
efficient use of oxygen masks, electrically heated suits, and other personal equipment are the Aviation Physiologists of the AAF altitude training program and the Personal Equipment officers who are assigned to each tactical unit to preach the gospel of survival. During the past year air crew trainees were indoctrinated in the physiology of flight in 65 altitude, or low-pressure, chambers at the rate of 58,000 per month. Each airman is required to make three chamber "flights," the highest to a "pressure altitude" of 38,000 feet, to learn the need of rigid oxygen discipline to prevent anoxia, or oxygen want, at high altitude.

The contribution made by the aviation physiologist and the personal equipment officer supported by aero-medical research, may be judged by the thousands of missions flown over Europe at altitudes of 20,000 to 30,000 feet without anoxia incident, and by the anoxia accident statistics of the Eighth Air Force. The anoxia accident rate among heavy bomber crew members was reduced in a 1 year period from 116 per 100,000 man missions to 23. Meanwhile the fatality rate for anoxia dropped from 22 per 100,000 man missions to 7.

Rehabilitation and Welfare

Flying day after day against the enemy, dodging flak bursts, and shooting it out with enemy fighters has produced a type of war-weariness new to the American airman. On long missions the pilot, bombardier, tail gunner, and other members of the team must be on the alert for 8 or 10 hours, watching, thinking, planning, shooting, administering first aid, and sweating out the long trek home.

Combat wears men down. This war has now been going on twice as long as the last one. Replacement combat crews are shipped to the war theaters each month to relieve weary crews who return to the United States for rest and rehabilitation. To date over 100,000 AAF officers and men have come home on rotation from overseas. If personnel are so valuable that they cannot be spared for rotation, they are sometimes given 30-day leave in the United States.

Overseas, combat crews become tight teams, each man trusting and supporting the other members. When a man has gone through combat with a group, he develops a dependency upon them as a team. Therefore, when a man is returned from combat under the rotation program, he comes back to America to face all the supposed uncertainties alone. This often produces a sense of detachment and loneliness.

The AAF was the first to establish in 1943, a separate organization to receive and process overseas returnees, the AAF Redistribution Center, reconstituted in 1944 as the Personnel Distribution Command. The Command assumed jurisdiction over the three original redistribution stations at Atlantic City, Miami Beach, and Santa Monica, and has since established two others at Santa Ana, Calif., and Richmond, Va., Army Air Bases.

Returnees, after 21 days leave at home, flow into these stations. In comparative leisure and comfort three tasks are performed. First, the returnee is given a thorough medical examination. Second, he discusses his military experience with men who understand his problems because they also have faced them. Third, he is given an orientation on developments at home since he has been away and of future responsibilities, and he soon realizes that his continuing contribution will be of great value to the AAF. He is then assigned to an AAF station and recommended for the duty for which he is best suited.

Restoring Men to Health

Making a clean break from the theory that once a patient's wounds have healed, only time and rest will bring him back to normal, the Air Surgeon declared early in the war that a minimum of time need be used in returning men to duty in health, if the patient's attention could be turned from his ailments toward a constructive program of educational and physical activity. The recovery program is based on the patient helping himself. On arrival, he is given a handbook in which he is asked to keep a record of his own recovery. However, for a welcome change in his military life, he does not have to fill out any forms the medical people do that for him. He selects his own convalescent activities. He is treated as an individual. He is assigned to one doctor, who becomes his personal physician, with the physical therapist, the psychiatrist, and other medical specialists as consultants.

A lieutenant flying a B-24 had a tough running fight with a German submarine. He sank the submarine but was forced to ditch his plane and broke his back. For 6 months he lay encased in plaster at a hospital. Then, just 5 weeks after entering an AAF convalescent hospital, he was able to perform 75 "sit-ups." Shortly after, he was discharged to duty with a superior rating for physical fitness. The best surgery in the world, alone, could not have done that because muscles and tendons must be strengthened by the patient himself.

Flier's fatigue is an ailment peculiar to air combat. To cure it AAF convalescent hospitals have developed a specialized treatment, the results of which are returning our men weeks and months ahead of schedule, rested in mind and body, to assume positions in the AAF or in civilian life.

To help our patients help themselves, the AAF has amassed at its convalescent hospitals equipment for all forms of vocational and physical treatment. Workshops with machinery used in teaching patients to make things and thereby to strengthen arms, legs, and fingers, are basic equipment. So, too, are facilities for education. To his regular corrective exercises, a patient adds as much additional exercise as he wishes. He is encouraged to play golf, ride, fish, swim, and hike. Hospital authorities are continually looking for new therapy outlets. Farms are operated in conjunction with many of the convalescent hospitals, the patients managing them and doing the work. Recently, an AAF cow and AAF pig won blue ribbons at a county fair.

Such welfare responsibilities are heavy. Increased numbers of detached personnel are being assigned to new duties, new training, or are being honorably discharged. That this command has now been established, is now actively engaged in its mission, means that we are developing an agency to accomplish the human engineering that is as necessary in preparing young men for civilian life as it was in preparing them for war.

Conclusion

The war has taught some important lessons regarding air power and our national security. This report is written at the end of the third year of a long and bitter struggle. We enter the fourth year with full realization that the end is not in sight and that unnumbered months of all-out effort throughout the world and of grim fighting on all fronts are necessary to final victory.

This report would not, however, be complete if, after 3 years