

JULY 1998

Color vision in ATC (Civil Aeromedical Institute, Oklahoma City, OK): "An experiment on the relationship between aeromedical color vision screening test performance and performance on color-dependent tasks of Air Traffic Control Specialists (ATCS) was replicated to expand the database supporting the job-related validity of 13 FAA-accepted screening tests. ... The original experiment (n = 108), and the replication (n = 136), involved a total of 121 normal trichromats, 31 simple and 44 extreme anomalous trichromats, and 48 dichromats; both protans and deutans were included. The simulations of ATCS color tasks which served as validation criteria were flight progress strips (en route centers), aircraft lights and the Aviation Signal Light indicator (ATC terminal operations), and color weather radar (flight service station and en route center facilities). ... The validities (Kappa) of aeromedical screening tests ranged from 0.44 to 0.91 for prediction of error-free performance on all color-dependent tasks. ... The aeromedical screening tests were generally acceptable in terms of selecting individuals who did not make errors on ATCS color tests, but several tests had high false alarm rates. High job-related validity, in the vicinity of 0.90, was confirmed for several aeromedical color vision tests used for ATCS screening."⁴

JULY 1973

Personality of divers (Navy Medical Neuropsychiatric Research Unit, San Diego, CA): "Ninety-five U.S. Navy divers and 93 fleet controls, matched for age, rate, pay grade, and the age at which they joined the Navy, were compared for several important biographical characteristics. The divers were found to be similar to controls in education, present marital status, educational level of parents, marital status of parents, number of brothers and sisters, number of moves made before joining the Navy, and size of hometown. The divers were significantly different from the fleet controls in running away from home, playing hookey, receiving traffic tickets and being arrested for nontraffic violations. These results show that divers rebelled early against the restrictions of formal social institutions, and were successful in directing this activity and aggression toward an occupation in which these characteristics may not only be useful, but necessary."¹

Aviation and smallpox (Royal Danish Air Force, Vaerloese Air Base, Denmark): "The WHO vaccination campaign has markedly reduced the incidence [of smallpox], but nevertheless 28 outbreaks causing 391 cases of smallpox were recorded in Europe during the years 1960–1970, mainly in Northern Europe. ...

"[A] large majority of the smallpox epidemics are caused by persons who have travelled by air immediately before causing the epidemic. This means that anyone involved in aviation medicine should be very much aware of this potential life-threatening menace to himself and the community.

"In conclusion, it is suggested that all flying personnel serving in public airlines should be routinely vaccinated once a year against smallpox, similar to the protective measures that should be routine for quarantine and ambulance personnel and in certain groups of hospital personnel (in dermatological, bacteriological, pediatric wards, and of course in the wards for infectious diseases)."²

JULY 1948

G slide rule (University of Virginia Medical School, Charlottesville, VA, and the Office of Naval Research, Arlington, VA): "The calculation of 'g' forces [sic] developed during centrifugation from radius in feet and revolutions per minute according to the formula $g = 4\pi^2 r(\text{rps})^2 / 32.2$ is somewhat tedious. A more convenient method of determining 'g' is by means of nomograms, several of which have been developed and published from this Laboratory. ... Nomograms, however, have the disadvantage of being difficult to read accurately when small, and of being wieldy when large.

"The most convenient and practicable method of quickly calculating 'g' over a wide range is by slide rule; but the ordinary slide rule is not well suited for this purpose. A special 'g slide rule' has therefore been designed, and is illustrated herein. From this slide rule, not only 'g' but also speed of rotation in feet per second ($\text{fps} = 2\pi r$) and miles per hour ($\text{mph} = 3600/5280 \times \text{fps}$) may readily be determined when radius and revolutions per minute are known."⁵

Maximum flying time (Oslo, Norway): "When fixing the maximum flying time for air crews there are many factors to be considered. Sufficient rest after a period of work is a physiological necessity, if safety in flying is to be maintained. It should be remembered that relaxation not only implies time spent not flying, but also entails a proper use of leisure, eating well-cooked, wholesome food of a type to which one is accustomed; having plenty of sleep without disturbance in a darkened room of suitable temperature, if possible, at the usual time. Too much smoking of strong cigarettes (during flying and at night) will affect the sleep, leading to restlessness, and thus lessen its recuperative value. ...

"The correct method of controlling flying time ... [is] to lay down a maximum flying time per annum – 1,000 hours, for example, during the time of year with the longest daylight, 130 hours per month. To fly more than 100 hours a flyer must undergo a short examination, carried out by an experienced examiner."³

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