OCTOBER 1992

Crew rest for maintainers (U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL): "A U.S. National Guard attack helicopter battalion was monitored in order to document the activity and rest obtained during the annual training exercises… Results indicated… 1) at some point during the exercises, everyone became sleep deprived; 2) the participants who received the most rest of the group were the enlisted headquarters personnel and the pilots; 3) the soldiers who received the least amount of sleep were the commander of the battalion and the maintenance personnel…

"A great deal of emphasis has been placed on crew endurance guidelines for pilots, probably because most flying accidents suggest pilot error. The time has come to establish guidelines for the people who maintain the equipment, as well as for commanders responsible for determining how missions are carried out and for making decisions in emergency situations."[2]

Nitrogen narcosis (Defense and Civil Institute of Environmental Medicine, North York, Ont., Canada): "Below 30 m, nitrogen narcosis can severely degrade the performance of air breathing divers. Within the diving community it is generally thought that this effect can be reduced by repeating deep air dives on successive days… [O]ne's subjective impression or perception of narcosis may decrease during repeated exposure to hyperbaric air without parallel improvement on task performance. To examine this possibility, symptoms and performance were examined over the course of 5 days of repeated exposure to 30% nitrous oxide at 1 ATA… [S]everal symptoms from an adjective checklist showed unequivocal signs of adaptation. With respect to performance effects, reaction time yielded no indications of improvement over days relative to the control. These findings suggest that subjective adaptation can occur without parallel performance improvement, an effect which could compromise safety."[3]

OCTOBER 1967

Difficulty of medical exams (Committee on Aerospace Medicine of the American Medical Association): "Despite… careful medical screening [by FAA-designated Aviation Medical Examiners], several recent incidents have demonstrated that pilots occasionally slip through the medical examinations without revealing such significant impairments as diabetes and pre-existing heart disease, for which they are under treatment by another physician at the time of examination. This can happen in spite of the most careful appraisal by a designated examiner. In a 1966 instance 83 deaths resulted from the crash of an airplane piloted by such an individual, who had been examined two months previously, and was granted a renewal of his certificate, in the absence of any knowledge or evidence of his impairment. The Civil Aeronautics Board investigation of the crash revealed that the pilot was taking medication for both diabetes and cardiovascular disease at the time of the crash.

"Such an event dramatically emphasizes the ethical problems of any physician who has under his care a patient who possesses an FAA pilot certificate... The private physician cannot be expected to know all the details of the disqualifying items in the medical regulations and standards of the FAA. Nor can he easily justify under prevailing ethical principles the revelation of confidential medical information acquired in the physician-patient relationship. Yet he is faced with the possibility that failure to reveal such information may carry responsibility for a disaster involving the deaths of his patient and of many other innocent people." [1]

OCTOBER 1942

Air sickness in Army aviation (Flight Surgeon, United States Army): "For a number of months we have observed cadets who were air sick during the early portion of their flying training…

"Approximately 11 per cent of all aviation cadets become air sick during their primary period of training… Fifty-two per cent of all cadets getting air sick will be eliminated, while the average number eliminated from classes for all causes is only 36 per cent. Of those becoming air sick during the first nine days, 69 per cent will be eliminated from further training; of those becoming air sick from the tenth to twenty-ninth days, 36 per cent will not finish; while of those becoming air sick for the first time after thirty days, only 20 per cent will fail to complete this phase of the flying program…

"No single treatment has been employed successfully. Various medications, such as antiacids, demulcents, antispasmodics and mild sedatives, were prescribed with variable degrees of success… Unless previous history of air sickness is obtained, there is no satisfactory physical or psychiatric examination which will accurately determine a tendency towards this disease… It is believed that the most important causes of air sickness, as seen in a primary army air forces flying training detachment, are psychogenic in origin."[4]

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This column is prepared each month by Walter Dalitsch III, M.D., M.P.H. Most of the articles mentioned here were printed over the years in the official journal of the Aerospace Medical Association. These and other articles are available for download from Mira LibrarySmart via https://submissions.mirasmart.com/asmaarchive/Login.aspx.

DOI: https://doi.org/10.3357/AMHP.4984.2017