

MAY 1999

New stimulant modafinil (Institut De Medecine Aerospatiale du Service De Sante Des Armees (IMASSA), B.P.73, Brétigny sur Orge Cedex, France): "Disruptions in wake-sleep rhythms, particularly induced by sleep deprivation, are limiting factors for military personnel in operations. The role of sleep and naps in the recovery of performance is generally accepted. Pharmacological aids, for example hypnotic or stimulant substances, can also be effective countermeasures. Recently, a new stimulant compound, modafinil (MODIODAL®), has also proven effective. Considering the excellent results obtained with napping and modafinil, we have studied the combined effect of these two counter-measures on psychomotor performance under conditions simulating an operational situation. Beneficial effects of a few hours' nap on performance were confirmed. Consequently, naps should be encouraged, even if limited and diurnal. Modafinil, which combines awakening and stimulating properties without any known side effects, was useful for longer periods of sleep deprivation and when there was no real possibility of sleep recovery. Modafinil did not prevent sleep if sleep opportunities were available. The combination of naps and modafinil demonstrated the best cognitive performance during sleep deprivation."¹

MAY 1974

Cold impact on egress (Royal Air Force Institute of Aviation Medicine, Farnborough, Hampshire, UK): "Experiments were undertaken to obtain a numerical measurement of the effect of cold hands on performance of an emergency egress procedure. The results show that egress times will increase from practised control levels (+10°C) after about 5 min in an environment of -30°C, 8 min in -20°C, and 14 min in -10°C. Egress time is doubled after 14, 37, and 57 minutes, respectively, in the same conditions. The experiments also showed that the duration of cold exposure had important effects on egress performance by an effect other than the lowering of finger surface temperature, which suggests that the cooling of other structures in the hands or forearms may have an important influence on manual performance."²

Oxygen impact on memory (Medical Research Council, Applied Psychology Unit, Cambridge, UK): "Twelve men performed a step tracking task involving short-term memory while breathing pure oxygen from a demand-type oxygen mask, while breathing air from the mask, and in a control condition without the mask. A reliable ($p < 0.01$) progressive deterioration over 8 min was found while breathing oxygen, but not in the other two conditions. The progressive deterioration was particularly marked in the most difficult short-term memory condition."³

Slides and rafts (Office of Aviation Medicine, Federal Aviation Administration, Washington, DC): "Emergency escape equipment for air transport aircraft was limited to ditching considerations prior to World War II. During the war, the ditching equipment was markedly improved. About the same time, nosegear air transport aircraft began evolving, and escape equipment for land emergencies became necessary. A progression from knotted ropes through rope ladders and canvas slides to inflatable escape slides occurred as aircraft got larger. A concomitant improvement in ditching equipment has occurred as aircraft passenger capacity has increased to the present

wide-body models. The next logical step is to combine the emergency escape slide and the life raft in one unit, enabling (1) a significant improvement in deployment efficiency during water emergencies, and (2) a significant overall saving in equipment weight."⁴

MAY 1949

Qualification of pilots (Office of the Air Surgeon, U.S. Air Force, Arlington, VA): "Through a study of the causes of disqualification of applicants for aviation training, some evidence may be gained as to the possible areas of the examination which are too rigid as well as other areas where more stringent rules for acceptance could be instituted ...

"Mild refractive errors, non-progressive in nature, flat feet, dental defects, and other such disqualifying factors need be re-evaluated in terms of service longevity and operating efficiency. On the other hand, rigid requirements for demonstrable factors required of military pilots must be maintained. Nasal obstructions, sinusitis, defective color vision, cardiovascular defects, and other organic diseases are such factors where the presence of such defects in a pilot definitely handicaps him in the performance of military flying."⁵

New USAF medical department (Editorial Comment): "The United States Air Force, which has been provided with medical service by the Army, will now have its own medical department. The recently published report of the Eberstadt Committee on National Security Organization, a taskforce of the Hoover Commission on Organization of the Executive Branch of the Government, strongly recommended such action and on May 13 its approval by Mr. Louis Johnson, the Secretary of Defense, was announced ...

"The Air Surgeon will be given deserved equality with the Surgeons General of the Army and the Navy in his administration of medical personnel and operation of the hospitals under the command jurisdiction of the Chief of Staff of the Air Force."⁶

REFERENCES

1. Batéjat DM, Lagarde DP. Naps and modafinil as countermeasures for the effects of sleep deprivation on cognitive performance. *Aviat Space Environ Med.* 1999; 70(5):493-498.
2. Allan JR, Marcus P, Saxton C. Effect of cold hands on an emergency egress procedure. *Aerosp Med.* 1974; 45(5):479-481.
3. Poulton EC. Progressive deterioration in short-term memory while breathing pure oxygen at normal atmospheric pressure. *Aerosp Med.* 1974; 45(5):482-484.
4. Sirkis JA, Mohler SR, Podolak E. Human factors in aircraft slide/raft combinations. *Aerosp Med.* 1974; 45(5):553-558.
5. Lyons RE. Analysis of the causes of disqualification of 164,687 applicants rejected for aviation training. *J Aviat Med.* 1949; 20(3):193-200.
6. Editorial comment. Separate medical department for the Air Force. *J Aviat Med.* 1949; 20(3):147-148.

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