

AERONAUTICS

Advise Pilots to Use Life-Saving Turn

► "TURN TAIL and run." This is the advice that the University of Illinois is now handing private pilots who tangle with bad weather.

About 1,000 pilots a year lose their lives when trapped in bad weather. Untrained in instrument flying, they go into a "graveyard spin" or a series of to-and-fro oscillations that dash the plane to the ground or rip it apart.

Backed by the Aircraft Owners and Pilots Association Foundation, researchers at the university's Institute of Aviation have worked out a 180-degree turn designed to get the distressed pilot back to the safety of clear skies. Only an inexpensive turn indicator need be added to the plane.

The controls are set so the plane "flies itself" while the pilot watches the turn indicator and the compass. Then, using only the rudder, the pilot turns his plane completely about and flies out of the storm.

Worked out by Prof. Leslie A. Bryan, director of the Institute of Aviation, Jesse W. Stonecipher, chief flight instructor, and Karl Aron, flight instructor, the method is described in the Institute's Aeronautics Bulletin No. 11.

The first thing a pilot taking the course learns is that he cannot fly "blind" without training, Prof. Bryan said. Nineteen of the first 20 to try went into a graveyard spin in less than three minutes. Instructors rescued man and craft, but the experience had made all pilots eager to learn how to keep out of such situations.

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PUBLIC HEALTH

DDT Eaten in Every Meal But Amount Won't Harm

► WE EAT some DDT in every meal and store it in our body fat but the amounts are too small to cause any damage.

Studies showing this were reported by Dr. Wayland J. Hayes Jr., of the Public Health Service's Communicable Disease Center, Savannah, Ga., at the meeting in Buffalo, N. Y., of the American Public Health Association.

Restaurant meals and meals in an institution have recently been analyzed for DDT content. The most popular breakfast, lunch and supper offered each day by each restaurant were chosen. Extremely expensive and specialty items were avoided. In each instance a complete, balanced meal was analyzed.

"No meal was found, either in the restaurants or in the institution, which failed to contain some DDT, although some individual food items in the meals were regularly free of the compound," Dr. Hayes stated. "Fatty foods, or foods cooked in fat, tended to contain more DDT than other foods."

An experiment now under way with human volunteers, Dr. Hayes said, shows

dosages as high as five-tenths of a milligram per kilogram of body weight can be taken daily for several months without producing any adverse effect which the person eating this can detect or which can be discovered by laboratory or physical examination.

This is about 200 times the average total amount the average sized man would get in breakfast plus lunch plus supper in the meals analyzed.

"The greatest recent advances in our knowledge of DDT," Dr. Hayes said, "are those which define the current exposure and the magnitude of tolerable dosages involving this compound which has contributed so significantly to public health and to agriculture. This quantitative information based on human rather than animal exposure should do much to satisfy any reasonable doubts about the safety of DDT."

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ENGINEERING

Low Voltage Can Harm Household Machines

► DAMAGE TO refrigerator, home freezer and electric motors in other equipment may occur when trouble on the electric utility's system causes voltage to drop to 85% and frequency to fall from 60 to 53 cycles for as long as 45 seconds.

This finding of the Oregon State College was described in Chicago before the American Institute of Electrical Engineers by J. O. Swanson of the Bonneville Power Administration at Vancouver, Wash., and J. P. Jolliffe of the same Administration at Portland, Ore.

The engineers said the Northwest Power Pool plan provides for such emergencies. When lightning or other mishaps afflict the power system to bring on the bad conditions, the electric utility cuts off load to prevent damage to customers' equipment. When the system has been made stable again at proper voltage and frequency, the load is picked up.

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VETERINARY MEDICINE

Vitamin-Hormone Drug Checks Distemper in Dogs

► DISTEMPER IN dogs can be checked by a drug that combines a massive dose of anti-anemia vitamin B-12 and the anti-arthritis pituitary gland hormone, ACTH.

This good news for dog owners appears in an announcement from the Armour Veterinary Laboratories, Chicago.

No one knows yet why this vitamin-hormone combination works. Studies are now under way to find this out. However, in tests on more than 600 dogs, the drug has stopped distemper in its course, in most cases, both in the acute stage and in the late, usually fatal, spinal cord complications.

The formula, devised by the Armour staff, has been named ACB-12, and is now going on the market to licensed veterinarians.

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IN SCIENCE

ENGINEERING

For Cooler Rooms, Use Glass Blocks

► ROOMS RECEIVING daylight through glass bricks are cooler than those with flat glass windows, provided the rooms are unventilated, tests at the Texas Engineering Experiment Station, College Station, Texas, have shown.

If the room is adequately ventilated, temperature differences are too small to be of practical importance.

The work was conducted by Dr. E. G. Smith in a full-scale building used in other architectural experiments. He divided the building into two equal rooms by means of a partition so that tests of the two fenestrations could be conducted under exactly similar conditions, especially with regard to exposure to the sun.

His findings revealed that the flat glass windows transmit and trap within the room more solar radiation than do glass block windows.

Science News Letter, November 6, 1954

MEDICINE

More Women Are Now Getting Ulcers

► STOMACH ULCERS, once considered almost exclusively an affliction of men, are now becoming more common in women.

Mama's ulcers, however, are more likely to be overlooked because she does not complain about them as much as papa does.

So Dr. Joseph Shaiken of Marquette University Medical School, Milwaukee, reported at the meeting of the National Gastroenterological Association in Washington.

"Ulcers in women are more likely to occur during the menopause, or change of life," Dr. Shaiken said. "Pregnancy invariably has a beneficial effect on ulcer patients of an earlier age."

Repeated scarring of the stomach wall by ulcers at the junction of the stomach with the small intestine often results in inability of the stomach to empty, Dr. William T. Gibb of George Washington University School of Medicine, Washington, told the gathering of stomach specialists.

The inability of the stomach to empty is not due to actual obstruction, as might seem to be the case. Instead, Dr. Gibb explained, it is due to exhaustion of the muscle fibers in the wall of the stomach.

The stomach in such cases becomes a "flabby bag," he said. Unlike the muscle of an overworked heart, the stomach muscle does not enlarge.

Simply washing out the stomach often brings marked relief in such cases, Dr. Gibb reported.

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CE FIELDS

BIOCHEMISTRY

Plant Growth Stopper Studied as Cancer Aid

► A CHEMICAL that makes plants stop growing without killing or harming them is now being studied to see whether it has any possible cancer-checking effects. The study by Dr. Aubrey W. Naylor of Duke University, Durham, N. C., is supported by the American Cancer Society.

Maleic hydrazide is the chemical, and it has been tested only in one or two cancer patients so far as is known. In these experiments, conducted by scientists in San Francisco, it did not interfere with growth of the tumors.

Further studies are now being undertaken in hope that the mechanism of action, if and when known, may suggest ways of arresting animal and human cancers.

Maleic hydrazide affects only the terminal growing parts of plants, that is, the tips of roots and stems and the buds. It does this by preventing the division of the very cells on which the plant depends for increased stature. The nuclei of these cells of treated plants swell and the cytoplasm which surrounds them becomes more transparent. This is a characteristic of cell injury without repair.

The older and well-formed leaves of plants treated with maleic hydrazide continue to live, but the growth of new, half-formed leaves ceases completely. The chemistry of the plant, its metabolism, slows down almost to a standstill.

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SURGERY

Baby Given New Nose So Parents Will Accept Him

► A FOUR-MONTHS-OLD baby boy was saved from being completely rejected by his parents when a plastic surgeon made him a new nose.

The case was reported by the surgeon, Dr. Michael L. Lewin of St. Joseph's Hospital, Paterson, N. J., at the meeting of the American Society of Plastic and Reconstructive Surgery in Hollywood, Fla.

Half of the baby's upper lip and two-thirds of his nose, including the septum which divides the two nasal cavities, were destroyed by a meningococcal infection when the baby was two months old. His life was saved by antibiotics and cortisone. His lip was repaired at the age of four months.

However, when the customary delay of three or four years was suggested before reconstructing the nose, his parents refused to take him home from the hospital.

Reason for the suggested delay in the

nose operation was that a nose reconstructed in infancy would need to be operated once or twice again to keep pace with the growth of the rest of the child's face.

The 21-year-old ex-serviceman father and 18-year-old non-English-speaking Italian girl mother could not accept the deformed child. The hospital could not keep him indefinitely and there was no institution for him.

Attempts to mask the deformity with a false nose of acrylic and latex failed because the baby pulled or rubbed it off.

So, starting when the baby was five months old, Dr. Lewin in a series of seven operations built him a new, giant nose which his now two-year-old baby face is beginning to grow up to. His parents accepted him completely, once he had a nose, and are now devoted and attentive, Dr. Lewin reported.

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TECHNOLOGY

Mobile Powerhouse for Disaster Area Aid

► MOBILE AUTOMATIC powerhouses that could aid disaster areas such as those left in the wake of hurricane Hazel have been developed by General Motors.

The diesel-powered electric generators can be housed in either a truck's trailer or in a railroad car. They can be dispatched quickly to the disaster scene and operated as emergency sources of electricity to bring light and power to hospitals, refugee centers and civil-defense radio stations.

N. C. Dezendorf, GM vice-president, said the mobile powerhouses can be put into immediate mass production "side by side" with diesel locomotives now being built at the La Grange, Ill., plant.

Designed primarily for emergency use by electric utilities, the mobile powerhouses also could provide large blocks of power for military maintenance stations close to the front line, he said.

The machines are completely automatic. They can be started or stopped by radio, by a dialed telephone number or by automatic electric relays. They can be controlled by an operator hundreds of miles away.

When the "go" signal is given, the machine starts automatically and accelerates to its full speed of 720 revolutions a minute in about five seconds. The generator is automatically synchronized with the line, if it is acting as a helper generator, and is fully loaded within 45 seconds of starting.

Electric utilities may save "hundreds of millions of dollars" by using the units to meet seasonal or peak demands for electricity, Mr. Dezendorf said. By spotting the units around the fringes of a utility's system, engineers may avoid the necessity of building new tie-lines or power plants.

The railroad version of the mobile powerhouse is made in capacities of 750 and 1,000 kilowatts. The highway version is made in 350- and 500-kilowatt sizes. The generators operate at 4,160 or 2,400 volts.

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ARCHAEOLOGY

Prehistoric "Las Vegas" Yields Gambling Setup

► EQUIPMENT FOR dice, skill-ball and other gambling games has been discovered in a prehistoric "Las Vegas" by University of California scientists under the direction of Dr. Clement Meighan.

Analysis of relics recovered from the site of a 1,000-year-old Indian village in southwestern Utah revealed many bone gaming pices. The pieces were marked in different ways and apparently were intended as dice for gambling.

A number of stone balls about the size of golf balls were also found. These suggested a prehistoric version of "skill-ball."

The "sports-minded" community, occupied some time during the 10th century, was a sizable one of several dozen buildings of wood and adobe. In and around the houses were found remains of several thousand objects of Indian manufacture. These included pottery vessels, arrow points, grinding stones and other domestic instruments.

Two Indian tombs were found. Both were adult graves carefully prepared by covering the body with bark and sticks, and sealed with a foot of wet clay. One grave contained skeletons of three rodents and six birds. The animals were thought to have been placed in the grave as food for the spirit.

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HORTICULTURE

New Strawberry Variety Resistant to Red Stele

► STELEMASTER, THE first commercial strawberry variety resistant to all races of a strawberry ill called the red stele, will be available in limited numbers for 1955 planting.

Particularly injurious in the eastern United States, red stele is a soil-inhabiting fungus for which no practical way of eradication is known.

Red stele attacks the roots, turning the steles or central part of the plant roots red. The roots, in turn, die. Plants infected by the disease either die or become badly stunted and produce only a few small berries.

Other varieties of strawberries have been proven resistant to one or several races of the disease, but Stelemaster is the first that has proven resistant to all known kinds of the disease.

The new variety grows best in moist soil, which is also the best for the fungus. It is an early season strawberry, described as medium-sized, smooth and with a light red, juicy flesh.

The berries, however, are not satisfactory for freezing.

Stelemaster was developed by the U.S. Department of Agriculture and the Maryland Agricultural Experiment Station.

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