AERONAUTICS

Prone Position Pilot Bed

This device is expected to lessen the hazards of pilots blacking-out, decrease flying fatigue and gravitational pull. It is in the testing stage now.

See Front Cover

➤ A BED for a pilot to permit flying speedy planes in a prone position was revealed at the Wright-Patterson Air Force Base, Dayton, O. It is a development of the aero-medical laboratory at the base.

Dubbed a prone-position pilot bed, it is designed to lessen flying fatigue from long hours in the air, and gravitational pull, both well-known hazards in maneuvering jet-fighters where pilot black-out is apt to occur.

Pilots who took part in recent tests of the bed, as shown on the cover of this week's SCIENCE NEWS LETTER, experienced no discomfort from lying stomach-down on the couch for as long as eight hours continuously, and noted no unpleasant after-effects.

To date the prone position bed has not been made a standard part of any plane, but has been installed in the nose of a B-17 for test purposes. It is to be tested soon in the forward part of an F-80 jet-fighter. Both planes permit the use of conventionally seated pilots to take over in emergencies.

In general the bed consists of a length of nylon netting supported over specially curved sides so as to conform as closely as possible with the body contour. Abdominal support can be adjusted to individual requirements, and pilots are able to make adjustments as the need arises during flight. The pilot's head is supported by an adjustable jaw rest.

Special airplane controls have been designed for the prone position. Two movable pans with adjustable handgrips act as levers for steering the plane. The pilot's feet are braced against pedals which can serve either as rudder and brake controls in a conventional control system, or as brake pedals only in a system of the aileron-elevator-rudder type.

Science News Letter, February 19, 1949

NUCLEAR PHYSICS

British Lead in Bevatron

➤ ENGLAND is leading in the world race to produce the most powerful type of atom smasher, the bevatron, an Ohio State University physicist said.

Surveying the atom smashers now operating or under construction, Dr. M. L. Pool pointed out that no bevatrons have yet been put in operation.

"However, the University of Birmingham, England, is leading the world by having such a machine about half finished," Dr. Pool reported in the University's ENGINEERING EXPERIMENT STATION NEWS (Dec. 1948).

Bevatrons will have energy ranges measured in billions of electron volts compared with hundreds of millions of electron volts for the most powerful types of cyclotrons, most potent and best known type of atom smasher now operating. The English bevatron will generate approximately 1,300,000,000 electron volts when completed.

Two bevatrons, both more powerful, are in the early stages of construction in this country. One, at the University of California in Berkeley, will be the world's most powerful atom smasher with a top voltage of 6,000,000,000. Another bevatron being constructed at the Brookhaven National Laboratory on Long Island, N. Y., will generate 3,000,000,000 volts.

Most important advance expected from the bevatrons will be increased laboratory production of the powerful mesons, particles found in the cosmic rays which bombard the earth from outer space. First man-made mesons have been produced by University of California scientists using the largest cyclotron now in operation.

When the University of Birmingham's new bevatron is completed, Dr. Pool predicted, "mesons of all kinds can surely then be made abundantly."

The bevatron, a sort of giant cyclotron, is also known as the "cosmotron" or "proton synchrotron."

Science News Letter, February 19, 1949

NUTRITION

No Need To Count Vitamins With Your Cocktails

➤ IF YOU have been swallowing vitamin B pills or yeast with every cocktail in order to have a clear head the morning after the party, you can relax. So long as your diet is adequate, you need not worry about counting vitamins at cocktail parties.

This reassurance about vitamins and alcohol comes from Dr. Norman S. Moore of Cornell University School of Nutrition.

The idea that extra vitamin B is needed when alcohol is consumed is wrong and was based on a misunderstanding of scientific findings, Dr. Moore points out in his report to the NEW YORK STATE JOURNAL OF MEDICINE (Jan. 15).

The mistake in thinking started in 1928 when it was first suggested that vitamin lack might be a factor in the development of the severe nerve disorder, polyneuritis, in alcohol addicts. Then it was found that alcoholics with this nerve disorder improved while taking whiskey if they also ate a vitamin-rich diet and took extra vitamins.

About this time, too, doctors were calculating vitamin B_1 requirements on the basis of total calories consumed per day. If alcohol was taken, they added in the alcohol calories and this meant increasing the amount of the vitamin. And it was assumed that vitamin B_1 was needed for the chemical conversion, in the body, of alcohol to fuel, because the vitamin is needed for the conversion of sugar and starches to fuel.

Recent studies, Dr. Moore points out, show this assumption is not correct. The chemical breakdown of alcohol skips a step that is taken in the chemical breakdown of the sugars and starches. It is this step which in the case of the sugars and starches needs vitamin B_1.

Chronic heavy drinkers are likely to be short on this vitamin because they don't eat well, not because the extra alcohol requires more of the vitamin. The occasional or social drinker who consistently follows a good diet will not need extra vitamin B_1 for his cocktails.

Science News Letter, February 19, 1949

ENGINEERING

String Fluorescent Lights Along Bridge Fence

➤ A NEW TYPE of highway lighting is under test in Salem, Mass., on a bridge between this city and Beverly, in which fluorescent lamps in a continuous string are mounted five feet above the roadway on a fence rail along one side of the bridge.

The test is being conducted by engineers of Sylvania Electric Products, Inc., and preliminary results indicate that excellent visibility is obtained. The system using the low-mounted continuous fluorescent lamps seems to overcome blinking effects on drivers experienced by low-mounted incandescent lamps, and to eliminate uncomfortable glare from the light source itself.

Reflectors placed behind the lamps throw the light across the 32-foot road to illuminate the sidewalk and curb. The light is bright enough to permit driving without the use of the headlights on the car. The system is said to be promising, particularly for use on bridges. Among other advantages, it eliminates the need for lamp posts on a bridge.

Science News Letter, February 19, 1949