

AERONAUTICS

Dispute Rear-Facing Seats

► THE DISPUTED question of whether airplane passengers in rear-facing seats are less likely to be injured in case of a crash than those in conventional front-facing seats is still unsettled.

Pros and cons are discussed in a bulletin issued by Cornell Medical College, New York. The report is by Dr. Hugh De Haven, director of the college's crash injury research. This organization investigates crashes and the causes of injuries and fatalities in survivable accidents.

These are crashes in which there are survivors, or in which there might have been if proper safety equipment had been available.

The conclusions reached are that forward-facing seats and secure tie-down for proper safety belts should give high degree protection in civil transports, up to the point where flooring and surrounding cabin structures are destroyed.

Enough actual crashes of planes with rearward-facing seats have not been investigated to provide sufficient information on the protective values of various types now in use. The principal use of rear-facing seats is in military planes.

Those maintaining that rear-facing seats are protection against injury when a plane makes a quick stop in a crash landing, base their conclusion on the fact that the whole body, including the head, has the back of the seat to absorb the shock.

In a similar crash with front-facing seats and the usual type of safety belt, the body is thrown forward at an accelerated speed from the position of the belt upward, an action that may result in internal injury or injury to the head if it strikes the seat in front.

"With regard to design concepts for rearward facing seats," the report states, "it should be recognized that, as a rule, the force of crash is anything but directly forward. Often, in transport accidents which are survivable, there are conditions of bouncing, tumbling, cart-wheeling and sliding—sometimes inverted, sometimes on one side and sometimes going backward. Therefore, most of the safety considerations which pertain to the back-rests of forward-facing seats should be included in the design of back-rests for rearward-facing seats."

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soil scientists, animal and dairy specialists and agricultural economists and depends on sufficient helping hands and supporting funds to work effectively. The problems they solve "should head off troubles before farmers have to meet and pay for them," Dr. Moseman said.

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MAMMALOGY

Age Told by Layers In Elephant Seal Teeth

► THERE ARE better tests of age than looking a gift mammal in the mouth. In fact, going into the mouth, yanking out a tooth and making a cross section of it may provide an exact measurement of the age of some mammals.

Experiments with the permanent canine teeth of elephant seals have shown that it is possible to determine age to within a month, up to age 20 in the male and age 13 in the female. A superficial examination of other mammals, living and fossil, indicates that the same kind of test might be used on them.

Periods of fasting, molting and breeding during the annual cycle of the elephant seal produce concentric rings in the canine teeth. By counting these rings, the age may be determined.

The experiments were carried out by R. M. Laws of Cambridge University's department of zoology and reported in the British scientific journal NATURE (June 7).

Science News Letter, July 12, 1952

AGRONOMY

7,000 More Each Day

► BY 1975, it is estimated that there will be 34,000,000 more people in the United States who will want to be as well fed and clothed as we are today.

"There will be about 7,000 more persons for breakfast tomorrow morning in the United States than we had this morning," Dr. A. H. Moseman, chief of the Bureau of Plant Industry, Soils and Agricultural Engineering, U. S. Department of Agriculture, said at the dedication of the new Agronomy Building at the University of Nebraska, Lincoln, Neb.

To meet the demands of our increasing

population, it is necessary to explore every phase of soil-plant-fertilizer-moisture relationships and to develop new varieties of crops to meet the demands of increased mechanization on the farm and the decreasing numbers of agricultural workers.

"Corn lands will have to yield about 20% more per acre in 1975 than they yield today," Dr. Moseman continued. The cotton breeders must improve the crops to compete with synthetic fiber manufacture. Sugar beets must be converted to meet the demands of mechanization and to resist storage rot. Scientists are engaged in an active campaign to design crops that are resistant to diseases, insects and chemicals used in weed and pest control.

With rapid change-over to new varieties of plants, a new disease can become menacing in a shorter time than previously. Studies abroad enable us to combat diseases before they reach the United States.

It is necessary to find ways of reversing the process of the decline in nitrogen and organic matter content in the soil. The increased use of fertilizers, soil conditioners, herbicides, and antibiotics on the farm has been a productivity booster, but we are still lagging in our understanding of these agents' effects on soil and crops.

Research on the food problem today involves teams of agronomists, entomologists, plant pathologists, agricultural engineers,



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