

MEDICINE

Aviators May Get Bends

Men required to perform moderate exercise in combat airplanes at altitudes as low as 26,000 feet may suffer from divers' afflictions.

► BENDS and chokes, commonly thought of as divers' and sand-hogs' afflictions, may attack aviators as well. Men called upon to perform duties requiring only moderate exercise in combat ships at altitudes as low as 26,000 feet may suffer from bends and chokes, Capt. Cosmo G. Mackenzie and Lieut. Austin H. Riesen of the Greenville Army Air Base, Greenville, S. C., report. (*Journal, American Medical Association*, Feb. 19)

It has generally been supposed that diver's paralysis, often seen after men who work under high atmospheric pressures have returned to the ordinary atmosphere, occurs very seldom if at all at altitudes less than 30,000 feet.

Moderate exercise and delayed elimination of nitrogen from the body in a flight lasting two hours at 28,000 feet produced pains in the bones and lungs, necessitating descent in 36% of the cases. These symptoms occurred in 33% of the men tested at 27,000 feet, in 21% at 26,000 feet, and none at 25,000 feet.

Exercise seemed to be the primary cause of bends at an altitude of 28,000 feet, occurring in 28% of the men tested by moderate exercise alone. A deep, sickening pain was felt, frequently associated with the loss of the use of the affected member of the body.

At an average altitude of 18,500 feet

during descent the symptoms of bends disappeared.

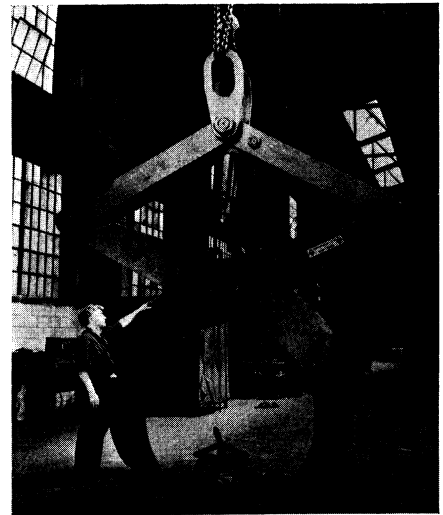
There seemed to be no correlation between body build or physical fitness and susceptibility to bends among the group tested. Older men seem to be less susceptible, however, Captain Mackenzie and Lieutenant Riesen report.

All the men participating in these experiments were volunteers from the 16th Altitude Training Unit and represent a fair cross section of Air Corps enlisted personnel. They were all in good physical condition because of daily calisthenics and athletics.

"With the exception of the officers, these men had not experienced nor had they seen bends and chokes prior to the chamber flights," the authors report. "There is no reason to believe that any prejudice existed as to the results or that psychic factors played an important or significant role."

When the desired altitude had been reached, each man did five deep knee bends and extended five times at arm's length a 14-pound high-pressure oxygen cylinder held in the palms. These two exercises were repeated every ten minutes during the flight. The altimeters were covered, except for the first two flights, so that men in the chamber were unaware of their simulated altitude.

Science News Letter, February 26, 1944



GIANT—This massive tong has a lifting capacity of 80 tons, weighs 12,489 pounds itself and has an opening 69 inches wide. Constructed by Heppenstall Co., Pittsburgh, it was specifically designed for use in handling ingots in a steel plant. The small tong between the claws of the larger one has a lifting capacity of 1,600 pounds.

finish of the war in less than three years.

By next October, however, Admiral McIntire said, "We will know pretty well where we stand."

Young men being inducted into the Service from now on, he continued, must be able to meet physical requirements for full combat duty, because both Army and Navy plan to use for limited service those who have already seen combat duty and been too severely wounded or disabled to return to it. Their experience makes them of great value for teaching and other limited service activities. The new Navy plan for rehabilitation of the wounded includes an arrangement whereby industrial organizations that will employ the men when they have recovered are teaching them a trade while they are still in the hospital.

Admiral McIntire gave high praise to medical researchers and said that thanks to their efforts malaria control in the Southwest Pacific is now better in hand.

Science News Letter, February 26, 1944

Relocation of Physicians

► AN ANSWER to the question of peace-time distribution of medical care may be found in the wartime experience with relocation of physicians to meet the

PUBLIC HEALTH

Navy To Hold Doctors

About one-third of its physicians will be kept from going back to civilian life for some time after the war. Navy has new plan for rehabilitation of wounded.

► MEDICAL planning for the future must be based on the fact that the Services will need many physicians for some time after the war, Rear Admiral Ross T. McIntire, surgeon general of the U. S. Navy, declared at the Congress on Medical Education and Licensure held in Chicago under the auspices of the American Medical Association.

If the Navy can give back within the first post-war year two-thirds of the doctors it has taken from civil life, it will be doing well. It will need one-third of them for a long time after that, Admiral McIntire said.

Doctors and medical educators were warned by Admiral McIntire that they have no right to make plans for the

medical manpower shortage in different areas, Dr. Harvey B. Stone, of Baltimore, declared at the Congress on Medical Education and Licensure held in Chicago under the auspices of the American Medical Association.

As vice-chairman of the directing board of the War Manpower Commission's Procurement and Assignment Service for Physicians, Dentists, Veterinarians and Nurses, Dr. Stone reported that well over 2,000 physicians have now been relocated.

Some unsolved problems still exist, he said, but added that "on the whole it may fairly be said that this issue which at first seemed so forbidding has met with a large measure of success."

Recruiting physicians for the armed forces has been only one part of the Procurement and Assignment Service's activities, he pointed out. With the aid of the U. S. Public Health Service and the state and county medical societies, areas of "alleged or suspected" medical manpower shortage were investigated and the findings were reported to the central office.

At the same time, the same groups, particularly the field force of Procure-

ment and Assignment Service, were on the alert to find and persuade doctors to relocate. Communities were stimulated to make relocation attractive by arranging for living and office quarters. State licensing boards cooperated by easing the legal difficulties of men moving across state lines. In the future certain financial difficulties will be eased by recent Congressional action in placing a substantial sum of money at the disposal of the U. S. Public Health Service to aid relocations.

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Disease Death Rates Low

► DEATH RATES from disease among our present far-flung fighting forces are not only lower than those in World War I but lower than the annual death rate in the Army during any one of the last ten years of peace, Brig. Gen. James Stevens Simmons, U. S. Army, declared at the Congress on Industrial Health held in Chicago under the auspices of the American Medical Association.

We have been able to develop our present great military force with such rapidity and mobilize industrial workers

to support it only, he is convinced, because we were armed with efficient methods and facilities for the prevention of disease.

Continued protection of health in this country and abroad, in his opinion, is essential to Allied victory and world recovery. He expressed the hope that eventually, through the development of preventive medicine in its broadest implications, it will be possible to prevent that most pernicious of all diseases, war itself.

The greatest difficulty in developing the Army's health program, he said, was the inability to get enough adequately trained personnel to carry it out. Only 160 malaria control officers were available on the basis of requisite training at the outset of the war. There were only 200 acceptable bacteriologists, only 63 suitable food and nutrition specialists and only 136 biochemists. Many of these could not be called without danger of breaking down the organization needed to protect civilian health.

The Army was obliged, therefore, to give short training courses in various aspects of preventive medicine. After the war, thousands of these men will go back to civil life partly trained for public health work and with great field experience. In addition, a large proportion of the troops will go back convinced of the importance of preventive medicine. As a result, he said, the nation faces a great opportunity to continue the health education of these individuals and to place the public health of the United States on a broader, firmer basis than has been achieved by any nation in history.

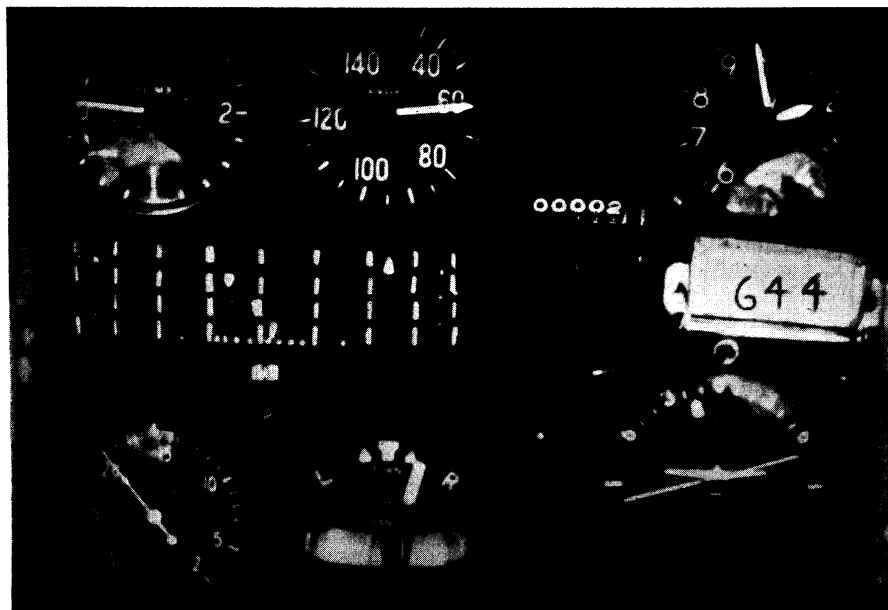
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AERONAUTICS

4F Men to Be Trained As Flyers in Experiment

► CAN 4F men learn to fly? Just what constitutes a physical handicap in flying will be learned experimentally as one of the research programs of a new Institute of Aviation Psychology, soon to be opened at the University of Tennessee.

The Institute will be supported by the U. S. Civil Aeronautics Administration and the Tennessee Bureau of Aeronautics and will be administered by the National Research Council's Committee on Selection and Training of Aircraft Pilots. The committee will have the cooperation of Dr. Dean R. Brimhall, director of research of CAA, and a spe-



FLIGHT RECORD—In a research program of the new Institute of Aviation Psychology and the Civil Aeronautics Administration, experiments will be conducted to learn just what constitutes a physical handicap in flying. A special movie camera will record the way the student handles his controls, at the same time that a record is made of the actions of the plane. This is a typical photograph of an instrument panel, showing what the plane is doing and the position of the controls at the same time. The instrument in the center at the left shows the position of the throttle, aileron, flipper and rudder by means of small arrows, top to bottom.