

## PUBLIC SAFETY

# Crash Research Saves Lives

**Seat belts, crash helmets, rubber bumpers and more padding are prime safety features aimed to match the speed and power of the nation's leading killer, automobiles.**

► SEAT BELTS and automobile crash equipment that have protected race car drivers for years are gaining public popularity. Their use is slowing the slaughter on our national highways and city streets.

Crash helmets, shoulder harnesses and seat belts, electronic highways, safety-designed cars and even luminescent roads and cushioned roadsides are being advocated while death and injuries from traffic accidents mount at a rapid pace.

In 1961, 38,000 persons lost their lives and 1.4 million were disabled in traffic accidents, according to the National Safety Council. More than \$6.9 billion was lost in smash-ups.

Although auto accidents continue to kill more Americans each year than died in all past wars, the chances of surviving a highway crash are improving because of car designs and the modern safety devices now used, leading safety experts and physicians believe.

## Fixture in American Cars

The seat belt, leading champion of the safety devices, has become a fixture in the American car. Although the seat belt has been around since the very beginning of aviation and has kept deaths and injuries at a low on international race courses, the 1962 automobiles are the first conventional American cars to provide a standard anchoring point for these life preservers. The belts themselves are still optional.

Now, with the acceptance of belts, safety experts are asking that drivers go one step farther and use the "new" shoulder harness or lap-and-shoulder-belt combination.

Death toll reduction is not enough, researchers point out. Hideous facial injuries, which can occur even with the seat belts, can also be substantially reduced with a harness similar to those used by today's pilots, they say.

Of the millions of injuries from automobile accidents each year, nearly 75 per cent are eye and facial nerve injuries received by ramming into the windshield.

Other experts are advocating crash helmets for both motorcycle riders and automobile occupants. The British Government decided this summer to seek powers to force all riders of motorcycles to wear helmets. One London pathologist is even suggesting that all pedestrians (including women) wear derby hats to protect their heads in case "they are run down by vehicles."

Cars, too, are becoming more safety-proof, even though the emphasis is now on speed and horsepower. Cars' interiors are becoming less and less knobby in many of the newer models. Dashboards are padded and rounded and farther away from the

driver. The radio dials, shifting levers, door handles and horn buttons are being suppressed and reduced, hidden by smooth walls or tucked into the dashboard and door. The steering column has been receiving much attention, with the break-away wheel and collapsible column now appearing on the market.

Head supports for driver and other front seat occupants are cutting down on neck whiplash injuries from rear-end collisions, and rear-facing passenger seats are being tested in "safety cars" of the larger manufacturers. Padded doors, floors, visors and even mirrors can reduce puncture-type wounds normally a result of a crash, physicians note.

Some suggestions are extreme, however, requesting that automobiles be made of foam rubber or lined with a rubber bumper to protect the occupants as well as the pedestrian.

Although it is doubtful that Americans will see the rubber car, the Federal Government has granted several institutions money to build an auto "completely designed for safety."

Stronger top braces are being added to cars for protection during roll-over. Better safety glass is being introduced. Non-skid tires, sway bars, heavy duty mountings for the engine and safer latches for seats, hoods,

doors and even ash trays are being developed.

Excess power which must go unused because of modern speed laws is being channeled into steering and brakes and movements of seats which, in turn, relieves the driver from fatigue, thus eliminating potential accidents.

Drivers of the future cruising along the nation's highways may be startled by special warnings broadcast over the conventional radio saying:

"Warning! Dangerous curve 100 feet ahead" or "Emergency northbound US-12. Single lane traffic ahead."

Electronic boxes or wires along the roadside or down the dividing line could relay impulses to coils on the car bumper which would flash a warning to drivers who doze or are distracted and veer off the road or into the wrong lane.

Fully electronic highways—on which drivers will be able to sleep, watch television or read while traveling at prescribed speeds—will also become a reality in the foreseeable future. Guided by a traffic center supervised by television circuits, cars equipped with the automatic driving robots will be set to travel these future highways and enter and exit with a navigator who sees all of the cars at once. All vehicles will travel the same safe speed and stay in the correct lanes to maneuver in and out of the desired towns without danger to others. Test systems are already in operation in several states.

Cornell University's auto research teams have shown that older model automobiles



Fremont Davis

**MANIKIN TO MAN—Automobile safety research continues to find the best methods and equipment to control the great loss of lives claimed by highway mania.**

are involved in the largest percentage of accidents. The newer the model, the fewer the accidents.

The instrument panel is the greatest cause of injuries during all crashes, they also found. It is followed closely by the steering assembly. The windshield, door structures and ejection account for somewhat fewer injuries.

Studies by research institutes have shown that persons using seat belts are 35 per cent to 60 per cent safer than those unprotected. Cornell University scientists estimate that belts, if widely used by the motoring public, could save 5,000 lives each year.

In many ways, the National Safety Council points out, the human body is remarkably durable. It can survive far greater jolts than are experienced in most auto crashes.

Col. John P. Stapp, director of the Air Force Aero Medical Field Laboratory near San Antonio, has subjected himself to crash stops from 632 miles an hour to zero in 1.4 seconds. He suffered no disabilities since he wore a safety belt.

The use of seat belts tripled in 1961. The figure will be even higher in 1962 with the added ease and lowered cost of installation designed into this year's cars.

Built-in seat belt anchorage points are reinforced to meet safety requirements and are permanently welded to the underside of the floor. Rigid tests have shown that in most cases of seat belt failure, the weakest link is at the anchorage point. The factory-installed structures will limit even further the possibility of death and injury when seat belts are used.

Besides the manufacturers and the Safety Council, seat belts are backed by the American Society of Safety Engineers, the U.S. Public Health Service, and the American

Medical Association among others. Physicians, particularly, are convinced of the value of seat belts, according to the AMA. A recent survey of doctors showed that 33 per cent are actually using them.

Roy Campanella, star catcher of the Los Angeles Dodgers, is perhaps one of the most outspoken advocates of the belts. In January, 1958, his car skidded on a wet pavement at 30 miles an hour and hit a pole. His injuries left him paralyzed from the shoulders down. One year later Campy was again in an auto accident, this time wearing a seat belt. Although three other passengers who were not wearing the belts were injured, Campy was unscratched.

Research on seat belts and other safety devices continues at centers like Cornell University and the University of California, Los Angeles. Automobile accidents occur on schedule at these research laboratories, without a single "living" fatality. The deaths are recorded by life-like manikins that cost up to \$7,000.

These anthropometric dummies are rigged with hundreds of dollars of testing equipment and sent crashing down an obstacle course in automobiles donated by the auto industry.

The U.S. Public Health Service has been supporting research for several years in traffic safety.

These studies have ironed out or suggested the changes in automobiles that have been incorporated into the newer models to reduce danger. They have shown the adverse effects of alcohol and drugs on good driving, the need for wider vision, the need of crash helmets and seat belts and the aid of luminescent road markings or painted roads and soft crash barriers, such as hedges, along the road.

• Science News Letter, 82:242 October 13, 1962

## MEDICINE

# Doctors Are Reading—

## Lung Disease Detection

► CHRONIC LUNG diseases should be suspected among young as well as older pneumonia patients, physicians are reading in the *Journal of the American Medical Association*, 181:1135, 1962.

A three-year study by Lt. Col. Theodore Bacharach and Maj. Harold S. Nelson at Letterman General Hospital, San Francisco, involving 234 pneumonia patients, showed a history of previous pulmonary disease in 39 per cent under the age of 40 and 53 per cent in those over 40. In cases of pneumonia, doctors are advised to investigate whether this points to early stages of chronic pulmonary disease.

## Dangerous Assurances

Patients should not be guaranteed results of surgery, such as, promises that a surgical operation on the ear for "stapes mobilization" would make hearing no worse, R. P. Bergen, of the AMA Law Department, warned. He advised doctors to use consent forms signed by patients saying no guarantees or assurances of results of operations had been given (p. 1114).

## Skiing Hazards

Dangers from skiing are not confined to broken legs. High altitude can cause a transient constriction of the minute veins of the lung, the leading JAMA editorial pointed out, calling attention to the near death of two physicians skiing above 6,000 feet (p. 1130). Oxygen and bed rest gave relief in the condition, which also affects natives of high altitudes returning from sea-level visits.

## Right to Die?

It is neither scientific nor humane to keep a patient alive when death is imminent and living is painful, Dr. Frank J. Ayd Jr., chief of psychiatry, Franklin Square Hospital, Baltimore, concluded in a report on the hopeless case (p. 1099). Scientific weapons for the "prolongation of agony" deny the dignity of man and his right to live and die peacefully, he believes.

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The principle of *thermoelectricity* dates back to 1821.

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