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SPACE

G-Forces Affect Brain

► TREMENDOUS vibrations and g-forces of rocket boosters may cause astronauts to become temporary epileptics under certain conditions.

This is suggested in studies at the University of California, Los Angeles, Brain Research Institute.

The investigation was part of the space biology program being carried out at the UCLA Medical Center with the support of the U.S. Air Force and U.S. Public Health Service. Collaborating in the study were Dr. Ross Adey, Dr. John French, Raymond Kado, David Lindsley, D. O. Walter, Dr. Richard Wendt and Dr. W. D. Winters.

Monkeys and other experimental animals were subjected to acceleration and vibrational effects during centrifuge and shaker apparatus experiments. These effects are comparable to those of rocket booster forces.

Deep brain wave recordings of the animals were made during the experiments

with a special transistorized electrocardiogram unit designed for satellite biopacks. The recordings showed erratic electrical discharges from the temporal lobe area of the brain characteristic of epileptic seizures.

It was suggested that the extreme vibrations "drive" the normal rhythms of the brain to abnormal discharges. The effect is probably only a temporary one, Dr. Adey said, but it could prove critical in an astronaut's performance in space.

Such seizures may not be apparent on a television monitor, Dr. Adey points out. They are characterized by a sudden interruption of the stream of consciousness. Epileptics frequently have these seizures without obvious signs.

Centrifuge studies were carried out in the University of Southern California's human centrifuge facility and the American Testing Laboratory's shaker apparatus.

• Science News Letter, 80:286 October 28, 1961

INVENTION

Patents of the Week

► THE INVENTION of a split-level station wagon may make matching homes and cars the latest fashion in suburban living.

The wagon, awarded patent No. 3,003,808, features an "easily accessible" raised compartment for passengers, with seats that can open out into a bed. Travelers reach the compartment by walking through rear side doors located on the first level, then stepping onto a deck that forms the second-level floor.

Baggage may be stored between the deck and the first-level floor, as well as in a compartment located behind the rear wheels. Inventor John H. Swanberg of Minneapolis, Minn., said that a conventional station wagon, when carrying a full load of passengers, must store luggage on an exterior top rack, thus raising the center of gravity and making the wagon harder to control. The split-level design provides ample space inside.

Among the other advantages claimed for this two-level traveler is a "superior view of the scenery" for passengers occupying the upper level. Observation windows and windshields, located in the passenger compartment, also offer excellent visibility.

Perhaps the wagon's most attractive feature is its capacity to segregate the driver from chatty passengers, to avoid distractions and to do away with back-seat driving.

A device to protect split-level station wagons or any other car from theft was invented by Arnold Greenspan of Newark, N.J. He was awarded patent No. 3,004,170 for a connection device "capable of economical installation in existing vehicles of a wide variety of makes and models."

Various essential parts of the car's electrical system are plugged into the device, which consists primarily of a removable plug, necessary for establishing the required connections. Without the plug—or a dia-

gram and complete knowledge of the theft-protection system—no unauthorized person would be able to use the car.

Patent No. 3,003,873 was issued to Vladimir K. Zworykin, Princeton, N.J., who invented an improved method of manufacturing color-kinescopes. The radio-television pioneer assigned the rights to the Radio Corporation of America.

An emergency power system for submarines was patented by Shelton M. Gay Jr., Vienna, Va. Rights of patent No. 3,003,448 were assigned to PneumoDynamics Corporation, Cleveland, Ohio. High water pressure due to the submarine's depth pushes sea water through various inlets driving a hydraulic motor. The water is exhausted into water-tight compartments within the sub.

The emergency power system would be used while repairs are being made or to operate an escape mechanism.

Underground water can be traced by using thiocyanate ions, according to John L. Boyd, Tulsa, Okla. Mr. Boyd was awarded patent No. 3,003,856 for his invention, assigned to Sinclair Oil & Gas Company, also of Tulsa.

• Science News Letter, 80:286 October 28, 1961

DENTISTRY

Tooth With Lost Nerve Should Serve for Years

► A TOOTH that has lost its nerve need not be pulled from a person's mouth, the American Dental Association in Philadelphia was told.

Extraction of a tooth because a nerve is diseased will not be necessary in the future, Dr. Milton Siskin of Memphis, Tenn., said. If the nerve or pulp is completely removed and the inside of the tooth is sterilized, the tooth should last as long as any other. The dentists call this "endodontics."

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