

JULY 1990

Scary vapors in the cockpit (Department of Neurology, Naval Hospital, Bethesda, MD): "This case of intoxication of two aviators by inhalation of JP-5 fuel vapors emphasizes a dangerous safety hazard. One or both aviators experienced burning eyes, nausea, fatigue, impairment of eye-hand coordination, euphoria, and memory defects when their cockpit became overwhelmed with the odor of JP-5 fuel. Physical and laboratory examinations were normal except for their ill appearance, conjunctivitis, and mild hypertension, which resolved without sequelae. Exposure to JP-5 fuel vapor occurs frequently, particularly after acrobatic flight in same aircraft. The neurologic effects and insidious nature of intoxication makes continued operation under such conditions extremely hazardous. The following is recommended: in the event the odor of JP-5 or any noxious or irritating substance is detected in the cockpit, serious consideration should be given to terminating the flight, using precautionary emergency landing procedures and 100% O₂."¹

JULY 1965

Eyesight maintained with sleeplessness (Major, Medical Corps, unknown U.S. service): "Twenty students, 18 years of age, were deprived of sleep for 50 hours. Before, during and after this period of sleep deprivation visual examinations were repeated at intervals, testing visual acuity, muscle balance, stereoscopic vision, tachistoscopic perception and color vision. Only after 46 hours of sleeplessness was a very small decrement noticed. After a short period of sleep (five hours) visual function returned to its original state..."

"From the results obtained in this study it seems that most visual functions show no deterioration even after 38 hours of lack of sleep. It is only after 46 hours that there seems to be a very slight dip in the findings for visual acuity at far and at near, as well as for the far and near phoria findings. The same is also true for the results of the stereoscopic vision test.

"The recovery of visual function after a short period of sleep stands out in all the results obtained.

"It is interesting to note that the changes, as far as such were found, are of a very small magnitude and quantitatively [sic] do not seem to amount to very much. Visual acuity at far ranged at all times between 20/17 to 20/19, which is a very small change indeed. The visual acuity at near was at all times between 20/17 and 20/18, which can hardly be called a change in findings. There was only a one diopter change in the phoria findings for far and up to a three diopter change in the phoria findings for near. The results of the stereoscopic tests also show a very small difference due to lack of sleep, even after 46 hours."³

JULY 1940

Psychobiology, flying, and examiner variability (Major, Medical Corps, U.S. Army): "In recognition of the fact that brain and brawn are not alone adequate, each applicant for flying training has been particularly viewed in regard to anticipated adaptability to military aeronautics. Here enters the greatest variation of the selection system. There is no standard of exactitude other than elimination of those showing neuropathies, dementias, and epileptic equivalents. Each examiner on the basis of his experience hazards an opinion. While every examiner has had definite training in the field of aviation medicine and considerable experience, he is in truth too much his own law. Also, unfortunately, the examiner is usually unable to follow each of his candidates through even primary flight training and profit by judgment errors. Followed through primary training, only half the personal predictions made during the past ten months have proven accurate in estimation of adaptability to military aviation. However, in no case where a prediction of inaptitude was made by pure deduction, without prejudice, or any color of feeling or emotion on the part of the examiner, did the student ever prove more than borderline. There were a few of high potential, though previously untested capabilities, who evidenced unfortunate personalities. These developed and expanded under the strict training régime, sounding unpredicted depths to finish their preliminary phase of training quite well, to prove the examiner's error of prejudice. A slight emotional veneer unconsciously placed by the examiner around certain candidates did in other cases on retroflection, and will undoubtedly again in the future, conceal certain potential failures. A turn of the word, a gesture, a favorable bearing, or resemblance to a known success does influence favorably the examiner more than is usually admitted. These individuals, despite a good start, do not wear well."²

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