES

section **B**

FRIDAY, FEBRUARY 7, 1986

89-year-old man hits parked cars while taking driver's license exam

By **RON SUSKIND**

St. Petersburg Times Staff Writer

A 89-year-old man started his driving test in St. Petersburg on Thursday by pulling out of a parking space and hitting two parked cars, police said.

Harry L. Gilmore, of 7400 Sun Island Drive S in South Pasadena, had his driver's license suspended after the wreck, but left with a temporary instructional permit, said Richard Weaver of the State Department of Highway Safety and Motor Vehicles in Tallahassee.

The permit allows him "to brush up on his skills and take a re-test," Weaver said.

But the supervisor of the licensing office where Weaver was applying was unhappy with that decision.

"WE WANTED TO suspend him, period, as incapable of operating a vehicle. In 14 years on this job, I've never seen an accident like this," said Linda Marvin, of the licensing office at 931 Tyrone Blvd.

Gilmore had been ordered to take a driving test by the Pinellas County Sheriff's Department after he backed into a wall at a St. Petersburg mall last fall, said Marvin.

About 9 a.m. Thursday morning, Gilmore was driven to the licensing office in the Tyrone Gardens Shopping Center, by a friend.

He passed the written and vision tests, Marvin said, and then walked out to his 1985 Chrysler New Yorker for a driving test.

"He pulled out and then paused," said JoAnn Giffin, who was supervising the driving test. "And then he should have put it into forward to drive away. Well, he kept it in reverse and floored it. We flew back in a big circle and smashed those cars."

MOMENTS LATER, police arrived and ticketed Gilmore for careless driving.

The two cars he hit belonged to people getting licenses at the office, said police, who estimated damage to the two parked cars at about \$6,000.

Under the provisions of the 30-day instructional permit, Gilmore can continue to drive his car if a licensed driver is with him. He will have two more chances to pass the driving test, according to state officials.

Gilmore said Thursday night that he had thought of not driving anymore. "I'm just so damned old, but I need to drive," he said. "I drive over to the bank and grocery store, and that's it."

- Florida, 2-B
- Update, 8-B
- Business, 11-B
- Obituaries, 19-B

Some experts contend that elderly drivers are underrepresented in accident statistics due to the fact that they contribute to causing accidents in which their vehicle is not involved. For instance an overly cautious driver may often generate crashes by causing pile ups behind them or by aggravating an impatient driver into passing unsafely. The researcher saw this occur three times in the one day he was in St. Petersburg. In one instance a woman who clearly was in her late 70s or early 80s was driving a brand new 1986 Cadillac. She was driving at approximately 25 miles an hour in a 45 mile an hour zone. Before long a pile up of cars occurred behind her, and one driver passed three cars across a double-yellow line in his impatience to get ahead and proceed at the legal and reasonable speed limit. However, there are no available statistics to test this hypothesis due to the manner in which traffic statistics are gathered. Only those vehicles which are actually involved in the collision appear in the available statistics.

Driving problems and handicaps related to age escalate dramatically between the ages of 75 and 79. In research recently conducted by Dr. James Malfetti, the director of the Safety Research and Education Project at Teachers College, Columbia University, New York, it was discovered that those in the medical and transportation fields generally view 75 as the age in which mandatory re-testing should begin if the need for such testing is called for.¹²

Elderly drivers are seldom cited for speeding, tailgating or driving under the influence.¹³ It appears that they are much more likely than the general population, however, to be cited for rear-end collisions, failure to yield the right-of-way, improper turns, driving on the wrong side of a one-way street, and failure to use signals when changing lanes or turning and,

lastly, driving too slowly for prevailing conditions.

Statistics for the years 1975-79 show that advancing age was the chief contributing factor in over 25,000 accidents in Florida during that time. In fact it was the most common physical defect listed by the reporting officers as a contributing cause to the accident.¹⁴

Although the elderly account for fewer accidents per year than any other age group, they are still involved in over 50,000 accidents per year according to statistics gathered from 1982 to 1984. During that time span accidents involving the elderly accounted for over 20,000 injuries per year. On January 1, 1985 Florida began requiring full testing procedures for any driver who moved into Florida after previously being licensed in another state.¹⁵ Statistics gathered during 1985 from this program can be very useful because they show the effect that full testing has on each age group.

Some facts from the statistics are set out as follows: 1) The failure rate for all drivers is 19.8%. For drivers 70 and over the figure leaps to 37.3%, nearly twice the average. 2) 12.9% of those drivers who are 70 or over failed the road test demonstration of driving ability. The corresponding rate for all drivers is 3.9%. Thus, according to these statistics, it can be stated that drivers who are 70 or older are three times more likely to be unable to safely operate a motor vehicle than the general public. 3) 5.1% of all drivers who are 70 or older failed the vision examination. This failure rate is more than quadruple the failure rate for the general population (1.2%). Most of this disparity can probably be accounted for by the general decline in vision that accompanies advanced aging, as mentioned earlier in this report. 4) 2.3% of the drivers who are 70 or older failed the road sign portion of the written examination. The

failure rate for the general population was .70%. 5) 17.0% of the drivers who are 70 or older failed the portion of the written examination designed to test the applicant's knowledge of the rules of the road. The corresponding rate in the general population was 14.1%. It should be noted that both of these rates may be inflated due to the fact that the individuals being tested were previously licensed in another state which, more than likely, has differing rules than are in force in Florida.

It must be stressed that these statistics are not provided to prove that all elderly drivers are dangerous. Quite to the contrary, we believe that many elderly drivers are safe and, in fact, as safe as any other group. However, the statistics cannot be ignored. This is especially so considering the projected rate of growth for the elderly population in the state of California. Whatever the problem that exists now is sure to be magnified several times over by the continuing expansion of that portion of the population over 70.

She passes drivers' test, then whoops

POMONA (UPI) — After a 73-year-old woman narrowly passed her written driving test, she promptly crashed her car into the lobby of the Department of Motor Vehicles office.

Police said that after Jean Deignan passed the test, she backed her compact car out of one driveway and then as she started to drive away her foot slipped off the brake and on to the accelerator pedal.

Half of her Datsun B-210 ended up inside the motor vehicles office, leaving a 10-foot by 6-foot hole in the wall.

"The department is at this moment taking a

closer look at her driving record," said George Renz, manager of the motor vehicle office.

The accident occurred Thursday, shortly after Deignan scored a 74 on her driving test — 70 is the minimum passing score.

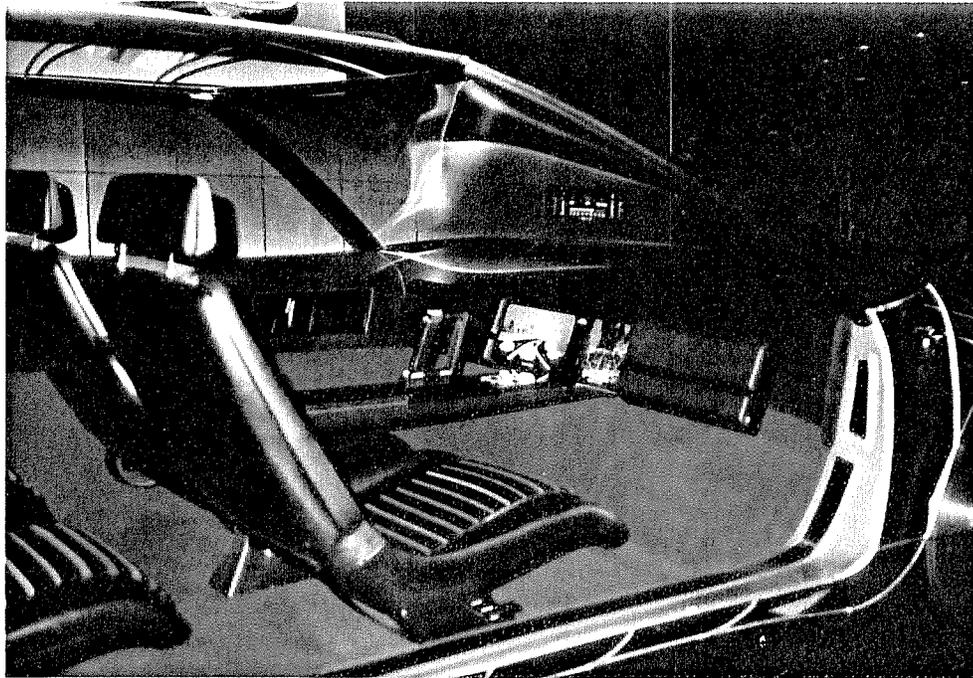
No one was injured when the car, going an estimated 20 mph, punched through the north wall of the building.

Although Deignan wasn't cited, her confidence apparently was shaken. "She told me she'll never drive again for the rest of her life," said a traffic officer at the scene.

2. The Automobile: As one would expect, there is an extensive and rich base of literature concerning the automobile, both its history, its current status and evolutionary trends. It is interesting to note that the last major innovation in automotive engineering occurred in the 1940s when the automatic transmission became standard equipment on some models of automobiles. Since then the car has basically remained unchanged. However, we currently stand on the threshold of the major technological breakthroughs in the design, equipment and materials used in the construction of the automobile.

Futurists, who are looking at the design of the automobile and projecting that out ten to fifteen years, image a car that is low slung and aerodynamically clean. (see figures 3 and 4 on the following page.) From the perspective of this study those futurists are, of course, wrong. I believe that they are wrong for two major reasons. First, senior citizens, who will make up a major portion of the consumer market, are less agile and more frail than the younger population. These senior car buyers will not be interested in purchasing a vehicle that is difficult to get in and out of.

The next major reason that I feel the aerodynamic car is not necessarily the styling of the future is the fact that a vehicle that is aerodynamically clean is efficient only at high speeds. The aerodynamic design of the vehicle is more a matter of styling than a performance function. A vehicle, whether it is an airplane, an automobile or any other transport, that is aerodynamically efficient is said to be clean. While it is true that a vehicle that is aerodynamically efficient or clean requires less power and consumes less energy than one that is dirty, that



HEADS UP
INSTRUMENT
DISPLAY

CRT WITH TOUCH
SENSITIVE SCREEN

HOLOGRAPHIC
ROAD SITUATION
PROJECTION

FIG. 3
GM'S FUTURE CAR, EPCOT CENTER
FLORIDA

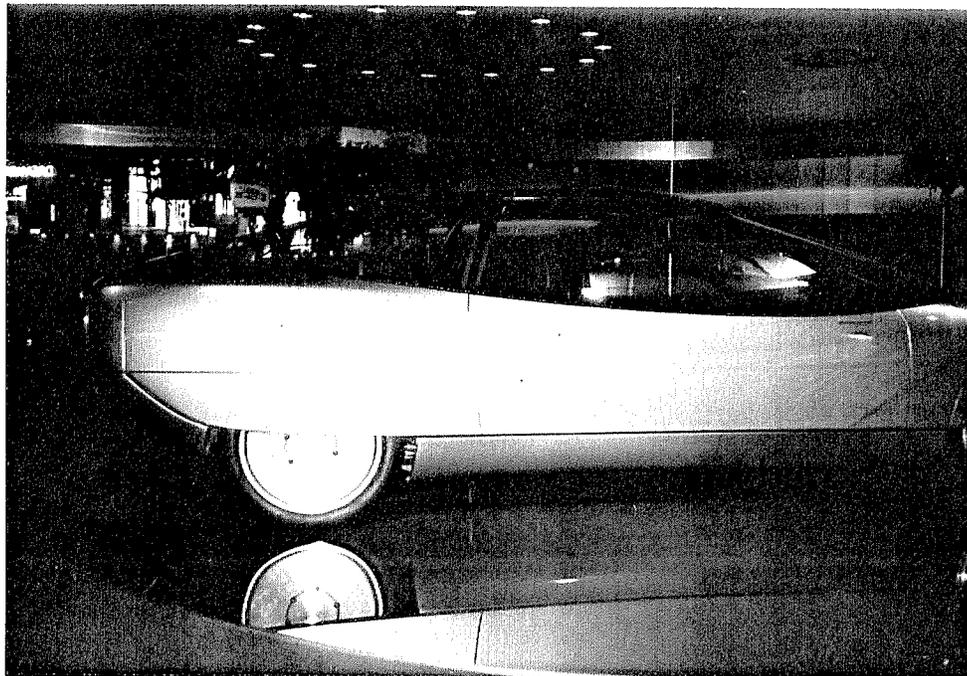


FIG. 4
GM'S FUTURE CAR, EPCOT CENTER FLORIDA
NOTE LOW SLUNG, AERODYNAMIC STYLING.

degree of efficiency is directly relative to velocity. The greater the velocity of the vehicle the more important the aerodynamic design. Obviously, if a vehicle is standing still it doesn't matter if it is shaped like a bullet or a box. Vehicles that are built to operate in the 50 to 75 mile an hour range will not experience as great a savings in energy as vehicles that are intended to operate in the 200 to 300 mile an hour range. Hence I believe that the primary character of the car as we know it today will not change as substantially as many futurists believe. I feel that the more traditional designs will have a greater acceptance. The mini-vans introduced by the major auto manufacturers in the mid-80s were commercially successful not because they were aerodynamically efficient or sleek in design, but because they satisfied the needs of the consumer and provided a balance of efficiency, attractive design, comfort and versatility.

The researcher feels, therefore, that the auto manufacturers will tend to fit the vehicle to the occupant, rather than making the occupant fit the vehicle. Nevertheless we stand on the threshold of major technological advances being incorporated into the vehicle.

a. Plastics: Manufacturers are increasingly using plastic to replace heavy metal parts in the manufacture of automobiles. We began to see this when plastic was used to replace front-end panels and bumpers on American automobiles in the early 80s. We are beginning to see plastic and plastic components being used in the structural engineering of vehicles. In fact, for the first time a non-metallic engine will be used to power a Formula One car at the Indianapolis 500 on Memorial Day weekend 1986. The engine is designed at Polimotor Research,

at Fair Lawn, New Jersey. The company designed a two foot long, two foot high and one foot wide engine. The engine is a four-cylinder, double overhead cam, two litre power plant. It develops 318 horsepower at 9500 rpm and weighs only 168 pounds. A conventional engine might weigh in at 350 pounds. This engine is currently powering a Lola T-616 GTP formula racing car.

The Polimotor engine is light. Over 50% of it is made of plastic. The valve stems, pistons, tappets, connecting rods, and timing gears are made of Torlon. Torlon is a space age, heat resistant plastic created by Armoco Chemicals Corporation.¹⁸ Many of the plastics and composite component parts that were designed for use in the aircraft industry are being incorporated into the construction of new prototype and proof-of-concept automobiles.

The concern for fuel efficiency and engine design will continue throughout the latter part of the 80s and early part of the 90s. Auto manufacturers will constantly look for ways to reduce the curb weights of vehicles to make them more efficient as well as fine-tuning the engine systems. One innovation that we might expect to see in the engine system is going to four valves per cylinder instead of the usual two. This will enhance combustion and high speed performance. These engines will no longer have cam shafts or timing gears. The valves will be opened and closed by small electromagnets that cycle on and off as the power demands of the vehicle are monitored by the computerized fuel control system. Much of the research and development work on engine design is being accomplished with grants from the major automobile manufacturers to race car enthusiasts. Many of those concepts and designs will trickle down

into the assembly line vehicle of the future.

b. Steering Systems: In 1939 Mercedes Benz of Germany experimented with a vehicle that incorporated four wheel steering in its design. They were unsuccessful in controlling the vehicle through the various ranges of speeds used in normal operation. There is some indication that the Rio Truck Company experimented with four wheel steering as early as 1918. However, we have not been able to document that in this research. Nevertheless Mazda, in its proof-of-concept car of 1983, the MX-2, produced a vehicle with four wheel steering. In 1986 the Mazda MX-3 is nearly ready to be introduced to the consumer market.¹⁹

Four wheel steering, augmented by computer control, offers some unique advantages in maneuvering the vehicle in and out of traffic. In order to operate efficiently four wheel steering would work like this. First, from 0 to 5 mph both the front wheels and the rear wheels would turn in concert, working together. This would make it easy to pull in and out of parallel parking spaces and to maneuver in driveways and tight parking lots. From 5 to 25 mph the rear wheels would steer opposite from the front wheels. This would decrease the turning radius of the car substantially and make it very maneuverable in tight areas. Above 25 mph the rear wheels would again steer with the front wheels providing stable turning and cornering at highway speeds and allowing greater maneuverability in changing lanes.

The Mazda MX-3 will also incorporate a variable steering ratio mechanism that will increase driver feel and efficiency at varying speeds. A speed sensing steering gear ratio will provide a full lock-to-lock right and left turn with only 60 degrees of steering wheel deflection at lower

speeds. As speeds increase the ratio of steering wheel movement will increase to ensure stable understeering for highway speeds.

c. Instrumentation and Dashboard Design: The dashboards and instrument displays of vehicles have basically remained unchanged for several years. They contain the speedometer, gas gauge, light switches and various other knobs and buttons that are used to control different accessories in the vehicle. These systems are undergoing some functional and cosmetic changes that will be startling. Microprocessor-driven color instrument panels are available on many new vehicles, and they are already standard features on most Japanese cars. The next step is to incorporate a system used in the aircraft industry for years, the heads up display system or H.U.D. Heads up display is a system which projects the instrument panel on the lower portion of the windshield in an opaque, see-through display (see figure 3). The main advantage to heads up display is the information about vehicle speeds and various systems' conditions can be viewed without taking one's eyes off the roadway. This will certainly be a safety feature in any vehicle because the time required to refocus one's eyes from the roadway to the instrument panel and back to the roadway will be reduced by nearly a half.

Another trend that we are beginning to see in the use of instrumentation and switching in vehicles is the use of L.E.D. or liquid crystal displays which are bright and easily recognizable signals regarding the condition of the vehicle. Ford Motor Company offers both microprocessor-driven instrumentation and L.E.D. displays on its 1986 Taurus as optional equipment.

Vehicle controls and button systems are also undergoing some remarkable changes. In 1986 most auto manufacturers are offering a touch system for button and switch control. Buttons and switches that have a depression that one's finger fits into operate a control either off or down. If the button or switch has a raised or domed portion then that switch, button or knob means up or on. Through the use of this system the operator of the vehicle can tell by feel whether he is switching something on or off or up or down. Knobs and buttons are increasing in size making it easier for those with less nimble fingers to operate those controls. The steering wheel itself is becoming smaller, more heavily padded making it easier to grip and hold. More of the vehicle controls are also being incorporated into the steering wheel system. For example cruise control can be switched on and off without having to remove one's hands from the steering wheel. I think that we will see more controls incorporated into the steering system and operating from the switch to the mechanism through the use of fiber optics.

Multi-purpose dashboard computer screens are another way to consolidate the control systems. This year Buick will introduce a touch sensitive screen. By simply putting a finger to the screen and calling up different menus, drivers can control the radio, interior temperatures and trip computer. Such a screen would also incorporate a road map system for the driver's particular city or state.²⁰ This computer display could also incorporate satellite navigation systems. However, it is not likely that computerized navigation, through the use of a satellite system, will be available this century. Another navigation system that is trickling down from the aviation industry is inertial navigation. In a design by

Daimler-Benz a driver refers to a specially designed map before starting his vehicle and beginning his trip. The computer figures out the coordinates of the location of the vehicle at the beginning of the trip and at the destination. The driver then follows the computer-guided map to his intended destination. The computer-guided map will be effective no matter how many side trips the driver takes. His ultimate destination will always be displayed and the fastest route to that destination indicated on the map. Bosch of Europe is designing a similar instrumentation system which should be available in the fall of 1985 or spring of 1986.

One major innovation that is already beginning to be seen in the auto industry is anti-skid braking systems. The anti-skid braking system has a potential for improving highway safety. Anti-skid brakes are already on sale on some of the more expensive automobiles. They apparently are the hottest thing in safety items since the implementation of the seat belt. When the operator of the car slams on his brakes and the tire begins to skid on the roadway, the anti-skid device releases the brake pressure enough to prevent the tire from locking and preventing tire melt or loss of vehicle control. The anti-skid concept is simple. To each wheel of the car the manufacturer affixes a sensor that monitors how fast the wheel is turning. That sensor reports the information to a central computer system. The system anticipates the skid by determining when the pressure from the brake is slowing the wheel abruptly enough to provoke a lock-up. It momentarily releases pressure on the brake on that wheel and then administers staccato pressure, much as an experienced race car driver might pump his brakes to increase the effectiveness.²¹

There is a down side, or disadvantage, to an anti-skid system on a particular vehicle, however. It seems that if the vehicle one is driving is equipped with an anti-skid device he will be able to stop much faster than a vehicle which might be following him and not equipped with an anti-skid system. The main advantage to anti-skid systems is that it allows the driver maximum braking efficiency without losing control of the vehicle. Another major and future innovation in vehicles will be electronic suspension systems. Lotus Cars, Ltd. is currently producing a research and development automobile which incorporates hydraulic pistons instead of standard shock absorbers. Two computers sense and adjust, on the road, the stiffness to cancel out cornering forces in the vehicle. According to A. C. Rudd, a Lotus corporate research director, one computer analyzes road information. If the front of the tire hits a brick then the computer will tell the piston on that particular tire to lift the wheel out of the way. This can be accomplished in 1/30 of a second, about three times faster than a standard road spring would react. There are no switches on the dashboard for the driver to play with, but the suspension system comes pre-programmed. It would keep the car level throughout turns rather than letting it heel over as it would in a standard suspension car. This increases the car's stability and efficiency and safety at high speeds. The system is approximately 25% better Lotus engineers claim.²² Other innovations that will make it easier and safer to operate automobiles will be run-flat road tires. The run-flat tire is similar to ones currently being used on armored limousines. This tire has a hard rubber core surrounded by air pressure, encapsulated by the outer surface of the tire. Should a blow-out occur a

light on the instrument panel will come on warning the driver that he has had a blow-out or lost air pressure in one of the tires. The driver may not otherwise be able to feel that one of his run-flat tires needs attention. The driver will be able to operate on this tire for another 50 to 75 miles, depending on its design, before that tire must be replaced. Use of the run-flat tire will eliminate the need for a spare tire in the vehicle which increases the amount of baggage space and, again, reduces the curb weight of the car.

The use of electronics and microprocessors in automobile design is in its infancy. It appears that the only limits may be the imagination of the automobile manufacturers and the pocketbook of the consumer.

FEATURE	PRICE	YEAR AVAILABLE
Touch computer screen for system control	\$300	1985
Four-wheel steering	\$500	1988
Electronic suspension systems	\$2,000	1988
Electronic road maps	\$500-\$1,000	1988
Run-flat tires (four)	\$300	1989
Infrared key lock and control system	\$150	1990

FUTURES SEARCH
INVESTIGATIVE INTERVIEWS



The state of Florida has long been recognized as a retirement center for those individuals who lived and worked most of their lives on the eastern seaboard. The eastern elderly are choosing to live in Florida in ever increasing numbers. Hence, Florida today has the ratio of elderly that the rest of the nation will have in 30 years. One in every six Florida residents is retired. The largest single source of personal reported

income in Florida is Social Security. "Today's elderly are pioneers in that they are the first generation of older Americans who can afford to live where they choose."²³

Yet, Florida has fewer nursing home beds per capita than any other state. The elderly predominantly live in small apartments or condominiums. In order to shop, bank or visit their doctors they must rely on public transportation--or drive. In 1983 ABC's 20/20 did a segment on the increase in Florida's accident rate created by elderly drivers. The difficulties in obtaining a driver's license because of failing eyesight in elderly people was depicted in this summer's movie "Cocoon." Florida was the setting.

When the researcher began to focus on Florida as an area which may now be experiencing California's future, as it relates to this area, he became aware of a legislative effort by Senator Jack Gordon of Miami Beach. Senator Gordon has introduced Senate Bill 118 which would require persons over 70 to have a full driving test every 24 months. Because of that information, and phone calls made to various traffic commanders and planners throughout Florida, the decision was made to travel to Florida and interview those individuals who may already be gaining experience in the issue of elderly drivers.

On February 11, 1986 the researcher interviewed Senator Jack Gordon in his offices in Miami Beach, Florida. Senator Gordon said that the issue of the elderly driver first came to light about four years ago when a woman in her late 70s lost control of her vehicle in Miami and killed four people who were waiting for a bus on a sidewalk bench. The investigation of that accident revealed that the woman had killed two

other people the year before when she had lost control of her vehicle approximately three miles from the site of the most recent accident. Because of that accident attention was focused on the issue of elderly drivers in Florida. Since Florida's growth depends upon new residents arriving from out of state, legislation was passed to require all new residents of Florida to take a complete driving examination which included a written test, a sign recognition test and a road test in the vehicle. That law went into effect on January 1, 1985. The experience of the local driver examination offices began to reflect a serious traffic safety problem emerging from these elderly drivers moving into the state. Senator Gordon said that a full 37% of those drivers over 70 who were tested failed the examination. The elderly over 70 failed the vision portion of the test at three times the rate of the rest of the population.

1985 testing of new Florida drivers		
	All drivers	Drivers 70 and over
Overall failure rate	20%	37%
Road test failure rate	3%	12%
Vision test failure rate	1%	5%
Road sign failure rate	0.7%	2%

Source: Florida Senate Transportation Committee.

FIG. 5

As the number of elderly in Florida increased as a percentage of their population it appeared as though traffic safety was declining. Therefore Senator Gordon, as the chairman of the Senate Committee on Transportation, decided to introduce legislation which would improve the

traffic safety picture in the state of Florida. Basically Senate Bill 118 requires those persons over 70 years of age to take a complete driving test every 24 months. This legislation recognizes that individuals of advanced age are more likely to suffer those physical and mental frailties which would prevent them from safely operating a motor vehicle. As one might expect this legislative effort was not welcomed by senior citizen interest groups and organizations.

This resistance to his proposed legislation is not universal. There are some chapters of the American Association of Retired Persons in Florida who have come out supporting Senator Gordon's bill. Likewise some county judges have offered support for Senate Bill 118. Judge Steven Shutter is backing Senator Gordon's proposed legislation. Judge Shutter, who deals with more elderly motorists than any other judge in Boward County, said, "If they pass the test, no loss. If they don't pass, they shouldn't be driving." Judge Shutter's traffic court docket at Boward County's western regional courthouse includes citations from Tamarac, Sun Rise, Plantation, Lauder Hill and Lauderdale Lakes. "What we're talking about is not attitude. It's physical disabilities," Shutter said. "People lose their facilities. My reaction time isn't as good at 41 as it was at 21. The great majority of elderly drivers are good drivers. I had a fellow 90 years old the other day who was as sharp as a tack, but others lose their faculties. I take licenses away in the court room--about four a day--because they can't see me, or hear me or they were in accidents," he said. Another judge, however, opposes that legislation. Judge June L. Johnson said, "I wouldn't single out people over a certain age." Judge Johnson presides at the north regional courthouse in Pompano Beach.

"We all have to be re-tested every six years. I see thousands of people and some much younger should be re-tested," said Judge Johnson. Obviously, in Florida there is a diversity of opinion as to the merits of Senator Gordon's proposed legislation. Senate Bill 118 is included as Exhibit A in its entirety. The Florida Department of Highway Safety and Motor Vehicles issued a position paper on Senator Gordon's legislation on January 31, 1986. That position paper is included in this report as Exhibit B. In this document the State Department of Highway Safety and Motor Vehicles refutes many of the objections to Senator Gordon's legislation.

-Contentions that the over-70 group is not the problem; since younger drivers have a higher accident rate involvement, the National Highway Traffic Safety Administration reports that although older drivers are involved in fewer accidents, their accident rate per miles actually driven is the highest of any group over 25 years of age. This would indicate that the safety record of older drivers is the result of less driving rather than safer driving. Moreover, there is evidence that the higher rate of accidents among older drivers is related to declining physical and perceptual abilities, while that of younger drivers is related to attitude: more aggressive, risk taking, influence by peers, less regard for the safety of others, etc. While more rigorous screening would be an effective means of dealing with the factors behind the older driver's accident rate, it would not be effective for younger drivers.

Some will feel that additional testing and more frequent renewals will present undue hardships to the elderly. We suggest, however, that personal hardships must be weighed against the benefits to society involved in testing groups with a demonstrated high-risk factor.

Senator Gordon, in the interview, went on to say that he was aware that his proposed legislation would restrict the elderly in their mobility because of the deficiency of mass transit in the state of Florida. The lack of adequate transportation has been a concern of his for many

years. If his bill becomes law and has an adverse impact on the elderly, future legislatures will have to address the problem of mass transit more seriously than in the past. Senator Gordon feels that if you consider what it costs to own and operate a motor vehicle (estimates range from \$3000 to \$4000 annually) then perhaps it would be cheaper and more convenient for elderly people to take a taxi. This, of course, assumes that taxi service is available in the communities in which the elderly live. "My bill would be discriminatory if it banned all people 70 and older from driving, but it does not. The bill would only require vision and driving tests for people in an age group whose driving abilities are known to decline rapidly. It's a matter of safety for the elderly as well as everyone else."

Sam Stephens, 72, of Titusville, Florida refutes Senator Gordon's opinions in a letter to the Orlando Sentinel, December 16, 1985. "If age brings physical limitations that affect our driving, we compensate for it by driving more carefully. When everything else is said and done, elderly drivers are more likely to arrive alive. Autos are a lifeline for many older folks like myself. In addition there is a handicapped person in my family so my automobile is essential. I drive in a manner to preserve this most cherished privilege. I would bet just about everyone in Florida's 1.5 million elderly drivers does the same."

Sgt. Garth Hamman of the Miami Beach Police Department had a different opinion, however, that he expressed in an interview with me. Sgt. Hamman said that Florida requires re-testing of drivers every six years. This isn't adequate to test a person in their later years, indicating that many of the accidents that they see in Miami Beach

involve right-of-way violations, lane changes, confusion, etc., and felt that re-licensing people over 70 every two years would have a significant impact on their accident rates. Another twist was thrown into the concern for elderly in the traffic safety picture by Sgt. Hamman. He reported that Miami Beach has an inordinate number of pedestrian fatalities every year. It seems that the older person, rather than expend the energy to walk to the end of the block, cross in a crosswalk in a light-controlled intersection, will cross a street in the middle of the block. To observe this the researcher spent two hours parked on Collins Road in Miami Beach. This is the central section of Miami Beach bordered on both sides of the street by shops and large residential hotels. The population in this area is predominantly elderly to say the least. It was observed that older persons would come out of a store, approach the four-lane road, hold up a hand, a purse, a cane or an umbrella as a sign that they were crossing the street and walk directly out into the four-lane without regard for traffic.

Sgt. Hamman reports that about four years ago the Miami Beach Police Department began a jay-walking enforcement program to see if they could reduce the number of fatal pedestrian accidents. However, organized groups of seniors protested en masse to the city and to the police department about the jay-walking enforcement program. In short order, due to the political pressure put on the city by these senior active groups, the jay-walking enforcement program was abandoned.

Pinalles County is situated on the western seaboard of Florida. The area in the St. Petersburg, Tampa area, located in the heart of Pinalles County offers a combination of mild climate, seaside living and

inexpensive housing that has attracted many retirees. The area is densely populated with elderly citizens. However, Lt. Evans reported that the St. Petersburg Police Department did not have the reporting system which allowed them to capture the age and impairment of the driver charged with responsibility for an accident. Because of my inquiry and this investigation the St. Petersburg Police Department is currently re-writing its traffic reporting program to allow them to obtain and use that information. Hence this research has already had an impact on one agency far removed from California.

Lt. Evans noted that in their accident statistics they seem to have a higher accident rate on Thursdays and Sundays. While there is no data to substantiate the hypothesis, it is possible that the accident rate increases on these days in the St. Petersburg area because local supermarkets and dry goods stores advertise coupon sales on those days. Evidently more people are on the road at different hours taking advantage of these sales. In the downtown area of St. Petersburg there had been an observed high rate of pedestrian accidents involving the elderly as victims. However, with the redevelopment of the downtown area and the installation of diagonal parking, the accident rate regarding pedestrians has decreased substantially. Lt. Evans speculates that the reason for this is that diagonal parking removes one lane of traffic in each direction and slows the average speed of the traffic in the area. Also persons who elect to cross the road in the middle of the street have to cross two lanes instead of four. There has been a marked decrease in the amount of traffic in the downtown area because of the installation of the diagonal parking. This has cut out the traffic that

was using the downtown streets to go from one end of the town to the other. That traffic is now using the four lanes that run adjacent to the old downtown area. This is an interesting phenomenon and should be noted for planners who are looking at redeveloping their own downtown districts.

Next, the researcher visited the St. Petersburg branch of the Florida Department of Highway Safety and Motor Vehicles licensing office. There I contacted Miss Linda Lee Marvin. Miss Marvin is the manager of that branch of the licensing office. She has been employed by the Department of Highway Safety and Motor Vehicles for the last 14 years. As the examining supervisor of the Tyrone Gardens office in St. Petersburg, Miss Marvin is extremely familiar with the situation of elderly drivers taking their driver's license examinations. Miss Marvin reported that on January 1, 1985 a law requiring new Florida residents from out of state to take and pass a complete driver's examination, including a road test, almost doubled the work load of her office. As an example:

<u>M O N T H</u>	<u>R O A D T E S T</u>
January, 1984	379
January, 1985	524
August, 1984	426
August, 1985	724

Obviously from these figures we can see that the licensing office's work load has increased markedly by the passage of this law. Miss Marvin went on to say that if Senator Gordon's bill, SB 118, were to pass she would have to hire several more license examiners for her office. Under her department's rules if a driver's license applicant fails the examination five times he will be unable to get a license for the following year. Because of this Miss Marvin administers the fifth driver's exam. She related the story of a 95 year old man who had

failed four road tests. "When he flunked the first one we told him to enroll in a driving school. He said he didn't need to, he'd been driving for 60 to 70 years." Nevertheless each time he took the test and failed it he went to a driving school and improved substantially each time. Miss Marvin took him out on the fifth road test. He drove well and passed the examination, receiving his license for another six years. She wondered about this. The next opportunity the department would have to look at this gentleman's driving ability would be when he was 101 years old.

"There are some down sides to performing the duties of a driver's license examiner," Miss Marvin related. "It's difficult emotionally to fail someone who you know depends on their automobile to get around and to go to the store." Yet new licenses are valid for six years and there is still no road test necessary for Florida renewals unless the people who issue the license decide that the individual needs one. Marvin and her examiners have grown wise to the signs of probable failure. "If they don't know the make and year of the car they're driving, if they can't remember where they're parked, if they try to put the key into the door lock of the wrong car, you know you're in trouble. If someone does badly on the vision test or comes in with a walker, or just looks as if they ought to be tested," Marvin said, "we can order a road test; and the road test can be a hair raising experience. Sometimes you think, he's not going to do that, you're sure he's not going to do that, nobody would do that, and then he does it." Marvin says, "I've scooted over and stomped on the brakes more than once. I've gotten half-way through the road test and then had to drive the car back myself." While the examiners will tell you about 95 year olds who

drive around the streets with the deftness of a youth, the truth is that in Pinalles County driving suspensions often go hand in hand with aging. Margery Winters, a pleasant young woman who has been giving driving tests for the state for seven years says, "You ask me if it ever got to me." She says she tries to keep a professional and sympathetic head. She stopped being sad when an elderly man, who had been denied a Florida license, got his old Ohio license renewed and then ran over three young girls, thinking they were garbage bags on the sidewalk, she said. "But it took a few years to get to that," she admits. "I still feel terrible when I flunk someone." She realizes that she's making the road safer for other drivers and pedestrians but that doesn't make it any easier.

One woman, whose license had been suspended in court, wobbled feebly into the office with her cane to take the written exam. She was weak and dizzy, the examiner said, having walked to the office from her home nearby. She had to walk home licenseless. She misidentified 13 traffic signs. Miss Winters confides that as the old lady walked out of the door, "that got to me."

One thing was becoming clear to the researcher by this time. That in a society that is built around the use of private automobiles something has to replace that ease of transportation when you take the privilege of driving away from ordinary citizens.

The following three pages contain samples of forms used by the Department of Highway Safety and Motor Vehicles to document the need for re-examination and revocation/suspension of drivers licenses in Florida.

GEORGE FIRESTONE
Secretary of State
JIM SMITH
Attorney General
GERALD LEWIS
Comptroller

State of Florida

BOB GRAHAM
Governor

BILL GUNTER
Treasurer
DOYLE CONNER
Commissioner of Agriculture
RALPH D. TURLINGTON
Commissioner of Education

Department of Highway Safety and Motor Vehicles

Neil Kirkman Building

LEONARD R. MELLON
Executive Director

Tallahassee, 32301

DIVISIONS

- FLORIDA HIGHWAY PATROL
Colonel Bobby R. Burkett, Director
- DRIVER LICENSES
C. W. Keith, Director
- MOTOR VEHICLES
Charles J. Brantley, Director
- ADMINISTRATIVE SERVICES
W. R. Kaufman, Director

Under the authority of Florida Law 322.221, Florida Statute, you are hereby required to report to the Florida Driver's License Examining Station at _____ on or before _____ between the hours of _____ A.M. and _____ P.M. and take the following examination(s) indicated below:

- Written Test (Road Rules and Road Signs)
- Vision Test
- Driving Test

This examination is necessary in order to eliminate reasonable doubt as to your driving ability being questionable. There will be NO FEE for this examination. Failure to report or failure to pass the required examination(s) will result in the suspension of your driving privilege.


C. W. KEITH, Director
Division of Driver Licenses

I, _____, hereby voluntarily waive
(Applicant's Signature)
the normal five (5) day waiting time required by Florida Statute
322.221 and agree to take driving test this date _____.
(Date)

GEORGE FIRESTONE
Secretary of State
JIM SMITH
Attorney General
GERALD LEWIS
Comptroller

State of Florida

BOB GRAHAM
Governor

LEONARD R. MEELON
Executive Director

BILL GUNTER
Treasurer
DOYLE CONNER
Commissioner of Agriculture
RALPH D. TURLINGTON
Commissioner of Education

Department of Highway Safety and Motor Vehicles

Neil Kirkman Building

Tallahassee, 32301

DIVISIONS

- FLORIDA HIGHWAY PATROL
- DRIVER LICENSES
- MOTOR VEHICLES
- ADMINISTRATIVE SERVICES

Under the provisions of Florida Statute 322.221, the undersigned examiner or examiners have serious doubt as to the ability of the licensee, _____, to operate a vehicle safely in view of his physical appearance or actions as indicated below.
(CHECK ONE OR MORE)

1. Obvious lack of comprehension (mental).
2. Full or partial loss of use of one or more limbs (license not appropriately restricted).
3. Obvious shakiness or stiffness.
4. Obvious deficiency in equilibrium or balance.
5. Insufficient strength to operate a vehicle safely.
6. Confined to wheelchair, walker, etc. (license not appropriately restricted).
7. OTHER _____

In view of the above, the licensee is hereby required to submit to a driving examination.

(SIGNED) _____

(APPROVED) _____
Examiner Supervisor or
Acting Examiner Supervisor

STATE OF FLORIDA
DEPARTMENT OF HIGHWAY SAFETY AND MOTOR VEHICLES
DIVISION OF DRIVER LICENSES
TALLAHASSEE
ORDER OF LICENSE REVOCATION OR SUSPENSION

TO: [] []
[] []

Driv. Lic. No. _____
State _____

This is to notify you that your privilege to operate a motor vehicle in the State of Florida has been:

- REVOKED UNTIL YOU MEET MINIMUM VISION REQUIREMENTS.
- SUSPENDED UNTIL YOU PASS THE EXAMINATION OR RE-EXAMINATION.
- SUSPENDED FOR ONE YEAR.

Reason for above action is checked below:

- FAILURE TO MEET MINIMUM VISION REQUIREMENTS (F.S. 322.221).
- FAILURE TO REPORT FOR EXAMINATION OR RE-EXAMINATION (F.S. 322.221).
- FAILURE TO PASS EXAMINATION OR RE-EXAMINATION (F.S. 322.221).
- INCAPABLE OF OPERATING A MOTOR VEHICLE (F.S. 322.27 (1) (c))
- PERMITTING UNLAWFUL USE OF DRIVER LICENSE (F.S. 322.27 (1) (d)).
- UNLAWFUL USE OF LICENSE BY DISPLAYING DRIVER LICENSE OF ANOTHER (F.S. 322.27 (1) (d)).
- HAS KNOWINGLY BEEN A PARTY TO THE OBTAINING OF A LICENSE BY FRAUD OR MISREPRESENTATION (F.S. 322.27 (1) (d)).

THIS REVOCATION OR SUSPENSION ACTION BECOMES EFFECTIVE: Month _____ Day _____ Year _____

IF PERSON HAS NO LICENSE, FILL IN THE FOLLOWING INFORMATION:

Statement regarding license _____

Date of Birth _____ Sex _____ Weight _____ Color Hair _____
Color Eyes _____ Height _____ Occupation _____ Race _____

SIGNATURE OF PERSON SERVED

SERVED BY: _____ ID # _____ STATION # _____
DEPARTMENT REPRESENTATIVE

This Order has been filed in the official records of the Division of Driver Licenses on the day and year above written.

Alan Cochrane
ALAN COCHRANE, CHIEF-BUREAU OF RECORDS

C.W. Keith
C.W. KEITH, DIRECTOR - DIVISION OF DRIVER LICENSES

Upon receipt of this order, Florida Law requires that you surrender to the Department any and/or all driver licenses issued to you. Driving while license is revoked or suspended is punishable by jail sentence and additional three months suspension

DISTRIBUTION: WHITE - APPLICANT, SECOND COPY - FIELD OFFICE FILE
THIRD AND FOURTH COPIES - BUREAU OF DRIVER IMPROVEMENT GHQ.

LESSONS TO BE LEARNED FROM GENERAL AVIATION: A significant number of our older citizens are mentally clear, physically healthy and are living normal lives. Some are aerobatic and/or racing pilots. Some senior citizens are presidents of corporations and one is President of the United States. According to figures reported by the Federal Aviation Administration there are 43,444 licensed pilots in the United States over the age of 60. Five of those are in the 90-year-plus bracket.

Figure 1

The number of active pilots in the United States who are over age 60 is shown by age bracket and sex.

Age	Male	Female
60-64	27,564	778
65-69	10,507	265
70-74	3,256	82
75-79	761	22
80-84	162	5
85 and over*	42	0
Totals:	42,292	1,152

Grand total: 43,444

**Five of these are in the 90-year-plus bracket.*

FAA MEDICAL STATISTICAL HANDBOOK FOR 1984

FIG. 6

Studies by the Federal Aviation Administration show that pilots over 60 years old have no greater accident rate per thousand pilots than any other group. In fact the accident rate for pilots who have an airline transport rating or a commercial pilot's certificate is substantially less than those pilots under 60 years of age.²⁴

Figure 2

PILOT AGE AND ACCIDENTS: 1981

General Aviation Operations

Pilots in Command with Airline Transport or Commercial Pilot Certificate

Age	Active Pilots 1981	Number Accidents Expected 1981	Number Accidents Observed 1981	Accidents Per 1,000 1981
16-19	330	2	8	[REDACTED]
20-24	12,565	92	160	[REDACTED]
25-29	27,735	189	258	[REDACTED]
30-34	36,770	270	355	[REDACTED]
35-39	41,735	306	272	[REDACTED]
40-44	34,532	253	207	[REDACTED]
45-49	29,556	217	166	[REDACTED]
50-54	20,295	149	131	[REDACTED]
55-59	18,609	137	109	[REDACTED]
60+	18,764	138	87	[REDACTED]
Totals:	238,891	1,753	1,753	

SOURCE: NTSB AND FAA STATISTICAL HANDBOOK FOR CY 1981

FIG. 7

There are no statistics to show how these accident statistics justify to the number of hours flown by each individual age group.

There may be several reasons why senior pilots have such a good safety record as compared to older automobile operators. First, pilots as a group would tend to have a higher sense of responsibility for public safety and be less likely to operate an aircraft if they were physically disabled. Secondly, Federal air regulations require that a licensed pilot receive a physical examination every 24 months. This examination includes a vision test, a hearing test, nerve function test and general overall health examination. Moreover, Federal air regulations require licensed pilots to have a biannual flight review. That flight review must be administered by an F.A.A. approved flight instructor. These factors would work in concert to produce a group of pilots who have received professional training and

have been reviewed by a doctor. How safe would our highways be if all drivers were required to have a physical examination by a licensed physician and a driving test every 24 months by a certified driving examiner?

ANALYSIS OF LICENSE RE-EXAMINATION IN OTHER JURISDICTIONS: Twenty states require no mandatory examination of any kind for the renewal of a driver's license. However, in most of these jurisdictions an examination may be given for good cause. The states which require no mandatory examination of any kind upon renewal are:

ALABAMA	MAINE	PENNSYLVANIA
ARIZONA	MASSACHUSETTS	RHODE ISLAND
ARKANSAS	MISSISSIPPI	TENNESSEE
CALIFORNIA	NORTH CAROLINA	VERMONT
CONNECTICUT	OHIO	WASHINGTON
HAWAII	OKLAHOMA	WEST VIRGINIA
KENTUCKY	OREGON	

States which require both a vision exam and a written test upon renewal are:

KANSAS
MICHIGAN
UTAH
WYOMING

Several states have a special testing procedure for unsafe drivers:

COLORADO	MICHIGAN
HAWAII	NEBRASKA
ILLINOIS	SOUTH CAROLINA
INDIANA	VIRGINIA

The jurisdictions with some special provisions for elderly drivers are California,²⁵ which prohibits renewal by mail for persons over 70 years of age and:

DISTRICT OF COLUMBIA	LOUISIANA
HAWAII	MAINE
ILLINOIS	NEW HAMPSHIRE
INDIANA	NEW MEXICO
IOWA	RHODE ISLAND

Many jurisdictions require only a vision/hearing test upon renewal:

ALASKA	LOUISIANA	NEW MEXICO
COLORADO	MARYLAND	NEW YORK
DELAWARE	MINNESOTA	NORTH DAKOTA
DISTRICT OF COLUMBIA	MISSOURI	SOUTH CAROLINA
GEORGIA	MONTANA	SOUTH DAKOTA
IDAHO	NEBRASKA	TEXAS
ILLINOIS	NEVADA	VIRGINIA
INDIANA	NEW HAMPSHIRE	WISCONSIN
IOWA	NEW JERSEY	

Some jurisdictions have special testing procedures and regulations for elderly drivers. Those regulations and laws range from merely requiring the elderly to renew their licenses more frequently than the general population, to requiring the elderly to take a full re-examination, including a road test, upon renewal. A brief synopsis of these procedures is set forth as follows:²⁶

DISTRICT OF COLUMBIA: The District of Columbia renews driver's licenses every four years. Upon renewal every applicant is required to pass a vision exam. Those drivers between the ages of 70 and 74 must also present a doctor's certificate stating that they are physically and mentally competent to drive. In addition to

presenting the doctor's certificate, those drivers who are 75 and older must submit to a full re-examination which includes a vision test, written test and a driving test.²⁷

HAWAII: Residents of Hawaii are required to renew their driver's licenses every four years. However, drivers who are 24 or younger, or drivers who are 65 or older, must renew their driver's license every two years. The exam is the same one given for the general renewals, unless the examiner has reason to suspect that the applicant is physically or mentally unfit to operate a motor vehicle, in which case a full examination may be given at the examiner's option.²⁸

ILLINOIS: The renewal period is the same for all drivers regardless of age, four years. There are, however, several different testing procedures for the elderly. Most drivers need only take an eye exam on renewal, but those drivers who are 69 or older must also take a driving road test.²⁹

INDIANA: Driver's licenses expire every four years and to be able to renew the driver's license the applicant need only pay the application fee and pass a vision exam. Drivers who are 75 or older must renew their licenses every three years. They must also pass a road driving test in addition to the vision exam which is required of all other applicants.³⁰

IOWA: Driver's licenses are renewable every four years. However, drivers who are either 17 or younger, or 71 or older, must renew their licenses every two years. The examination is the same as the ones given for the general population renewals, a vision test, unless the examiner has reason to suspect that the applicant is physically or mentally unqualified to operate a motor vehicle, in which

case other tests may be given or medical information required.³¹

LOUISIANA: Driver's licenses are renewable every four years. Drivers who are 65 or older must renew their driver's licenses every two years. All examinations upon renewal are at the examiner's discretion, although there is a provision allowing for re-examination for good cause.³²

MAINE: The renewal period for driver's licenses in Maine is four years. Drivers who are 65 or older must renew their licenses every two years. Every driver who is 40 or older must take a vision exam every third renewal. Those who are 65 or older must take the vision exam on each renewal.³³

NEW HAMPSHIRE: Driver's licenses are renewable every four years and a vision exam is required upon renewal. Additionally, drivers who are 75 or older must also take a road test.³⁴

NEW MEXICO: Drivers are required to renew their licenses every four years. Those drivers who are 75 years or older are required to renew their license every year. There are no mandatory examinations for anyone, but a road test may be required whenever the examiner has reason to suspect that the applicant is physically or mentally unqualified to operate a vehicle.³⁵

RHODE ISLAND: Drivers in Rhode Island must renew their licenses every five years. However, those drivers who are 70 and older must renew their licenses every two years. There is no mandatory examination for general renewal, but those drivers who are 70 years and older are required to take a vision test upon each renewal.³⁶

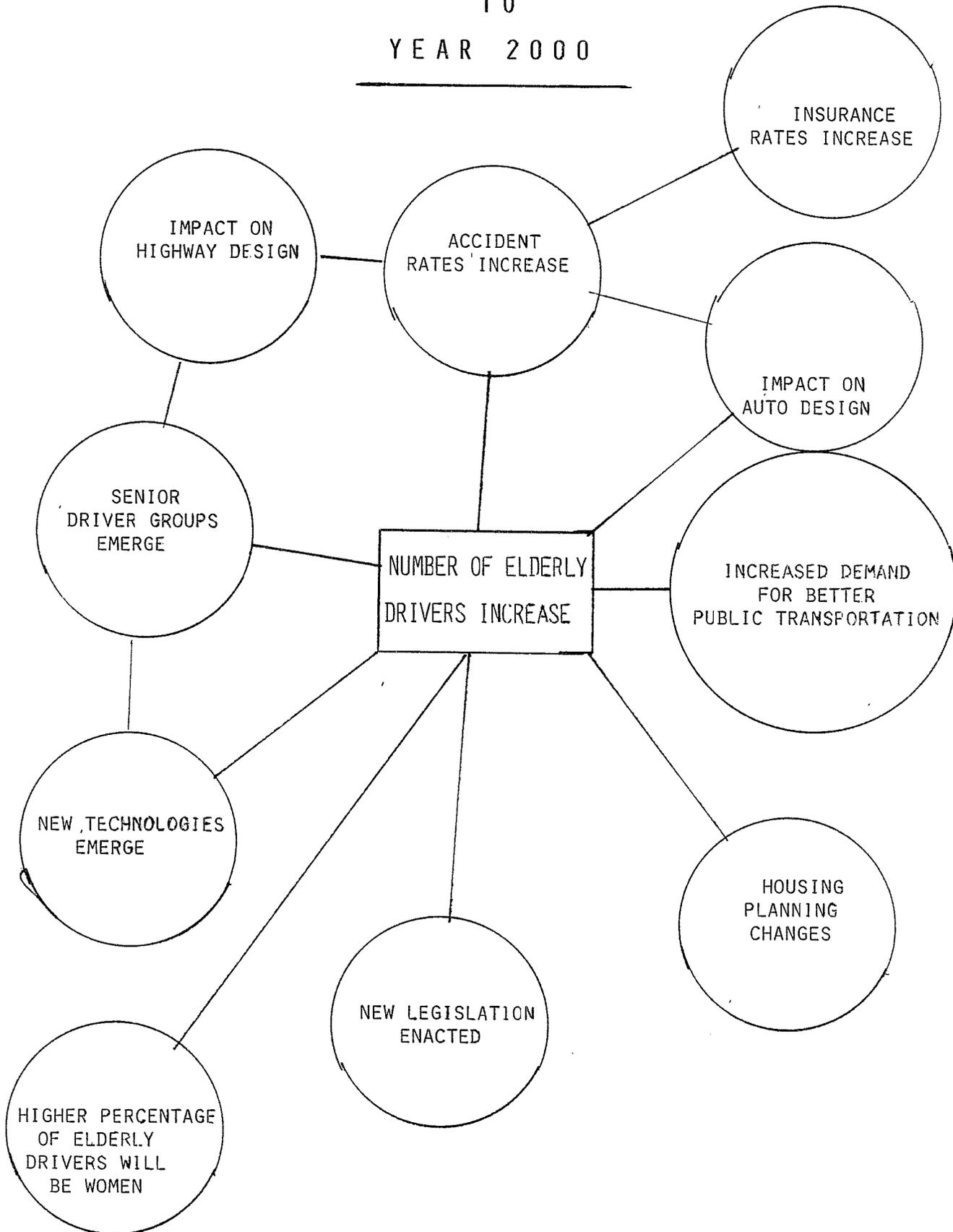
As can be seen from this brief overview of what other jurisdictions are doing and thinking about the special problems

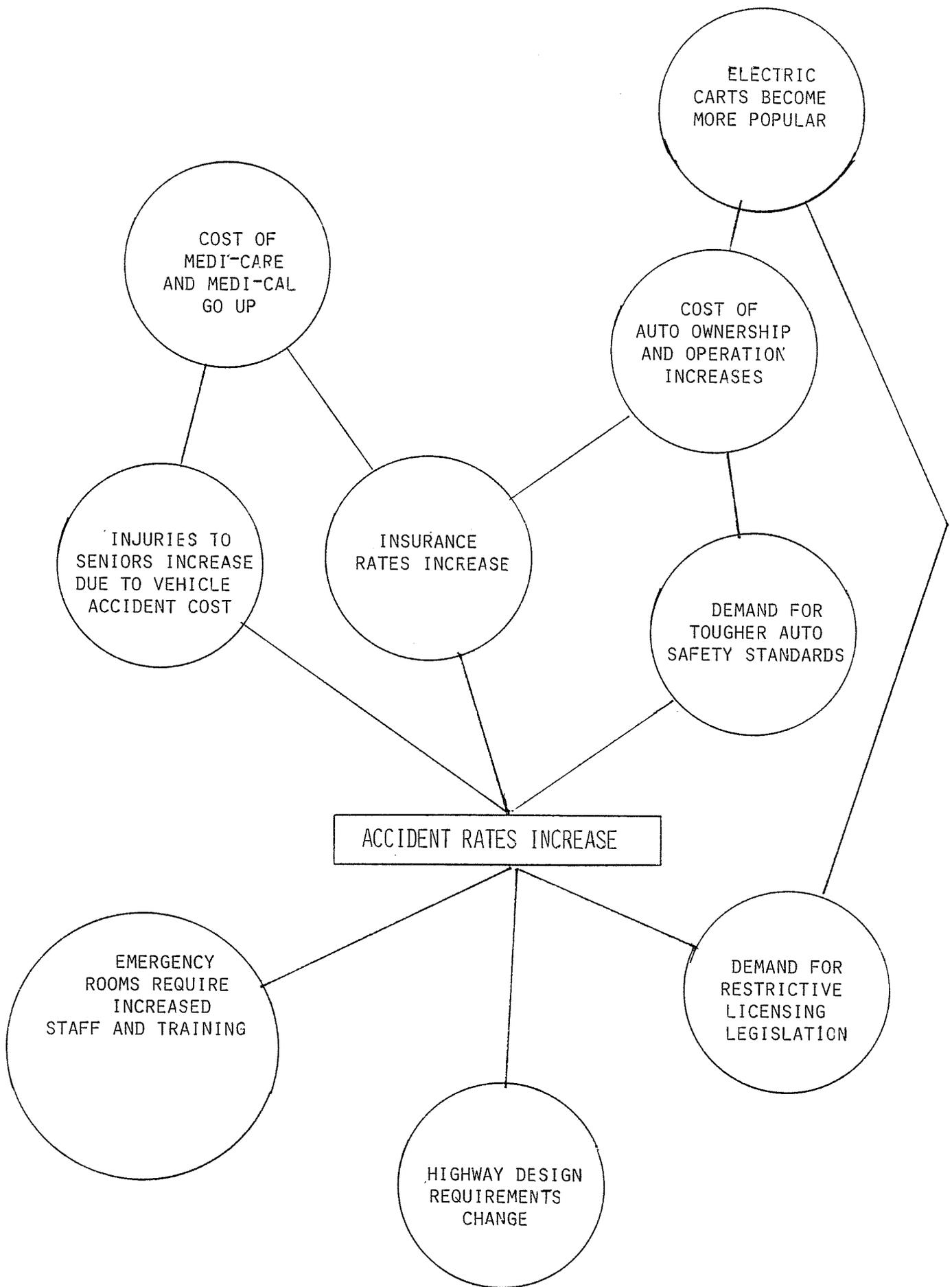
presented by elderly drivers in their states. The solutions range from doing nothing to providing full testing to people who reach a certain age. The questions must therefore be asked, what age is appropriate to use as a baseline in requiring special testing? California, it appears, has already made that decision. Section 12814.5a of the California Vehicle Code defines 70 years of age as that age at which renewal by mail will no longer be allowed. There must be some good reasoning behind selecting that age as the cut-off point, but why choose 70 as the age limit for requiring a different set of testing criteria? There are justifications for using this age as the benchmark for requiring different testing criteria. Basically, statistics from testing performed on drivers previously licensed by other states indicate that in the 70 to 74 age group the failure rate is over 30%, and in the 75 and over age group the rate increases to over 40%. These were the only age groups whose failure rate was more than one standard deviation away from the mean score of 19.8% for all ages.³⁷ California Vehicle Code section 12816 allows a four-year renewal period for all drivers. Concomitantly, section 12814 of the California Vehicle Code, in speaking to the issue of renewal of licenses, says in part, "The age of the licensee by itself shall not be construed evidence of a condition requiring examination of driving ability." Along with this, Vehicle Code section 12804a makes the examination of out-of-state licensed drivers applying for a California license optional at the discretion of the driving examiner.

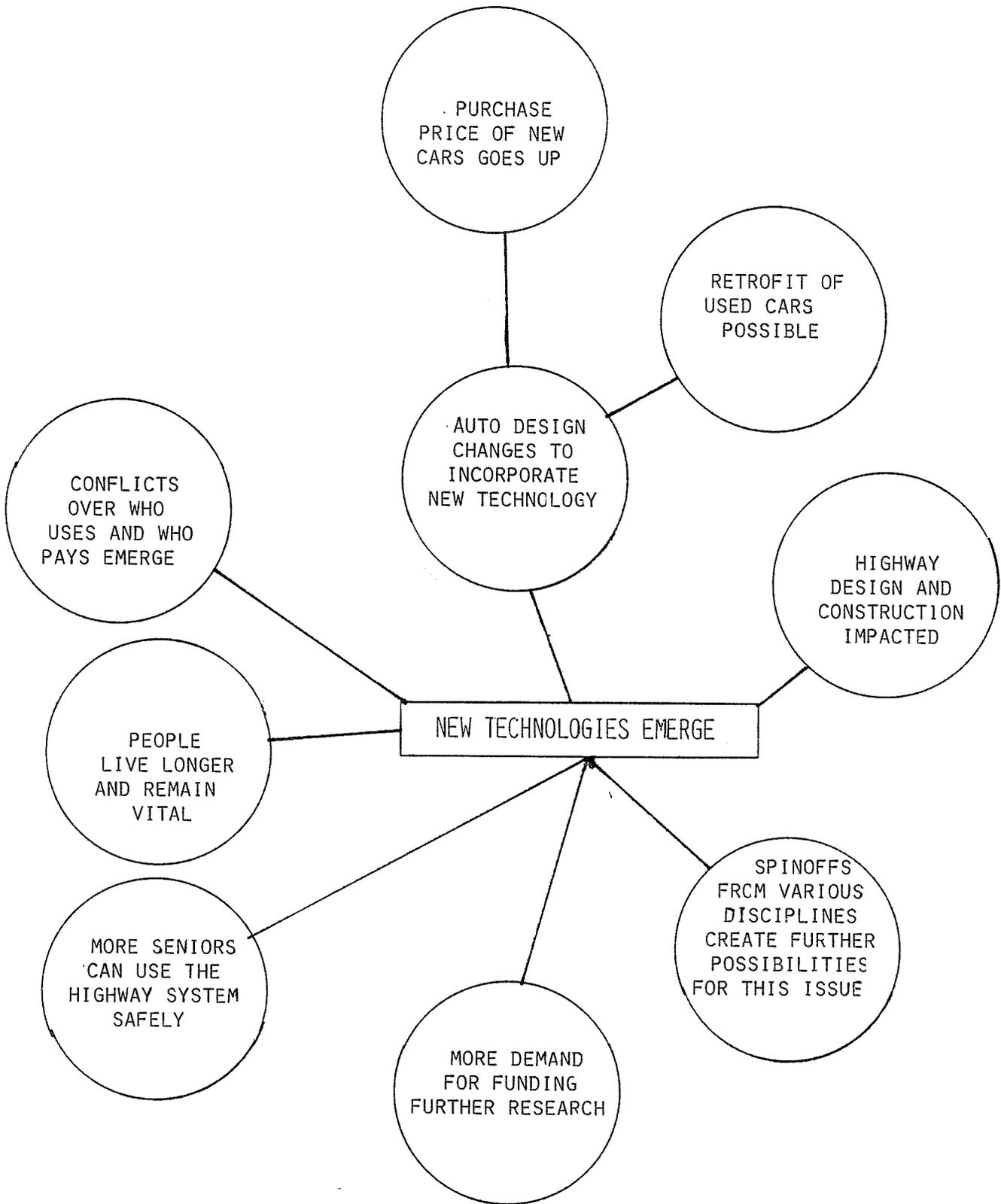
PLOTTING THE FUTURE: As we have seen from the research already conducted, what has been called the graying of America is no secret. While there have been recent increases, birth rates have generally been lower than in the years since 1945 to 1964, the baby boomers, and some of the baby boomers are already in their 40s. Obviously the population is growing older while youth is on a slow but steady decline. Advances in medicine are increasingly affecting everyone's life expectancy. Statistics uncovered by this research indicate that 33 out of every 100 drivers age 75 and older will be involved in an accident, compared to 34 out of every 100 drivers age 20 to 24, and 31 out of every 100 teenage drivers. The researcher feels that the accident rate for teenagers is lower because fewer of them have access to automobiles.

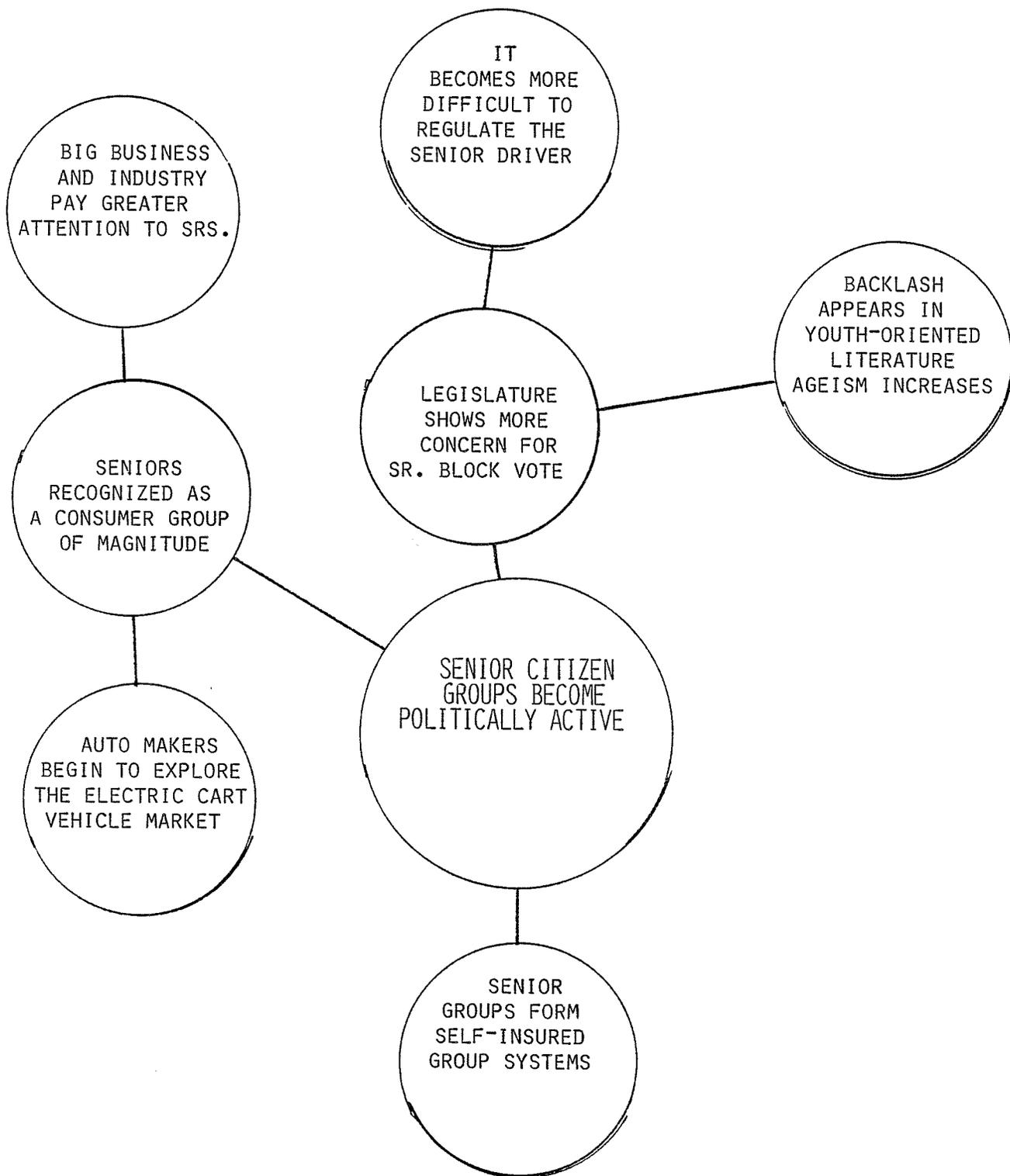
The rapidly growing number of elderly drivers will create some impact for traffic planners and safety engineers in the future. In order to find out the range of impacts these changes will have the researcher put together a small group to engage in nominal group technique (NGT). On the following pages are displayed future wheels which are the result of those NGT exercises. Following that we have used the Delphi exercise to refine a range of opinions on possible futures. Next, the trajectory of those futures were plotted through time to show a high and low expectancy for the year 2000. The end result of this is basically an attitude survey of the people involved in the groups. Members of the Delphi group, 12 in number, range in age from 16 to 82.

YEAR 1985
TO
YEAR 2000









QUESTIONNAIRE

The following statements concern trends and issues which could affect the future of highway safety in California. Each statement should be considered on its own merits and not as it relates to any other statement contained in this questionnaire. By scoring a particular statement "Very unlikely," "Unlikely," "Possible," "Likely," or "Very likely," you are giving your best opinion as to whether or not this statement will be true in the future.

1. As the percentage of elderly people as a segment of our population increases, so will the numbers of those elderly people who operate automobiles.

Very unlikely ___ Unlikely ___ Possible ___ Likely 3
Very likely 9

2. As the number of elderly drivers increases so will the number of traffic accidents where the elderly driver is listed at fault.

Very unlikely ___ Unlikely 2 Possible 1 Likely 4
Very likely 5

3. The increasing number of elderly people will create a demand for better public transportation.

Very unlikely 1 Unlikely 4 Possible 5 Likely 2
Very likely ___

4. Insurance rates will increase to the point that seniors, living on a fixed income, will not be able to afford insurance.

Very unlikely ___ Unlikely ___ Possible 3 Likely 5
Very likely 4

5. Many elderly people will continue to drive their automobiles even if they do not have insurance.

Very unlikely ___ Unlikely 5 Possible 1 Likely 6
Very likely ___

6. Elderly people will, as a rule, discontinue driving when they feel they are physically or mentally no longer able to operate a motor vehicle.
Very unlikely Unlikely 4 Possible 4 Likely 3
Very likely 1
7. New technologies and increasing use of electronics in auto design will make it easier for elderly people to operate motor vehicles.
Very unlikely 2 Unlikely 6 Possible 1 Likely 2
Very likely 1
8. New technologies will allow elderly people to drive their cars far later in life than they do now.
Very unlikely 1 Unlikely 2 Possible 4 Likely 3
Very likely 2
9. The increasing number of elderly people as a portion of our population will create a demand for tougher auto safety standards.
Very unlikely 1 Unlikely 1 Possible 1 Likely 5
Very likely 4
10. The basic cost of operating a motor vehicle will increase as a percentage of individual income.
Very unlikely 3 Unlikely 1 Possible Likely 3
Very likely 5
11. Electric carts will become popular in cities.
Very unlikely 1 Unlikely 3 Possible 3 Likely 4
Very likely 1
12. The increasing number of seniors named as the driver at fault in accident reports will create a demand for new licensing requirements and new traffic safety legislation.
Very unlikely Unlikely 1 Possible 3 Likely 6
Very likely 2

13. The issues and conflicts concerning who uses the transportation systems and who pays for them will continue to increase.

Very unlikely 3 Unlikely 2 Possible 5 Likely 2

Very likely

14. The purchase price of a new automobile will continue to increase as a percentage of individual income.

Very unlikely Unlikely 1 Possible Likely 4

Very likely 7

15. As more people live longer there will be increasing demand for research into those medical conditions which are peculiar to the elderly.

Very unlikely Unlikely 1 Possible ~~1~~ Likely 4

Very likely 5

16. Government and major industries will remove the mandatory retirement age and make retirement an individual option at either the company's or the employee's discretion.

Very unlikely 3 Unlikely 4 Possible 4 Likely 1

Very likely

17. Legislators will have a greater concern for senior citizens as a block voting group, and seniors will have a greater say than they now do in the legislative process.

Very unlikely Unlikely 3 Possible 6 Likely 2

Very likely 1

18. It will become increasingly difficult to pass legislation that will regulate the senior citizens' use of the automobile.

Very unlikely 1 Unlikely 7 Possible 3 Likely 1

Very likely

19. The major automobile manufacturers will pay greater attention to seniors as a portion of the buying public.

Very unlikely Unlikely 2 Possible 4 Likely 5

Very likely 1

20. The major automobile manufacturers will begin to produce electric carts aimed at the senior market.

Very unlikely 3 Unlikely 7 Possible 1 Likely

Very likely 1

21. Women will make up a larger portion of elderly automobile drivers than the rest of the population.

Very unlikely 1 Unlikely 3 Possible 5 Likely 3

Very likely

QUESTIONNAIRE

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Very unlikely ___ Unlikely ___ Possible ___ Likely 2

Very likely 10

2. As the number of elderly drivers increases so will the number of traffic accidents where the elderly driver is listed at fault.

Very unlikely ___ Unlikely 1 Possible 1 Likely 6

Very likely 4

3. The increasing number of elderly people will create a demand for better public transportation.

Very unlikely 1 Unlikely 7 Possible 4 Likely ___

Very likely ___

4. Insurance rates will increase to the point that seniors, living on a fixed income, will not be able to afford insurance.

Very unlikely ___ Unlikely 1 Possible 4 Likely 6

Very likely 1

5. Many elderly people will continue to drive their automobiles even if they do not have insurance.

Very unlikely ___ Unlikely 2 Possible 1 Likely 8

Very likely 1

6. Elderly people will, as a rule, discontinue driving when they feel they are physically or mentally no longer able to operate a motor vehicle.
Very unlikely 2 Unlikely 5 Possible 5 Likely
Very likely
7. New technologies and increasing use of electronics in auto design will make it easier for elderly people to operate motor vehicles.
Very unlikely 2 Unlikely 7 Possible Likely 3
Very likely
8. New technologies will allow elderly people to drive their cars far later in life than they do now.
Very unlikely Unlikely 1 Possible 2 Likely 7
Very likely 2
9. The increasing number of elderly people as a portion of our population will create a demand for tougher auto safety standards.
Very unlikely 1 Unlikely Possible Likely 6
Very likely 5
10. The basic cost of operating a motor vehicle will increase as a percentage of individual income.
Very unlikely Unlikely Possible 1 Likely 9
Very likely 1
11. Electric carts will become popular in cities.
Very unlikely Unlikely 7 Possible 3 Likely 2
Very likely
12. The increasing number of seniors named as the driver at fault in accident reports will create a demand for new licensing requirements and new traffic safety legislation.
Very unlikely Unlikely Possible 1 Likely 8
Very likely 3

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Very unlikely 1 Unlikely 5 Possible 3 Likely 3
Very likely
14. The purchase price of a new automobile will continue to increase as a percentage of individual income.
Very unlikely Unlikely 1 Possible Likely 6
Very likely 5
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Very unlikely Unlikely Possible Likely 4
Very likely 8
16. Government and major industries will remove the mandatory retirement age and make retirement an individual option at either the company's or the employee's discretion.
Very unlikely 3 Unlikely 7 Possible 1 Likely 1
Very likely
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Very unlikely Unlikely 4 Possible 7 Likely 1
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Very unlikely Unlikely 5 Possible 5 Likely 2
Very likely

19. The major automobile manufacturers will pay greater attention to seniors as a portion of the buying public.

Very unlikely___ Unlikely___ Possible___ Likely 9

Very likely 3

20. The major automobile manufacturers will begin to produce electric carts aimed at the senior market.

Very unlikely 3 Unlikely 7 Possible 1 Likely___

Very likely___

21. Women will make up a larger portion of elderly automobile drivers than the rest of the population.

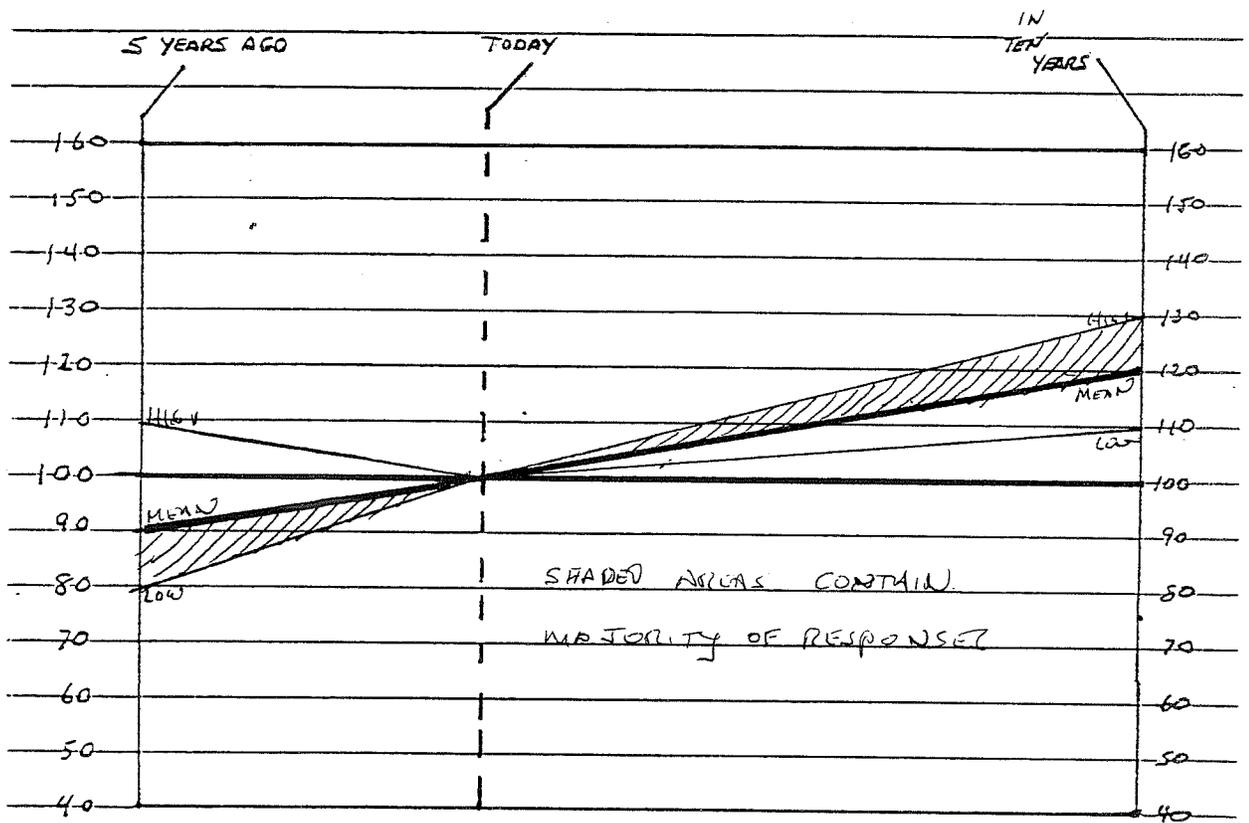
Very unlikely___ Unlikely 1 Possible 8 Likely 3

Very likely___

ATTITUDE SURVEY

ISSUE: THE POPULATION IS AGEING

TREND: % OF ELDERLY (OVER 70) DRIVERS WHO ARE WOMEN

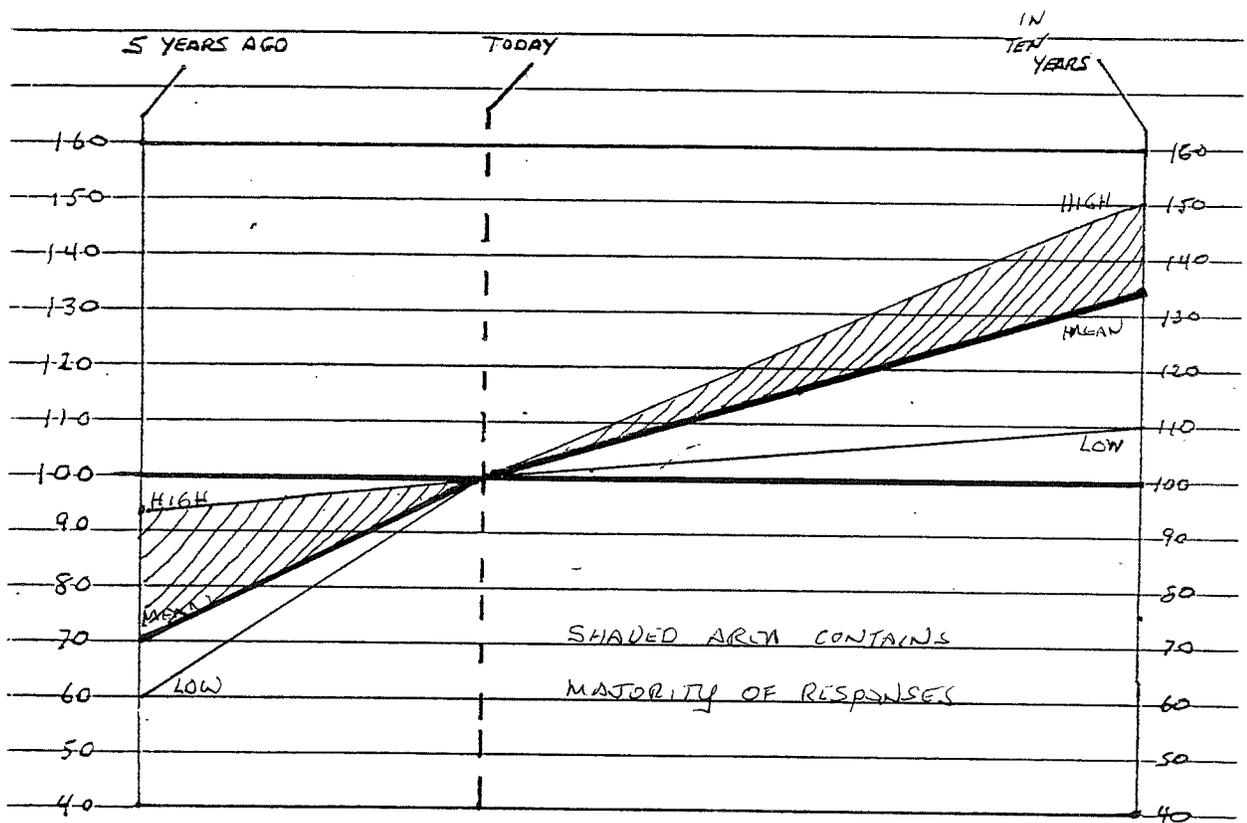


IF THE TREND IN QUESTION IS RATED AT 100 TODAY,
WHAT WOULD YOU RATE IT 5 YEARS AGO AND 10
YEARS FROM NOW?

ATTITUDE SURVEY

ISSUE: THE POPULATION IS AGEING.

TREND: DEMAND FOR BETTER PUBLIC
TRANSIT SYSTEMS

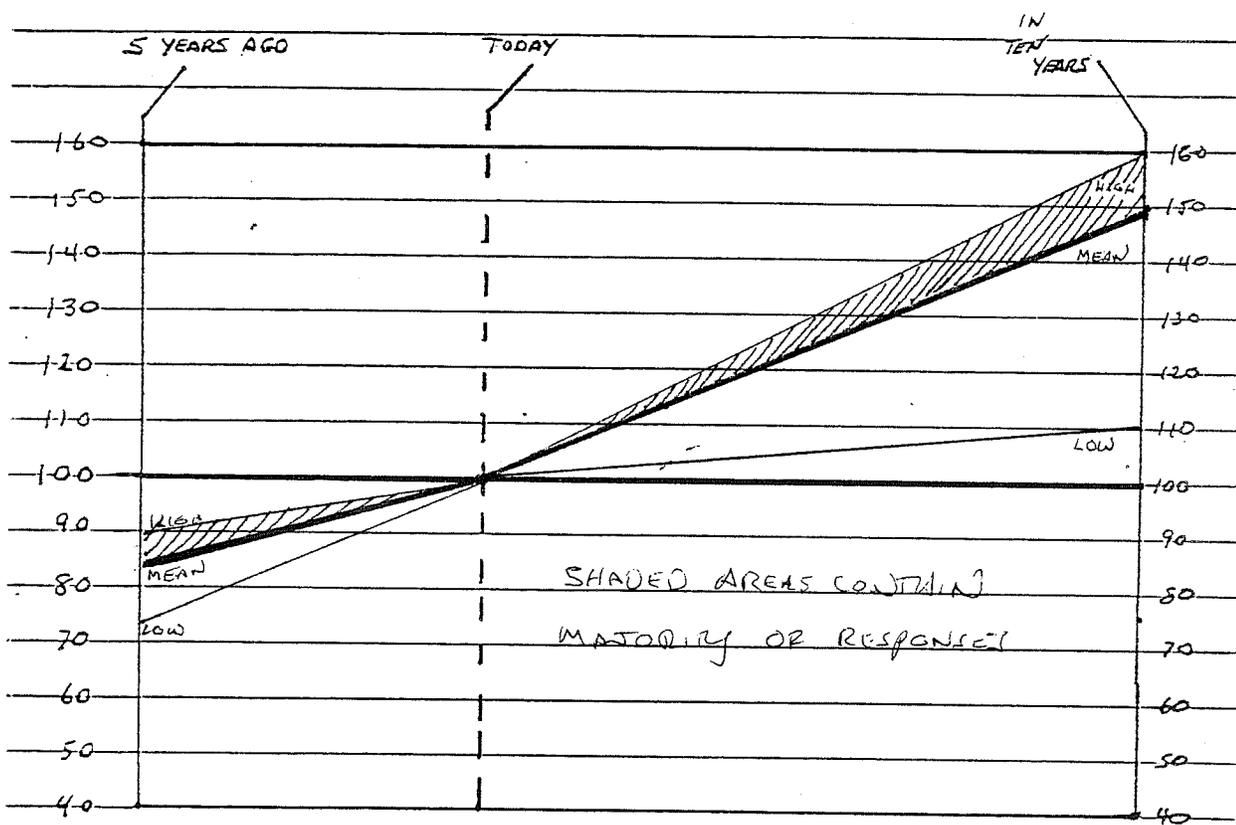


IF THE TREND IN QUESTION IS RATED AT 100 TODAY,
WHAT WOULD YOU RATE IT 5 YEARS AGO AND 10
YEARS FROM NOW?

ATTITUDE SURVEY

ISSUE: THE POPULATION IS AGEING

TREND: SENIOR'S SPECIAL INTEREST
HAVE POLITICAL IMPACT

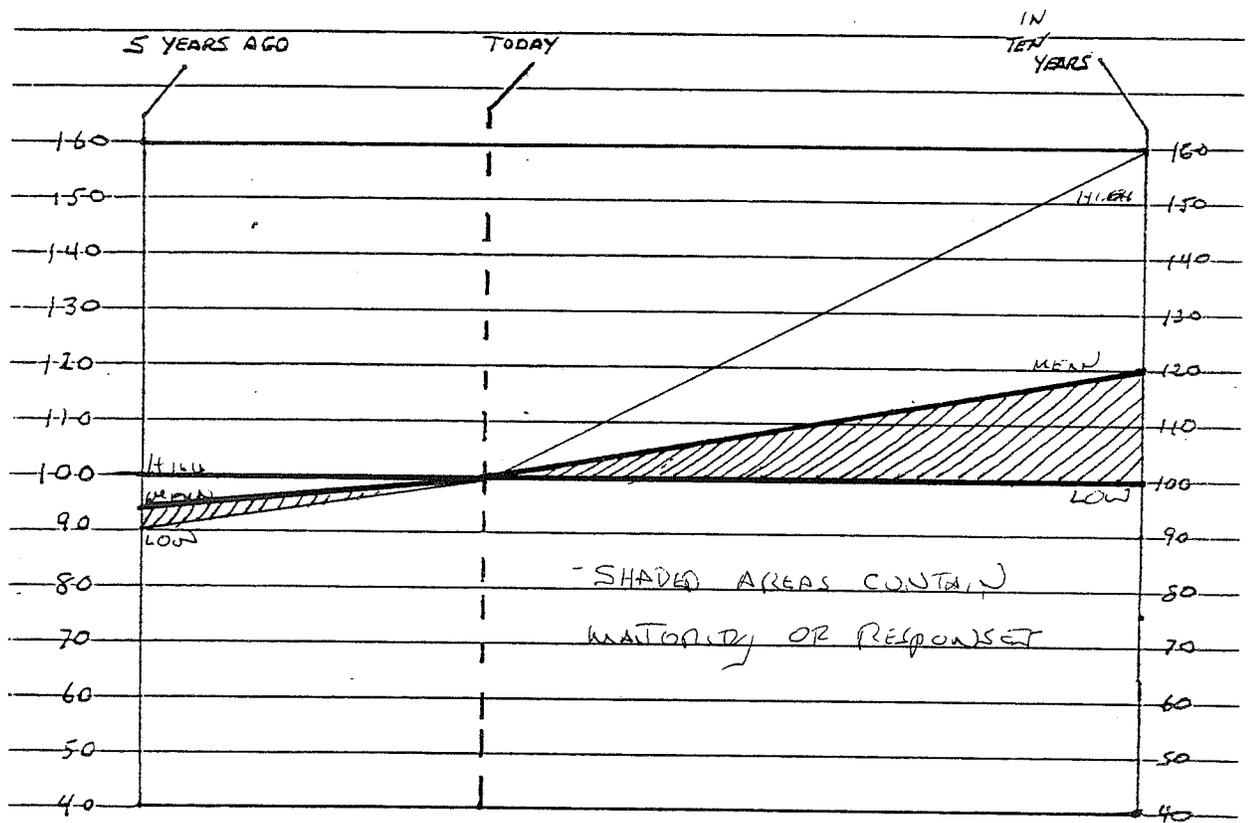


IF THE TREND IN QUESTION IS RATED AT 100 TODAY,
WHAT WOULD YOU RATE IT 5 YEARS AGO AND 10
YEARS FROM NOW?

ATTITUDE SURVEY

ISSUE: THE POPULATION IS AGEING

TREND: ACCIDENT RATES OF SENIOR
ELDERLY (OVER 70) DRIVERS

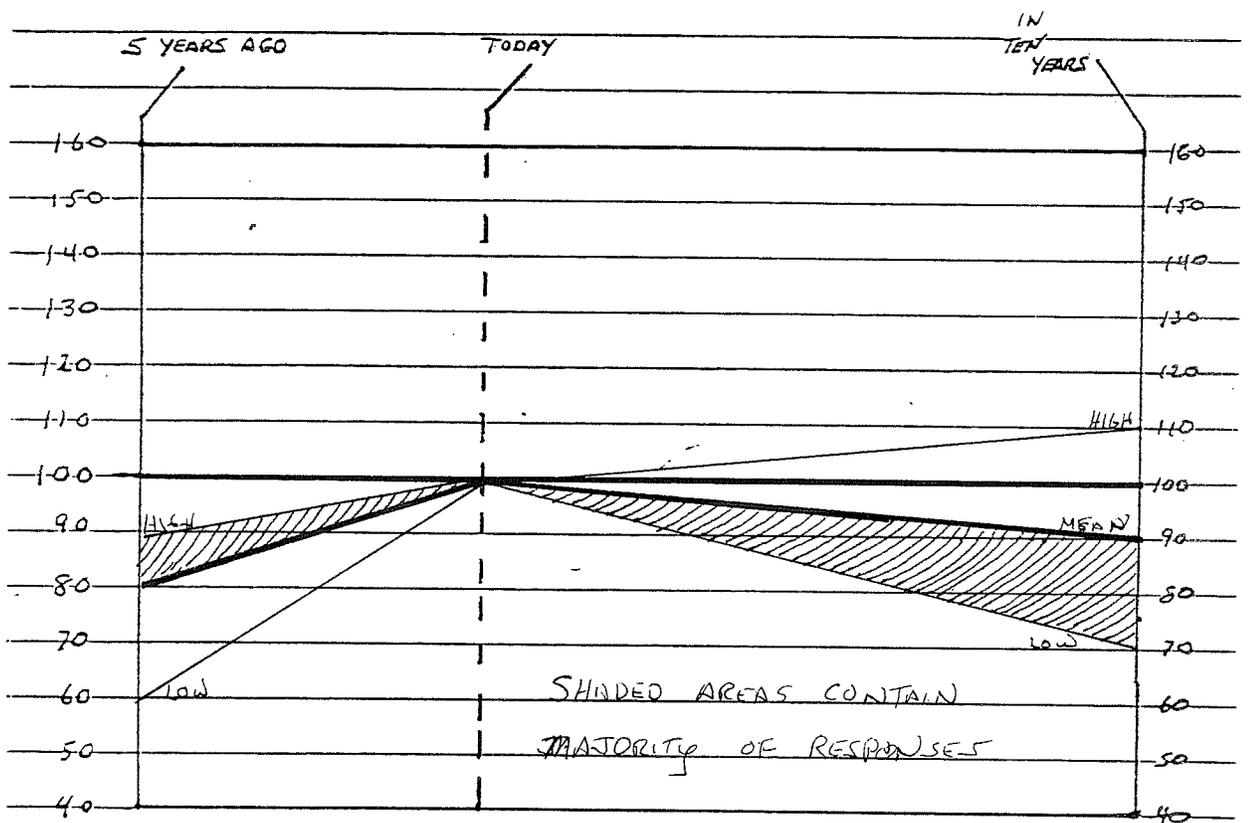


IF THE TREND IN QUESTION IS RATED AT 100 TODAY,
WHAT WOULD YOU RATE IT 5 YEARS AGO AND 10
YEARS FROM NOW?

ATTITUDE SURVEY

ISSUE: THE POPULATION IS AGEING

TREND: DEMAND FOR TOUGHER AUTO
SAFETY STANDARDS



IF THE TREND IN QUESTION IS RATED AT 100 TODAY,
WHAT WOULD YOU RATE IT 5 YEARS AGO AND 10
YEARS FROM NOW?

S C E N A R I O S

F O R

T H E Y E A R 2 0 0 0

THE HIGH-TECH SCENARIO--AN EXERCISE IN SERENDIPITY: It is a cold and perhaps rainy De-

cember morning in the year 2000. The third millenia begins in but a month. John Elder, age 87, walks out of his house on this morning in Rancho Bernardo, a popular retirement area in San Diego for the moderately well-to-do. John belongs to the first generation of reasonably well-to-do and highly mobile senior citizens. One of the reasons John can get around so well at his age is the two-door six passenger sedan parked in the driveway. It is a new vehicle less than a year old and possesses all of the high-tech instrumentation and design features available on modern vehicles. From the outside John's car does not appear to have a much different profile from the vehicles that were designed in the mid-80s. One concession to aerodynamic design is the smooth, seamless contours of the vehicle. The vehicle is made primarily of high-impact plastics and foam and fiberglass composites. The glass used in making the vehicle is ST-100, a type of fiberglass that was chemically engineered in the mid-1980s. It is twice as strong as Kevlar while having only 50% of the weight. As a matter of fact, the curb weight of the vehicle has been tremendously reduced by the use of plastics throughout, including the engine and transmission systems.

As John approaches the vehicle the infrared locking system recognizes his individual heat signature as one of the four authorized drivers of the vehicle. As he comes within three feet of the car the driver's door automatically unlocks, opens outward slightly and then slides backwards. This type of a door system allows the driver full

access to the vehicle similar to that provided by the sliding doors on mini-vans that were popular in the mid-1980s. The infrared locking system, aside from unlocking the vehicle and opening the door, has positioned the driver's seat and rearview mirrors to the pre-programmed position that John prefers. Starting the vehicle is simply a matter of pushing a button. The starter and fuel control system automatically operate the choke and throttle to obtain a fast engine start. Once started the heads-up display system projects the instruments, normally found on the dashboard of older vehicles, onto the lower portion of the windshield. When the driver selects reverse the vehicle begins to back out of the driveway. The Doppler radar anti-collision system of the vehicle would automatically brake the vehicle should the driver approach an object such as a block wall, a tricycle or perhaps a child. The collision avoidance system works both front and rear and to the side, so that the driver of the vehicle cannot, through inattention or any other way, cause an accident. If the driver is following another vehicle too closely, the collision avoidance system will not allow the distance between the two vehicles to close to the danger point, depending on the speed and other road conditions.

Once out on the highway this particular automobile has much better and safer handling characteristics than its predecessor. It is equipped with four-wheel drive, four-wheel steering and an electronically enhanced suspension system along with anti-skid braking devices. The four-wheel steering in particular makes the car much easier to handle in the different driving conditions ranging

from highway speeds to maneuvering in parking lots.

The automobile is an extremely fuel-efficient design not because of its aerodynamic qualities but because the power-to-weight ratio favors fuel consumption. The vehicle curb weight has been reduced even more by the use of plastics and high-impact Torlon in the engine and transmission systems. The engine no longer has a cam shaft, nor does it have timing gears. The four valves per cylinder, two intake and two exhaust, cycle open and closed in response to commands from the computerized fuel control.

There is virtually no maintenance schedule on John's new car. The vehicle came from the factory with a sealed hood and transmission compartment. The power train of the vehicle came from the factory with all fluids sealed into the system. A specially designed filter system continually cleans and recycles the oil. When the engine and power train system have reached the average mean time to failure, approximately 150,000 miles, the owner of the vehicle can take the car back to the dealer and at the shop they will completely replace the engine and power train as mechanics once replaced batteries in automobiles. Because of the new technologies involved, John's car is far more expensive to purchase outright than the cars of ten to fifteen years ago. However, because of its high degree of fuel efficiency and lack of required maintenance it is extremely inexpensive to operate.

Advances in automobile technology have also trickled down to the electric cart, the golf cart of the past. Virtually all of the major automobile manufacturers now produce two- and four-passenger

electric automobiles which are designed to operate in the 15 to 30 mile an hour range and no more than 10 miles between charges. In the various retirement areas of the state these types of electric vehicles have become extremely popular and in wide usage. Most communities have now redesigned their streets to have electric cart lanes. These specially designed street lanes allow the segregation of standard automobile traffic from bicycle and electric cart traffic, thus enhancing traffic safety in the area.

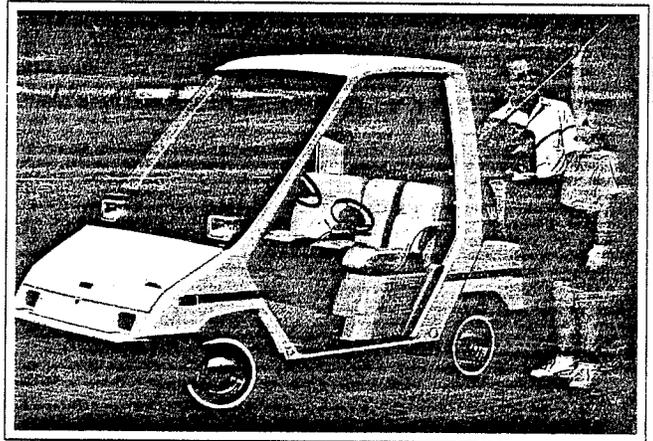
Luxury on the Links

Golf carts were conceived as simple, functional machines that would ferry players around courses that often stretched for three or four sinuous miles. Now, however, more and more linksters prefer to ride in style. Japan's Yamaha, which is becoming the fanciest, priciest cart ever to cruise past a clubhouse. Called the Sun Classic, this "golf car," as Yamaha refers to it, sells for \$4,230 and comes with tinted windshield, headlights with high beams, self-canceling turn signals, brake and tail lights, adjustable seats and chrome wheels with white-wall tires. Such options as plush carpeting and AM-FM radio can add \$280 more to the sticker price.

The Sun Classic is likely to be an especially big hit in retirement communities that allow people to drive golf carts on public streets. In Sun City West, Ariz., Yamaha Dealer Ned Lee says, carts have become a major mode of transportation. He adds, "Here, parking lots have spaces marked just for golf carts."

Powered by a small gasoline engine that gets as much as 24 m.p.g., the Sun Classic is geared to travel at 13 m.p.h. but can be souped up to hit 30. Jim Hakeman, 66, of Sun City West, uses his new Sun Classic for shopping expeditions and

visits to friends' condominiums. Says he: "It's a beautiful machine. It's the first golf cart that doesn't look like one." It is fast becoming an object of envy. Says Larry Koch, 52, who lives near the Round Hill Country Club in Alamo, Calif.: "The Sun Classic is very stylish. A dozen guys have already bought one after seeing mine."



Yamaha's "golf car" handles a roadway as well as a fairway

ALAN LEVISON

Should John reach the age and physical condition where he will no longer be able to operate his gasoline-powered automobile, he knows that he can purchase one of these electric carts; and even beyond the time when he is too frail to operate the electric cart, he knows that

he will have some degree of mobility with the individual powered wheelchairs that became popular in the mid-80s.

LEGISLATIVE SCENARIOS While technological advances in the design and equipping of the automobile have improved traffic safety, it became obvious by 1990 that gadgetry alone would not provide a significant degree of highway safety. As the population of elderly drivers began to swell, an increasing number of accidents attributed to the frailties of elderly drivers created a ground swell of public opinion that could only be classed as ageism; that is, prejudice against the elderly as it related to them as automobile drivers. Whenever an automobile accident involved an older person passersby automatically assumed that the older person was the driver at fault. Frequently that was not true. Nevertheless, public pressure forced legislative action. A new driver's license system was devised by 1995 which categorized drivers by the types of vehicles they operated and the types of driving that they were allowed to do. Most states, including California, have long recognized the age of 70 as an age that required a different philosophy in driver's license examinations. California was one of the first states to do so when in 1976 it passed legislation which prohibited automatic license renewal by mail for those persons who were over 70. Now every individual over 70 years of age must take a complete driver's examination every two years. This includes a written, sign recognition and a performance test on the road. After a person reaches 80 years of age this test is required annually.

The tiered license system allows the licensing of drivers by the type of equipment they operate and the type of driving they engage in. A class A license allows the standard private automobile operator to

operate any vehicle powered by combustion with three or fewer axles and having a gross weight under 10,000 pounds to operate that vehicle on any road or highway. The class B license allows the licensee to operate any combustion vehicles described in a class A license. However, they are limited to city surface streets. Holders of a class B license are not allowed to operate their vehicles on interstate or state highways.

A class C, or electric carriage license, allows the licensee to operate any electrically powered vehicle having a top speed of 30 miles an hour and a license weight of under 1500 pounds. However, that licensee may only operate the vehicle in designated electric carriage lanes. These lanes have been specially marked by the Highway Department and resemble the old diamond lanes used on the freeway. This was a very commonsense approach to highway engineering in that it segregated vehicles by their performance factors and the abilities of the individual drivers involved.

SENIOR-ACTIVE ORGANIZATION SCENARIOS Elderly people are perhaps the best informed segment of our society. Although the retirement ages for government and industry have in the past few years gone upward from 60 to 65 and then to 70, people are living longer and more active lives in their retirement years. Seniors by habit get their information from the printed media. Newspapers, periodicals and other journals contain in-depth information on current issues and trends. Naturally, senior citizens are quite interested in that material which would affect their particular age groups. Conversely, younger people who don't have the time to read as extensively as do seniors, get their information on news and issues from the electronic media which provides only a cursory sampling of each individual issue or news item.

Seniors also have the time to read and research items that may interest them. There are among the retired persons of America many leaders, administrators and organizers. When these individuals retire they may refocus the direction of their energies but not necessarily change the habits of a lifetime. They will continue to lead, administrate and organize. Their energies will, of course, be focused on those areas of interest to them at their particular time of life. See Exhibit C.

As the number of retired persons in America swells each year, various leaders have emerged to carve different niches for themselves in organizing senior-active groups. One such group that has recently emerged is the Retired Automobile Owner and Drivers Association. This group has become particularly active in focusing on legislation

which may restrict the senior citizen's use of the automobile. They will target legislation that will affect them and probably exert tremendous pressure on legislators, who will be sensitive to the senior citizens as a voting block, to vote for or against various highway traffic safety bills in a manner which reflects the desire of that special interest group.

PUBLIC TRANSPORTATION--A SCENARIO OF FAILURE If one were to describe the ideal public transportation system one might mention such things as, inexpensive to operate, readily available, operating at times consistent with the individual's needs, picking the individual up where he wants to be picked up and dropping him off where he wants to go. That ideal public transportation system would not use government or public monies to operate but would, in fact, generate tax money for society to use in other areas. Such public transportation systems should provide a wide and varied range of career opportunities and employment for the citizens in its service area.

That ideal public transportation system can be described in one phrase--the automobile. The people of American have over the past century developed an extremely special relationship with the automobile. It has offered a maximum of convenience and comfort to the owner at a relatively reasonable price. The wide variety of vehicles available on the market provide each individual the opportunity to express himself through the type of vehicle he owns and operates. The American automobile owner will drive 1,000 miles and take a picture of his car while on vacation. Drivers will cruise shopping center parking lots for twenty minutes to find a parking place that is closest to the door. Then they will enter the shopping complex and walk miles through the stores and shops.

With the exception of major metropolitan areas along the eastern seaboard and the city of San Francisco in California, mass transit has not enjoyed much acceptance by the American public. The

tremendously expensive rail and bus systems do not provide the utility and convenience required by the American public. While the demand for improved urban transit systems has increased steadily over the past two decades, no solutions to the problems of funding and property acquisition have been forthcoming. Neither has there been any consensus on the form that urban transportation systems should take. Many favor monorails and surface trains, while others argue for bus routes and subway systems. This lack of consensus, coupled with the consistently escalating prices for labor, materials and land have blocked all moves in the cities towards developing any effective public transportation system. Therefore, the transportation systems of the year 2000 have not changed significantly in the last two decades.

A STRATEGIC PLAN TO PROVIDE
A REASONABLE REGULATORY ENVIRONMENT
IN LICENSING
AND LICENSE RENEWAL
OF
ELDERLY DRIVERS

THE SITUATION: Considering the demographic realities concerning the age of Californians, the projected life spans, the increasing technical environment and medical advances, it takes no great leap of imagination to see that in the next few years there will be far more elderly people driving automobiles than there are today. Projections indicate that the indigenous population, coupled with the influx of people retiring to sunbelt areas, will cause the number of licensed drivers over 70 to increase fivefold by the year 2000. Clearly this will have some impact on traffic safety as people who have the economic wherewithal to own and operate motor vehicles but who have reached the age when reaction time, mental alertness, vision and general physical condition can deteriorate rather rapidly hit the road in significant numbers.

Perhaps the most effective method of dealing with the projected problems presented by the shifting demographic landscape is to adjust the regulatory environment. When people reach an age at which physical and mental changes can occur rapidly, it is reasonable to increase the frequency at which the individual's ability to drive is tested. Resistance will be encountered, most likely, from senior-active groups who will not want to be segregated from the general population. Therefore, such legislation would have a higher chance of becoming law if it was included in a "Highway Safety" package which also addressed other issues and problems.

ENVIRONMENTAL ANALYSIS: California Vehicle Code section 12804a

says in part that out-of-state drivers who are applying for a California license are not required to take a driving exam except at the discretion of the Department of Motor Vehicles examiner. As for the renewal of driver's licenses, section 12814 of the California Vehicle Code states, "The age of the licensee by itself shall not constitute evidence of a condition requiring examination of driving ability." One concession to age is made in the code through section 12814.5a which prohibits a person from having their driver's license renewed by mail once they have reached their 70th birthday. The older drivers are required to report to the Department of Motor Vehicles and to take a written test and vision exam in order to renew their driver's license. Yet the license renewal period in California is four years for all drivers as required in California Vehicle Code section 12816. Under these current regulations an individual may have his license renewed when he is 86 years old, and then the Department of Motor Vehicles will not have another opportunity to review his driving ability until he is 90 years of age. Clearly an individual who is 86 years old is in that age group where physical and mental abilities can decline rapidly. Because of this regulatory environment the decision whether or not to drive is often left to an individual who may no longer possess the mental faculties to reach an appropriate conclusion or adequately appraise his own ability to drive a vehicle. Obviously, every individual has a vested interest in his own driver's license. To automatically surrender your personal mobility and convenient freedom of movement

would indeed be difficult. Most certainly there will arise conflicts within the individual who must reconcile his personal need for transportation against a rapidly failing condition which would prevent him from safely operating a motor vehicle. This conflict was clearly articulated by 89 year old Harry L. Gilmore of St. Petersburg, Florida who hit several parked cars while taking a road test for the renewal of his driver's license. Gilmore told a reporter of the St. Petersburg Times, "I'm just so damned old, but I need to drive," he said. "I drive over to the bank and the grocery store, and that's it."

RESOURCE ANALYSIS: In developing a strategic plan for the issue of elderly drivers and traffic safety several resources can be brought to bear to create a regulatory environment which reflects the demographic realities of California's driving public. First of all is the Department of Motor Vehicles which can be a clearinghouse of statistical data regarding accidents and traffic safety. Secondly, would be the traffic safety committees of the California Assembly and Senate. These committees have the ability to sift through statistical data, legislative proposals and witness testimony in order to clear legislation which will provide the citizens of California with the highest degree of traffic safety provided for by reasonable and timely legislation.

Various law enforcement professional organizations such as the Highway Patrol Officers Association, the California Police Officers Association and the Peace Officers Research Association of California may all be viewed as a resource as it relates to

legislation for improved traffic safety. The Highway Patrol, obviously, will have the greatest exposure to on-scene accident rate and will probably be more sensitive to the issue than the other professional organizations. C.P.O.A., with its long established legislative and law review committee, would have the ability to effectively lobby for highway safety packages. P.O.R.A.C., or the Peace Officers Research Association of California, is a line officer's group. This organization has the ability to look into issues affecting the rank and file of law enforcement and is becoming increasingly concerned with issues related to public safety and providing adequate protection for the public. These organizations, when working together, provide a lobbying force of substantial magnitude. If or when an issue arises that allows these law enforcement professional organizations to reach a consensus on a course of action, their combined efforts would represent a considerable force in propelling a controversial piece of legislation through the legislative process.

The news media as a whole also represents a resource in the strategic planning for legislating effective traffic safety. The media has the ability to make the general public aware of emerging issues and sensitize them to problems developing in society. Through editorialization and commentary the media has the facility to not only focus attention on the issue, but suggest ways to the public by which government may effectively and reasonably deal with an emerging issue. When incorporating the news media into a strategic plan one must view their potential for acting favorably

with some caution. Overselling on the part of the news media could create an increasing prejudice in the minds of the general public against elderly citizens. This would have a negative effect on any legislative effort.

From the private sector we can see enormous resources which can be directed towards developing the issue and problem solving. The auto industry alone has a tremendous stake in the issue of who buys and who operates automobiles. New technologies will surely be brought on-line by companies who provide accessories to the automobile industry. The American Medical Association is one organization which could be looked at as a resource should the number of injuries related to elderly drivers increase, thus putting an added burden on already stressed emergency room facilities. One resource which one might not expect to be able to use in the issue of regulating elderly drivers would be the American Association of Retired People. The A.A.R.P., while concerned with issues which may negatively affect their constituency, is also concerned with taking a responsible place in American society. They do have the ability to objectively analyze these issues. If it becomes obvious to them that the safety of the general public and the goals of their organization go hand in hand, they could certainly be considered an ally.

STAKE HOLDER ANALYSIS: Several stake holders have been identified which have varied interests in the issue of elderly drivers. The principal stake holders which will have a major impact on this strategic plan are the driving public, the

retired and elderly people's associations and the individual legislators. Two of the stake holders are seen as "snail darters," in that they may adversely affect the strategic plan. Those two stake holders are the auto insurance industry and the Department of Motor Vehicles. While at first glance those organizations appear to be natural allies in the construction of legislation which would enhance traffic safety, analysis indicates that it may not necessarily be so.

1. THE DRIVING PUBLIC: Obviously, the driving public that use our highways daily represent a group of stake holders in any issue which concerns itself with traffic safety. In the past few years increasing concern for highway safety has created almost a complete redesign of the automobile. Beginning in 1958, when turn signals became mandatory for new vehicles, on through the use of collapsible steering columns, the mandatory installation of seat belts followed by the mandatory use of seat belts; the installation of air bags and other engineering safety items reflect the concern of the general public for traffic safety. It is felt that overall the general public will favor any legislation which substantially enhances traffic safety without unreasonably restricting the individual's freedom of movement.

2. RETIRED AND ELDERLY PEOPLE'S ASSOCIATIONS: Our elderly citizens represent a group of well-informed and responsible individuals who are up-to-date on current issues and have the ability to organize into bodies of considerable influence. While they will almost certainly resist

any legislative effort which appears to be discriminatory, they should be seen as allies in other circumstances. If, for example, it was demonstrated that the legislation involved would protect the elderly as well as other citizens, they may actually be in favor of such a program.

3. THE INSURANCE INDUSTRY: At first glance it would appear that the insurance industry would support any legislative effort which would enhance traffic safety, while at the same time reducing their exposure to loss. However, as Senator Jack Gordon of Florida pointed out, this is not necessarily so, especially when one considers the American Automobile Association. That particular group has a significant client base of elderly people; people who would almost certainly be affected by restrictive legislation. The A.A.A., along with other insurance companies and organizations, will almost certainly oppose any legislation which will adversely affect or alienate their client group.

4. AUTOMOBILE MANUFACTURERS: The automobile industry will almost certainly oppose any legislation which seeks to enhance safety in a manner which would eventually add to the purchase price of an automobile. Obviously, that type of approach would narrow their markets. On the other hand, the automobile manufacturers could be looked upon as allies in supporting any legislative effort which would increase traffic safety without adversely affecting their own markets. They would be even more receptive to legislation which opened new markets to

them, such as the electric carriage sales section of the marketplace.

5. DEPARTMENT OF MOTOR VEHICLES: Again one would think that an organization which has a substantial venue in the area of licensing and renewing licenses of drivers would be supportive of any measure which would enhance their ability to review driver's license applicants. This is not necessarily the case. The Department of Motor Vehicles is listed as a snail darter in this particular study because legislation, which would increase the renewal frequency for some drivers, would create an added burden to the department. They would not, without additional staff, training and facility, be able to handle the extra burden placed upon them by a significant legislative effort in the area of renewing driver's licenses. In a climate of decreasing availability of funding the administration of the Department of Motor Vehicles may not feel that they would be able to adequately staff and train their different divisions to handle the extra burden.

6. LAW ENFORCEMENT: Law enforcement as a whole will be supportive of any measure which will enhance public safety. Those areas of law enforcement such as the Highway Patrol and major department traffic divisions will provide support and initiate public information efforts.

7. LEGISLATORS: Individual legislators will be sensitive to the pressures brought on by groups and individuals who are seeking regulatory changes which will increase the safety

factor for the motoring public. On the other hand, as senior organizations become more effective in their lobbying efforts, individual legislators will be more cautious about doing anything which might offend this substantial constituency.

8. THE GUBERNATORIAL ADMINISTRATION: Whatever executive administration is in charge at the time such legislation is proposed will have to be seen as ambivalent in its approach to addressing the issue of elderly drivers and increased frequency of driver's license renewals. On one hand the executive branch must certainly concern itself with the issue of traffic safety. However, on the other hand they will have to act with circumspection when addressing any issue which will affect a major segment of the voting public.

MISSION OF THE STRATEGIC PLAN: To increase the traffic safety picture in California by a reasonable approach to re-evaluating driving ability through the renewal process for those individuals in an age group which represents a recognized and potential hazard.

EXECUTION: In this approach to producing a legislative effort which may likely be quite controversial, three different phases must be developed. The first phase will involve sensitizing the public to the issue while at the same time taking care not to create a discriminatory climate against any one particular age group. Perhaps the best way to do that is a

matter-of-fact approach to evaluating the accident picture in California. While doing this members of the A.A.R.P. or the other seniors groups could be enlisted to present programs which would cause seniors to objectively evaluate their own driving skills and abilities, and perhaps to recognize that the time will approach when every one of us should and, in fact, must quit driving. Next, law enforcement professional groups could be brought into play to work with various legislative and representative boards to produce legislative proposals which would require people in certain age groups to be tested more frequently. Thirdly, the individual lobby efforts of professional organizations and private industry could be brought to bear to ensure that a reasonable legislative effort is successful.

This researcher would recommend legislation which would:

- a. Require persons 70 years of age and older to be re-evaluated every two years by means of a test which would include vision, sign recognition and a demonstration of driving ability;
- b. Which would require individuals over 80 years of age and older to renew their driver's licenses by means of a vision exam, sign recognition and demonstration of driving ability examination annually;
- c. A tiered license system which would allow certain individuals to operate their vehicles on city streets at slower speeds but would prohibit them from using interstate and state highways. The tiered license system

could also be used to regulate the type of equipment that each individual operator could use, such as gasoline powered or electric powered vehicles.

NEGOTIATIONS: In negotiating any legislative effort we must maintain a flexible point of view, one that will allow individual legislators and lobby groups to compromise. There will be negotiations for support from various groups such as the A.A.R.P., the insurance and auto industries, the various legislative bodies involved and along with the executive board tested. The end result, however, must always be kept in mind and that is increasing the safety of our highways in California. It certainly should be noted at this stage that California has a long history of traffic congestion. California has 10% of the automobiles in the United States while having only 4% of the roads. We are a state which is developed around the use of the automobile and many emotional issues will certainly attach themselves to any legislative effort which would be seen as discriminatory to any particular age group.

ADMINISTRATION AND LOGISTICS: In any legislative effort it is extremely difficult to define what individual or organization has the ultimate responsibility for providing a regulatory environment which meets the needs of society at any given time. Currently the decision whether or to quit driving remains with the individual. As pointed out earlier in this report that particular individual may not have the mental

ability to make a reasonable and objective decision as to whether or not he should continue to drive. Again we must reflect on the fact that each one of us has a vested interest in our own driver's license. It represents our mobility and freedom of movement around our society. It is not reasonable to continue to allow the decision-making process to remain in the hands of the individual once he has attained an age where the likelihood of declining physical and mental condition increases daily. Also that age group is least dependent on the automobile for their livelihood. They have already secured their livelihood through their retirement programs or Social Security or savings. Obviously, any legislation in this area will target only those individuals who have the economic wherewithal to own and operate a motor vehicle.

In the view of the researcher, the initial responsibility for drafting legislation lies in the State Assembly and Senate traffic safety committees. The chair of either one of those committees should, in cooperation with lobbying groups and other interested individuals and organizations, work to produce legislation which will reasonably address the issue of elderly drivers and the examination process and procedures for the renewal of licenses.

COMMUNICATIONS: It will be the responsibility of interested groups and organizations, along with the news media, to adequately inform and educate the public on the concerns and problems posed by elderly drivers. We must also focus on the needs of the individuals as they must continue to function as members of our society. The communication effort from the various

professional organizations and private industry should focus on the fact that society has a responsibility to its older citizens to provide them the opportunity and the ability to move within our society, to do their banking, their shopping; to go to the doctor and seek what entertainment they have available and what recreational opportunities are open to them.

TRANSITION MANAGEMENT

THE CURRENT SITUATION: The state of California is just beginning to experience a demographic switch in the age distribution of its population which will have dramatic effects on the social, political and economic future of the Golden State. With respect to the futures of traffic safety, the leading edge of this demographic shift is already creating rippling effects. As an example, from 1974 to 1984 the fastest growing group of drivers was that group 70 years of age and older. (Refer to Figure 1 on page three.) When that fact is compared with the significant change in accident rates arrived at when one justifies the number of accidents to the miles driven for each age group, we can see that elderly drivers (those people 75 years and older) have the second highest accident rate of all age groups. It does not take a great deal of imagination to predict what these accident rates will mean in the future as our population continues to grow older. The largest segment of the population, those classified as "baby boomers," will not reach their 70s until the year 2016. All things considered it becomes evident that we as a society must do something. The question is what? Advancing technology in automobile equipping and design, highway signage and engineering, and educational efforts will all have some effect on enhancing traffic safety. However, with respect to the issue of elderly drivers the researcher feels that the far more effective and equitable way to approach the problem is by adjusting the regulatory environment to meet the demographic realities of the future. Current California Vehicle Code laws state plainly that age alone shall not be considered criteria for requiring a person to be retested. On the other hand, however, the Code prohibits persons over 70 years of age and older from having their license automatically renewed by mail.

TRANSITIONS: The regulatory situation of not requiring the mandatory re-testing of any age group should be moved from that position to one of recognizing the fact that persons 70 years of age and older belong to an age group that presents a higher accident risk due to failing physical and mental conditions. Care will have to be taken to ensure that these new laws and regulations are not discriminatory in that they do not prohibit all persons over 70 years of age from driving or require different standard tests for that age group. New laws must recognize that driving ability is an extremely individual thing--that a person 70 may not have the physical ability to drive, while another person in his/her mid-80s may drive as safely as anyone else on the roadway. The thrust of this transition plan is, therefore, to map out an appropriate policy/strategy for the State legislature and the Department of Motor Vehicles to take in driver's license renewal and examinations of persons in a high-risk age group.

APPROACH: 1. To spotlight the issue with a public information approach giving adequate coverage to all facets of the issue. This phase incorporates the news media and professional organizations and must be offered in a matter-of-fact approach which will not create a backlash effect or alienate senior-active groups.

2. The first regulatory effort should be to regulate those persons who do not represent a constituency to the California legislator, namely out-of-state drivers. Picking up on the approach to the issue that was used in the state of Florida, all individuals moving into the state of California should be required to take a complete driving test. This is perhaps the easiest piece of regulation to institute in that it

regulates those individuals that do not yet represent a constituency to our legislators.

3. To pass legislation which would require all drivers over 70 years of age to take a complete driving examination every 24 months, and to require all drivers over 80 years of age to take a full driver's examination every 12 months. It should also require that individuals over 80 years of age present a doctor's certificate certifying that they are mentally and physically able to operate an automobile. The law should take into account that all individuals throughout their driving history develop bad habits, and that as age progressively takes its toll on one's ability to operate a motor vehicle these bad habits can be compounded. Other jurisdictions have found that the use of driving schools will allow some drivers to correct these habits and, upon re-testing, successfully qualify for their driver's licenses.

CRITICAL MASS: In order to ensure that effective legislation regarding this issue successfully survives the political process, certain groups and individuals must be supportive of those legislative efforts. They have been identified in this report as:

1. Legislative traffic safety committees. After an individual legislator has been found to propose appropriate legislation regarding the issue of elderly drivers the traffic safety committees of the legislative bodies will have an opportunity to review that legislation, to gather statistical data and listen to testimony regarding the positives and negatives of the proposed legislation. Obviously, the support of those groups is mandatory or any legislative effort will die in committee at the end of the year. It is believed that the members of

the committee would be supportive of any legislative effort which was reasonable and effective, while not being over-regulatory or requiring great expenditures or significant budgetary impacts. The researcher suggests that this may be one stumbling block in the path to successful legislative efforts in that the Department of Motor Vehicles will obviously have to increase staffing, training and facilities to handle the additional work load imposed by the additional number of driver's examinations.

2. The Department of Motor Vehicles. The Department of Motor Vehicles, as suggested earlier, would act as a clearing house for statistical data and making recommendations to individual legislators and committees regarding the issue of elderly drivers and how best to regulate the renewal of driver's licenses. This organization will obviously be significantly impacted by any legislation which will increase the number of driving examinations they must administer. Here we must witness the Florida experience when the State Department of Driver's License Examinations saw a significant increase in the number of driver's license examinations administered by the passage of certain legislation. Certainly the managers and administrators of the Department of Motor Vehicles would not be in favor of any legislative effort which increased their workload without increasing their staffing. Before they would support such legislation they would have to be assured that the Legislature was willing to make an adequate financial commitment to their driver's license renewal and testing programs on a statewide basis.

3. A Speaker of the Assembly. As one who exercises great power and influence over the legislative process would have to be supportive of the proposed legislation, he would have his finger on the

political climate and be able to determine the pros and cons of votes on this issue and what it would mean for his particular political party and his individual status as a legislator.

4. Professional Organizations. Professional organizations, such as the Highway Patrol Officers' Association and C.P.O.A., have the ability to use their legislative committees and experience as lobbyists to expedite the proposed legislation. It is felt that professional law enforcement organizations will be very supportive of any measure which will enhance traffic safety in California.

5. Gubernatorial Administration. Clearly support from the Governor's office, regardless of which party happens to be in power at the time legislation is proposed, will be required for successful passage of any new regulations regarding license renewals. It is believed that the Governor will be supportive of any reasonable issue which enhances public safety without overly regulating any one group to the point of appearing discriminatory.

6. Senior Citizen Organizations. Organizations which are comprised of senior citizens, such as the American Association of Retired Persons or A.A.R.P., are included in the critical mass because it is felt that their support for any measure which regulates their ability to drive automobiles will, to some extent, be required. Again, these organizations are responsible and it is felt that they would be receptive to reasonable legislation which would, in fact, protect members of their own special interest groups.

An assessment of the level of commitment required of each of the individuals or groups included in the critical mass is as follows:

Make It Happen

Help It Happen

Let It Happen

Professional Organizations

Dept. of Motor Vehicles

Senior Citizen
Organizations

Legislative Committee

Governor

Speaker of the Assembly

Those individuals and organizations which make up the critical mass, as indicated in this report, will have concerns regarding the financial impact of any proposed legislation. To assist in clarifying this matter, I have enclosed a position paper on economic impact produced by Florida State Senator Jack Gordon. The impact on staffing of the Department of Motor Vehicles would obviously be significant. However, Florida has used some extremely creative methods of handling the excess work load. They have, outside of hiring an additional 80 examiners in July of 1985, extended the driver's license period for safe drivers from four years to six years. They implemented in November of 1984 a renewal system by mail for qualified safe drivers. They have opened two driver's license renewal stations in drug stores in Pinellas County as a pilot project which would be expanded to Dade, Broward and Hillsborough Counties, if they are successful. They have authorized high School driving education instructors to give driver's license examinations to their students. A further allotment of 78 clerks to be hired by April of 1986 has been approved for the Division of Driver's License Services and, lastly, the institution of a series of intensive management training courses for field supervisors. Those courses concentrate on attitude, communication and motivation of time management.

Senator Gordon's economic impact paper is included herewith as Exhibit D.

MANAGEMENT STRUCTURE: When discussing a plan that involves the proposal and passage of legislation, it is difficult to outline a management structure which would lend itself to the implementation of that plan. Whatever group or individual takes the initiative in seeking out a legislator, to write and introduce legislation will have to also take the initiative in managing the transition from one legislative or regulatory environment to another. It is felt that shared responsibility grouping, and small group tasking, would be a way to diversify some of the management tasks involved. Those tasks might range from drafting legislation and planning, and timing the introduction of that legislation, to coordinating media effort and lobbying actions on the part of other organizations. The different groups and interested individuals must maintain a liaison between them to monitor the progress and involve themselves in conflict resolution. In small group tasking members of the group should include representatives of the various members of the critical mass.

PLAN TECHNOLOGIES: The management structure could profit from the use of two particular management technologies. One would be responsibility charting. The participants in the management structure could use responsibility charting to identify major decisions concerning various areas of responsibility and the development of decision trees.

Another technology, which could also be utilized in concert with the first, is accountability charting. The accountability chart could be used as a tool for team building and to help members of the management structure, however loosely organized, to fully understand their roles

and responsibilities as they relate to other members of the group. It could be used to identify individuals who might be more profitably involved in other aspects of the plan or the decision-making process.

CONCLUSION: Short of some wild card event, or a quantum leap in genetic engineering or medical research, it appears as though the demographic future of California, with respect to its age distribution, is set. In the year 2000, and indeed by the year 2016 when the leading edge of the baby boomers turns 70, the age makeup and distribution silhouette of our society will present a far different picture than it does today. Clearly, most of these elderly people, whose entire lives have in some respect revolved around the use of the automobile as an individual method of rapid transportation, will continue to operate motor vehicles, and they will continue to operate those motor vehicles at a time when their physical and mental conditions are subject to a loss of acuity. Moreover, they are living at a time when the likelihood of sudden death increases. This group of older citizens will change the traffic safety picture in California unless some action to intervene is taken.

It appears to the researcher that the intervention with the highest likelihood of success and wide ranging impact is to change the regulatory environment as it relates to renewal of driver's licenses. While the fruits of the ever-increasing technological society we live in will, to some degree, mitigate the negative effects presented by an increasing number of elderly drivers, it will surely not be enough. Elderly people, who are possessed of the wisdom of long life, also have a high regard for authority. They most likely would discontinue driving voluntarily if they had failed a driver's test which was fairly and equitably

administered.

With regard to changing the regulatory environment in a situation where the number of elderly people in a society are increasing one thing is evident. The sooner the effort to change the legislation regarding driver's license renewal is made, the higher the likelihood of its success. As the number of people in the older age groups increases so does their political power as an effective lobbying group. The longer we wait to educate that public and begin to institute the legislative changes required, the more difficult the task. The researcher, therefore, urges serious consideration to drafting legislation similar to that instituted in other jurisdictions.

FOOTNOTES

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8. OP CIT, pg. 52.
9. AAA World, American Automobile Association, pg. 14, (September/October, 1985)
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27. District of Columbia Code 18-104.8.
28. Hawaii, R.S., Section 286-106.
29. Illinois Rev. Stat. 1984 Supp., Ch. 95½, Part 6-109.
30. Indiana Code, Section 9-1-4-38, 1983.
31. Iowa Code, Section 321-196.
32. L.S.A.- R.S., Section 32.412.
33. 29 M.R.S.A., Section 66-5-19.
34. N.H.R.S.A., Section 263.7.
35. N.M.S.A., Section 66-5-19.
36. R.I.G.L., Section 31-10-30.
37. Screening For Driver Limitation, U.S. Department of Transportation, National Highway Traffic Safety Administration, pg. 32 (1976).

By Senator Gordon

This publication was produced at an average cost of 1.5 cents per page for the information of members of the Legislature and the public.

1 A bill to be entitled
 2 An act relating to driver licenses; amending s.
 3 322.121, F.S.; requiring special reexamination
 4 upon renewal for drivers who are 70 years of
 5 age or older; amending s. 322.18, F.S.;
 6 providing for 4-year and 2-year original driver
 7 licenses for applicants in certain age
 8 categories; providing for 4-year and 2-year
 9 renewal licenses for drivers in certain age
 10 categories; amending s. 322.21, F.S.; providing
 11 for a lower fee for 4-year and 2-year renewals;
 12 providing for an additional fee for certain
 13 license renewals and extensions; providing an
 14 effective date.

15
16 Be It Enacted by the Legislature of the State of Florida:

17
18 Section 1. Section 322.121, Florida Statutes, as
19 amended by chapters 85-98 and 85-181, Laws of Florida, is
20 amended to read:

21 322.121 Periodic reexamination of all drivers.--
 22 ~~(1) -- It is the intent of the legislature that all~~
 23 ~~licensed drivers in Florida be reexamined upon renewal for the~~
 24 ~~purpose of testing eyesight, hearing, and, in certain cases,~~
 25 ~~ability to understand highway signs, regulating, warning, and~~
 26 ~~directing traffic. -- It is recognized that only a small~~
 27 ~~percentage of drivers in the state are categorized as problem~~
 28 ~~drivers. -- Therefore, upon renewal, the large number of drivers~~
 29 ~~who have had no convictions for the preceding 3 years shall be~~
 30 ~~processed expeditiously by examinations of their eyesight and~~
 31 ~~hearing only. -- All other licensees shall be tested, in~~

CODING: Words ~~stricken~~ are deletions; words underlined are additions.

Exhibit A

1 ~~addition-to-the-eyesight-and-hearing-examinations, with~~
 2 ~~respect-to-their-ability-to-read-and-understand-highway-signs~~
 3 ~~regulating, warning, and directing traffic.~~

4 (1)(2) Each licensee shall pass a reexamination at the
 5 time of renewal, except as otherwise provided in this chapter.
 6 The reexamination for each licensee, who has not reached his
 7 70th birthday, whose driving record reflects no convictions
 8 for the preceding 3 years, and who, at the time of renewal,
 9 presents a renewal certificate verifying such safe driving
 10 record shall be tests of the licensee's eyesight and hearing.
 11 For all other licensees, who have not reached their 70th
 12 birthday, in addition to the eyesight and hearing tests, the
 13 reexamination shall include the ability to read and understand
 14 highway signs regulating, warning, and directing traffic. The
 15 reexamination for each licensee who has reached his 70th
 16 birthday, whose driving record reflects no convictions for the
 17 preceding 3 years, and who, at the time of renewal, presents a
 18 renewal certificate verifying such safe driving record shall
 19 include, in addition to the vision and hearing examinations,
 20 an actual demonstration of ability to exercise ordinary and
 21 reasonable control in the operation of a motor vehicle. The
 22 reexamination for each licensee who has reached his 70th
 23 birthday and whose driving record reflects one or more
 24 convictions in the preceding 3 years shall include a vision
 25 and hearing examination, an actual demonstration of ability to
 26 exercise ordinary and reasonable control of a motor vehicle,
 27 and an examination determining the ability to read and
 28 understand highway signs regulating, warning, and directing
 29 traffic. Eyesight examinations shall be administered as
 30 provided in s. 322.12.
 31

1 ~~(2)(3)~~ No examination fee shall be assessed for
2 reexamination required by this section.

3 ~~(3)(4)~~ The reexamination requirement provisions of
4 this section shall not apply to members of the Armed Forces,
5 or their dependents residing with them, while serving on
6 active duty outside this state.

7 Section 2. Subsections (2), (4), and (8) of section
8 322.18, Florida Statutes, as amended by chapter 85-98, Laws of
9 Florida, are amended to read:

10 322.18 Original applications, licenses, and renewals;
11 expiration of licenses; delinquent licenses.--

12 (2) Each applicant who is entitled to the issuance of
13 a driver's license, as provided in this section, shall be
14 issued a driver's license, as follows:

15 (a) An applicant who has not reached his 66th birthday
16 applying for an original issuance shall be issued a driver's
17 license which expires at midnight on the licensee's birthday
18 which next occurs on or after the sixth anniversary of the
19 date of issue. An applicant who has reached his 66th birthday
20 but has not yet reached his 68th birthday shall be issued a
21 driver's license which expires at midnight on the licensee's
22 birthday which next occurs on or after the fourth anniversary
23 of the date of issue. An applicant who has reached his 68th
24 birthday shall be issued a driver's license which expires at
25 midnight on the licensee's birthday which next occurs on or
26 after the second anniversary of the date of issue.

27 (b) An applicant who has not reached his 66th birthday
28 applying for a renewal issuance shall be issued a driver's
29 license which expires at midnight on the licensee's birthday
30 which next occurs 4 years after the month of expiration of the
31 license being renewed, except that a driver whose driving

1 record reflects no convictions for the preceding 3 years shall
2 be issued a driver's license which expires at midnight on the
3 licensee's birthday which next occurs 6 years after the month
4 of expiration of the license being renewed. An applicant who
5 has reached his 66th birthday but has not yet reached his 68th
6 birthday shall be issued a renewal driver's license which
7 expires at midnight on the licensee's birthday which next
8 occurs 4 years after the month of expiration of the license
9 being renewed. An applicant who has reached his 68th birthday
10 shall be issued a renewal driver's license which expires at
11 midnight on the licensee's birthday which next occurs 2 years
12 after the month of expiration of the license being renewed.

13 (4) Except as otherwise provided in this chapter, all
14 licenses shall be renewable every 2 years, 4 years, or 6
15 years, depending upon the terms of issuance and shall be
16 issued upon application, payment of the fees required by s.
17 322.21, and successful passage of any required examination,
18 unless the department has reason to believe that the licensee
19 is no longer qualified to receive a license.

20 (8) To implement a 6-year license term for licensees
21 whose driving record reflects no convictions for the preceding
22 3 years, the department may issue a one-time 4-year license
23 extension by mail, without reexamination, for licenses which
24 expire between November 1, 1985, and October 31, 1989, except
25 that no license extension by mail shall be issued to any
26 person who has reached his 68th birthday or who will reach his
27 68th birthday between October 1, 1986 and October 31, 1989.

28 (a) If the department determines from its records that
29 the holder of a license about to expire is eligible for an
30 extension by mail pursuant to this subsection has no
31 convictions-for-the-preceding-3-years, the department shall

4

CODING: Words stricken are deletions; words underlined are additions.

1 mail a certificate of eligibility to the licensee at his last
2 known address, not less than 30 days prior to the licensee's
3 birthday. The licensee shall have the option of obtaining a
4 4-year license extension by mail or a 6-year license renewal
5 at a driver license examining station.

6 (b) Upon receipt of a properly completed certificate
7 of eligibility form and payment of a service fee of \$15, the
8 department shall mail a license extension sticker to the
9 licensee to affix to the expiring license as evidence that the
10 license term has been extended for 4 years.

11 (c) The department shall not issue more than one
12 license extension to a licensee. Upon expiration of the
13 license extension period, renewal with reexamination as
14 provided in s. 322.121 shall be required.

15 (d) A renewal applicant who has not reached his 66th
16 birthday and whose driving record reflects no convictions for
17 the preceding 3 years shall be issued a 6-year renewal license
18 upon payment of the fees required by s. 322.21 and passing the
19 required examinations if application is made at a driver
20 license examining station.

21 (e) Any person who knowingly possesses any forged,
22 stolen, fictitious, counterfeit, or unlawfully issued license
23 extension sticker, unless possession by such person has been
24 duly authorized by the department, is guilty of a misdemeanor
25 of the second degree, punishable as provided in s. 775.082 or
26 s. 775.083.

27 (f) The provisions of paragraphs (a), (b), (c), and
28 (d) shall expire on October 31, 1989, and paragraph (e) shall
29 expire on October 31, 1993.

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1 Section 3. Subsection (1) of section 322.21, Florida
 2 Statutes, as amended by chapter 85-98, Laws of Florida, is
 3 amended to read:

4 322.21 License fees; procedure for handling and
 5 collecting fees.--

6 (1) Except as otherwise provided herein, the fee for:

7 (a) The fee for a 2-year driver's license is \$7.50,
 8 the fee for a 4-year driver's license is \$10, and the fee for
 9 a 6-year driver's license is \$15; these fees ~~An original or~~
 10 ~~renewal driver's license is \$15, which shall~~ include the fee
 11 for driver education provided by s. 233.063.

12 (b) Authorization to operate a motorcycle or motor-
 13 driven cycle is \$4.

14 (c) The renewal of a license is the same as for its
 15 original issue set forth in paragraphs (a) and (b), except
 16 that a delinquent fee of \$1 shall be added for a renewal made
 17 not more than 12 months after the license expiration date,
 18 unless the applicant elects to take and passes the written
 19 examination.

20 (d) An initial driver's license issued by this state
 21 is \$4, in addition to the regular license fee.

22 (e) An additional fee of \$5 shall be assessed for a 4-
 23 year driver's license issued when the renewal applicant's
 24 driving record reflects one or more convictions during the
 25 preceding 3 years.

26 (f) An additional fee of \$5 shall be assessed for a 4-
 27 year driver's license issued pursuant to s. 322.13(8).

28 Section 4. This act shall take effect October 1, 1986.
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SENATE SUMMARY

Provides for the issuance of driver's licenses for a 4-year period for drivers who are 66 or 67 years of age. Provides for the issuance of driver's licenses for a 2-year period for drivers who are 68 or older. Requires drivers who are 70 or older to demonstrate the ability to safely operate a motor vehicle at each renewal of their driver's license. Sets a fee of \$10 for each 4-year renewal and \$7.50 for each 2-year renewal. Provides for an additional fee for certain 4-year renewal licenses and extended licenses.

CODING: Words ~~stricken~~ are deletions; words underlined are additions.

GEORGE FIRESTONE
Secretary of State
JIM SMITH
Attorney General
GERALD LEWIS
Comptroller

State of Florida

BOB GRAHAM
Governor

BILL GUNTER
Treasurer
DOYLE CONNER
Commissioner of Agriculture
RALPH D TURLINGTON
Commissioner of Education

Department of Highway Safety and Motor Vehicles

Neil Kirkman Building

LEONARD R. MELLON
Executive Director

Tallahassee, 32301

DIVISIONS

- FLORIDA HIGHWAY PATROL
Colonel Bobby R. Burkett, Director
- DRIVER LICENSES
C. W. Keith, Director
- MOTOR VEHICLES
Charles J. Brantley, Director
- ADMINISTRATIVE SERVICES
W. R. Kaufman, Director

RECEIVED
FEB 3 1986

January 31, 1986

SENATE TRANSPORTATION
COMMITTEE

TO: Mr. John Christensen ✓
Staff Director, Senate Transportation Committee

Mr. Bob Coggins
Staff Director, House Transportation Committee

FROM: C. W. Keith *CWK*

SUBJECT: Department's Position on SB 118 by Senator Jack Gordon

Since Senator Gordon's bill has been filed, the Department has received many letters, copies of newspaper items and etc., regarding the pros and the cons on this bill. For your information, we are enclosing a sample of our reply which is being used by personnel in our Headquarters when responding to individual's who express concerns over SB 118 which requires certain testing for drivers 70 years of age or older.

We are also providing a copy of this format to all of our personnel in the field who receive such inquiries locally so that they will be in a position to provide the same information in their replies. This format will, we feel, cover the great majority of questions that are asked regarding this subject.

CWK:kec
Enclosure

cc: Mr. Fred O. Dickinson, III
DL Executive Staff

Exhibit B

GEORGE FIRSTONE
Secretary of State
JIM SMITH
Attorney General
GERALD LEWIS
Comptroller

State of Florida

BOB GRAHAM
Governor

BILL GUNTER
Treasurer
DOYLE CONNER
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January 30, 1986

Mr. C. Eugene Searle
Chairman, Legislative Committee
AMERICAN ASSOCIATION OF RETIRED PERSONS
P. O. Box 6702
Vero Beach, Florida 32961

RECEIVED
FEB 3 1986

SENATE TRANSPORTATION
COMMITTEE

Dear Mr. Searle:

This is to thank you for your letter concerning Senator Jack Gordon's bill on the licensing of drivers 70 years of age or older. As you well know, Senate Bill 118 presents a number of controversial and emotional issues which will be addressed during the legislative process. In determining its position supporting this bill, the Department of Highway Safety and Motor Vehicles has considered a number of concerns, including:

- Contentions that requiring additional examinations based upon age alone is unfair and highly discriminatory. We believe that such a requirement is a reasonable and proper exercise of the State's regulatory authority and responsibility to preserve the safety and well-being of all its citizens.
- Contentions that the over 70 group is not "The Problem", since younger drivers have a higher rate of accident involvement. The National Highway Traffic Safety Administration reports that, although older drivers are involved in fewer accidents, their accident rate per miles actually driven is the highest of any group over 25 years of age. This would indicate that the safety record of older drivers is a result of less driving rather than safer driving. Moreover, there is evidence that the higher rate of accidents among older drivers is related to declining physical and perceptual

Mr. C. Eugene Searle
January 30, 1986

Page #2

abilities, while that of the younger driver is related to attitude--more aggressive, influenced by peers, less regard for risks, etc. While more rigorous screening would be an effective means of dealing with the factors behind older drivers' accidents, it would not be as effective for younger drivers.

- The argument that their years of experience make the elderly better, more knowledgeable, and safer drivers. Since January 1, 1985, we have been required to conduct a full driving examination on out-of-state drivers who obtain a first-time Florida driver license. From January to June 1985 while 19.8% of these drivers have failed our examination process, the examination failure rate for applicants 70-74 years of age was 32%; and 45% of applicants 75 and older could not pass our testing procedures.
- Some will feel that additional testing and more frequent renewals will present undue hardships to the elderly. We suggest that personal hardship must be weighed against the benefits to society.
- Some earnestly contend that the loss of the driver license curtails the independence and self-sufficiency of the elderly. While this may be true, testing does not necessarily mean loss of license. The only people who will lose their licenses are those who cannot meet the minimum vision standards or who have shown themselves to be incapable of operating a motor vehicle safely. Our examiners will continue to strive to ensure that the testing process will only lead to the loss of driving privileges by those who are incapable of driving safely. We do not intend the test to be more difficult, only that it be more complete and be required more frequently. I do not see the current procedure as unfair or discriminatory since the examiner and the supervisor must both agree that driving ability is questionable before testing is

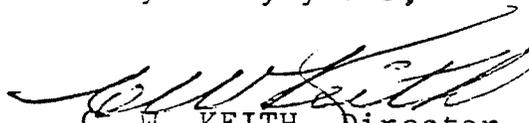
Mr. C. Eugene Searle
January 30, 1986

Page #3

required. We will continue to use current procedures in addition to Senate Bill 118. The Department recognizes that non-drivers need to maintain their mobility and, therefore, urges the Florida Legislature to address the need for better public transportation.

The Department of Highway Safety and Motor Vehicles favors any reasonable measure which would enhance safety on Florida's streets and highways. If the Legislature passes Senate Bill 118 and it becomes law, we will implement it to the best of our ability. If the bill does not pass, we will continue to require special examinations on an individual basis as warranted by the driver's record or questionable driving ability.

Very truly yours,



C. W. KEITH, Director
Division of Driver Licenses

CWK:kec

cc: Mr. B. W. Brinson
Mr. Richard A. Weaver



of the AMERICAN ASSOCIATION OF RETIRED PERSONS, Inc.

Vero Beach Chapter # 1406

P.O. Box 6702

Vero Beach, Florida 32961

December 9, 1985

Major C. W. Keith
Director of the Drivers
License Division,
Neil Kirkman Building
Tallahassee, Florida 32302

Dear Major Keith:

The Legislative Committee of the Vero Beach Chapter 1406/AARP received a letter dated November 12, 1985 from B.W. Brinson, an acquaintance of your who suggested we contact you concerning the attempt being made by Senator Jack Gordon of Miami of putting into law that Senior Citizens should be examined for a drivers license every two or four years.

The statistics on the percentage basis published in the local news paper showed the younger age group had more accidents than the over 65 age group and our Committee feels that if Senator Jack Gordon gets his way of older drivers being tested every two or four years that he is discriminating against older drivers and we agree with Mr. Brinson 100% that this is a foolish idea.

The Legislative Committee of the Vero Beach Chapter 1406/AARP will do all they can to help our over age 65 group.

As an example, making a survey of the accidents listed in the Press-Journal on November 29, 1985, there were 20 accidents where persons were under the age 65 group and only six over age 65 group were involved in accidents.

Also enclosing a copy of our News Bulletin that is sent to approximately 2000 members of the chapter with Legislative news.

Sincerely,

C. Eugene Searle, Chairman, Legislative
Committee *eo*

CES/io

cc: B.W. Brinson
P.O. Box 3571
Vero Beach, Florida 32964
C.E. Searle
File

113

Exhibit C

REVISED: _____

SB 118

DATE: December 30, 1985

Page 1

SENATE STAFF ANALYSIS AND ECONOMIC IMPACT STATEMENT

<u>ANALYST</u>	<u>STAFF DIRECTOR</u>	<u>REFERENCE</u>	<u>ACTION</u>
1. Mohler <i>DM</i>	Christensen <i>[Signature]</i>	1. <u>TR</u>	_____
2. _____	_____	2. <u>FT&C</u>	_____
3. _____	_____	3. <u>AP</u>	_____

SUBJECT:

Driver Licenses/
70 Years of Age

BILL NO. AND SPONSOR:

SB 118 by
Senator Gordon

I. SUMMARY:

A. Present Situation:

Section 322.121, F.S., as amended by Chapter Law 85-98, requires that all licensed drivers, other than members of the armed forces currently serving on active duty outside the state and their dependents residing with them, shall be tested upon renewal. Most drivers need only be tested as to vision and hearing ability. However, those drivers who have had one or more traffic convictions within the preceding 3 years are also tested regarding their knowledge of various highway signs regulating, warning, and directing traffic.

Section 322.18, F.S., as amended by C.L. 85-98, provides for the issuance of a 6-year license to all original applicants. Applicants seeking to renew their licenses receive differing treatment depending upon their prior driving history. Upon satisfactory completion of the vision and hearing exam, the majority of drivers, those with no convictions for the preceding 3 years, are entitled to a 6-year license. For those drivers who do have one or more convictions in the preceding 3 years, a written exam testing the applicant's knowledge of traffic signs must also be taken. Upon satisfactory completion of all tests (vision, hearing, and written), the applicant for renewal is issued a 4-year license.

Exhibit D

In order to implement the change over to a 6-year license, a one-time 4-year license extension by mail was provided for licenses that are due to expire between November 1, 1985, and October 31, 1989. If the Department of Highway Safety and Motor Vehicles (DHSMV) determines that the holder of a license about to expire has no convictions for the preceding 3 years prior to the date of renewal, then not less than 30 days prior to the licensee's birthday, the department shall mail a certificate of eligibility to the licensee. The licensee then has the option of going through the usual renewal procedure and receiving a 6-year license or of waiving the exam and receiving a 4-year license in the mail. The renewal fee is the same regardless of which option is chosen.

Section 322.21, F.S., as amended by C.L. 85-98, provides a fee schedule for the issuance of licenses. Initial applicants must pay a fee of \$19, while renewal applicants pay a fee of only \$15, plus any applicable delinquent fees.

B. Effect of Proposed Changes:

The bill provides special testing procedures for drivers who are 70 years of age or older.

An applicant who is 70 years of age or older and whose driving record contains no convictions for the preceding 3 years, in addition to the vision and hearing exam, would be required to demonstrate his ability to exercise ordinary and reasonable control of a motor vehicle. Upon satisfactory completion of these tests, the applicant would be issued a driver's license that is valid for two years. The fee for such a license would be 7.50.

An applicant who is 70 years of age or older and whose driving record contains one or more convictions in the preceding 3 years would be required to take a vision and hearing exam and a written test concerning his ability to read and understand traffic signs, and to demonstrate his ability to exercise ordinary and reasonable control of a motor vehicle. Upon satisfactory completion of these tests, the applicant would be issued a 2-year license. The cost of this license would be 7.50.

In order to phase in this program, an applicant who is either 66 or 67 upon renewal will be issued a 4-year license costing \$10.00 (assuming no convictions in the previous 3 years prior to renewal). An applicant who is either 68 or 69 upon renewal will be issued a 2-year license costing \$7.50. However, there will be no driving demonstration required until the age of 70.

II. ECONOMIC IMPACT AND FISCAL NOTE:

A. Public:

None.

B. Government:

The DHSMV estimates that the cost to administer the provisions of the bill is as follows:

	<u>1986 - 87</u>	<u>1987 - 88</u>	<u>1988 - 89</u>	<u>1989 - 90</u>
Salaries	\$800,006	\$ 981,746	\$2,162,624	\$3,070,892
Expenses	65,256	82,117	183,439	267,637
OCO	43,533	9,700	64,938	50,388
Total	\$908,795	\$1,073,563	\$2,411,001	\$3,388,917
# Positions	44	54	120	171

The department estimates that the decrease/increase in revenues to the General Revenue Fund will be:

<u>1986 - 87</u>	<u>1987 - 88</u>	<u>1988 - 89</u>	<u>1989 - 90</u>
(\$1,200,010)	(\$2,208,615)	(\$1,492,095)	\$3,406,878

III. COMMENTS:

None.

IV. AMENDMENTS:

None.