

## PUBLIC SAFETY

# Motoring Safety Rule

Items on rear shelf of automobile can become lethal weapons on sudden deceleration, tests show. Engineers recommend its elimination in future cars.

► ENGINEERS AIMED a 1952 automobile sedan down a rain-soaked Municipal Airport runway at Portsmouth, N.H., got it rolling 55 miles an hour and crashed it headlong into a string of four cars lined bumper-to-bumper across the strip. This is what happened:

Heavy objects on the shelf under the back window became death-dealing shrapnel, just as savage as the battlefield variety. A quart-sized can of motor oil sailed forward, fracturing the driver's skull. A piece of chalk ricocheted from the back-window shelf to the driver's sun visor, bouncing back to the rear seat and finally to the floor. A 14-year-old girl was thrown under the dashboard, receiving a fractured hip, a broken knee and instep, a dislocated left shoulder but no injuries to the head.

Actually, no humans were injured in the crash. The "driver" was a piece of iron standing upright in the driver's seat, and the 14-year-old "girl" was represented by a dummy of the proper proportions.

But the engineers concluded that at least those injuries would have been sustained had the car crashed under the same circumstances with human occupants.

A. J. White, director of Motor Vehicles Research, Inc., Boston, warns drivers to keep the rear shelf of their cars free of all objects.

"Any items carried on the rear ledge of a car would become lethal shrapnel in case of a crash deceleration or even in a panic stop by application of brakes," he said.

The research group furthermore called upon design engineers to eliminate the back-window shelf in future cars to increase motoring safety.

They also pointed out that practically all automobile seat anchors should be strengthened. Under the impact of the collision, the seat anchors in the test car were strained by the weight of the seat alone. Had anyone been sitting on the seat, the supports probably would have snapped.

The test car was driven by a research engineer until he put it into high gear at about 15 miles an hour. Then the driver got into another car moving alongside the test vehicle. By remote control the test car was guided into the string of autos.

It rammed into the rear bumper of car number two, knocking that car so that it faced toward the direction from which the test car had come. Almost at the same instant, the crash car struck the left front wheel of car number three. Then the crash car's rear end swung around, slamming into the broadside of car number three and knocking that car 52 feet. The crash car lumbered another 92 feet before stopping.

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He pointed out areas in the United States believed by petroleum geologists to contain oil but which as yet have not been explored by drilling. It is only by drilling that the presence of deep oil can be proved.

Science News Letter, November 22, 1952

## PHYSIOLOGY

## New Hearing Theory: Ear Like Microphone

► A NEW theory of hearing was proposed by Drs. Hallowell Davis and Ichiji Tasaki of the Central Institute for the Deaf, St. Louis, at the National Academy of Sciences meeting in that city.

Within the ear there is an organ which these scientists compared to the carbon microphone circuit familiarly used in telephones and radios. In the carbon microphone circuit, a change of resistance in the microphone modulates the flow of direct current from a battery through a well-defined circuit.

In the ear, the nerve endings on the sensory cells for hearing are part of this circuit and can be stimulated by changes in the current flowing through them.

The sense organ for hearing, according to this theory, does not merely transmit the energy of the stimulus. The stimulus controls the release of additional energy from an especially available source.

Science News Letter, November 22, 1952

## SOCIOLOGY

## Births, Not Deaths, Now Control Population

► BIRTHS RATHER than deaths now control the composition of population and human evolution among western peoples, Frederick Osborn, population authority of New York City, told the American Philosophical Society meeting in Philadelphia.

Less than a century ago, before modern medicine and birth control, there were large families, life expectation was half what it is now, and a substantial proportion of the children died before they themselves had children. Deaths ruled the peopling of the earth.

Now man's future is no longer in the hands of blind forces, Mr. Osborn finds, because, "consciously or unconsciously, individual couples under the influence of the psychological environment reacting with their personal predilections, will determine which strains will survive."

The reduction in births now is the result of contraception rather than of reduced fecundity, studies have indicated. Age at marriage is a major factor in size of family. With uneven use of contraception in large groups, the lower the economic status, the larger the family. In groups where everyone uses contraceptives carefully, the higher the economic status, the larger the family, but there are so few large families that the birth rate is below that needed for replacement.

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## NATURAL RESOURCES

# Crude Oil Sufficient

► THERE IS plenty of petroleum within the United States to meet all requirements for many years to come, it was predicted at the meeting of the American Petroleum Institute in Chicago. The prediction was made in the light of present proved reserves, probable reserves and the rapidly growing demand for liquid fuels.

"It is my firm conviction that the domestic oil industry can supply sufficient oil to meet all of our needs for the foreseeable future," declared John E. Swearingen, manager of production of the Indiana Standard Oil Company.

He presented an analysis of the probable availability of crude oil and natural-gas liquids during the next 15 years. The probable demands for the same period were presented by John W. Boatwright, manager of distribution economics for the same company.

In considering these predictions, Mr. Swearingen stated, it should be kept in

mind that geologists in the United States and Canada have been very successful in finding new oil fields during the past two or three years. This is responsible for their confidence in their continued ability to find oil.

Pointed out among relatively recent discoveries were the oil fields of west Texas, the Gulf Coast, Alberta, Canada, and Nebraska, Colorado and Utah. Perhaps most important of all, he said, is a major new oil province in the Williston Basin, North Dakota. The outlook today, he indicated, is brighter than it was five years ago. "We feel that domestic production of crude oil will continue to increase over the period we have considered." He added, "We shall be finding oil faster than we shall be using it."

American oil industry by 1967 will be producing about 8,000,000 barrels per day of crude oil and 1,100,000 barrels per day of natural-gas liquids, an increase of about 33% over today's production, he stated.