

JANUARY 1998

Human performance in extended isolation (U. of California San Diego, La Jolla; East Carolina U., Greenville, NC; U. of Connecticut, Storrs, CT; Texas Tech U., Lubbock): "Evidence of a specific pattern of performance decrement in isolated and confined (ICE) environments has not been consistently demonstrated in previous research... Decrements in performance in ICE environments: a) occur in a linear, dose-response manner; b) occur in stages; or c) do not occur at all... There were 83 members of the United States Antarctic Program who spent an austral winter at the Amundsen-Scott South Pole Station (90°S between 1991 and 1994 and completed the Profile of Moods States (POMS) once a month for an 8-mo period from March through October... Over the entire 8-mo period, there was a decline in depression ($p = 0.007$) and vigor ($p < 0.0001$), and an increase in fatigue ($p = 0.059$) and tension-anxiety ($p = 0.075$). Of these four measures, only vigor exhibits a linear pattern. Mean scores for tension-anxiety and fatigue were lower during the first half of the winter than the second half ($p = 0.074$ and 0.077 , respectively). In comparisons between each quarter and the remaining three quarters, averaged mean tension-anxiety scores and fatigue scores were lower during the second quarter ($p = 0.009$ and 0.03 , respectively), and higher during the fourth quarter ($p = 0.025$ and 0.035 , respectively) than during the previous three quarters combined... The duration of optimal performance in isolated and extreme environments and the explanation for changes in performance during long duration assignments in such environments both depend on what behavioral measure is used to assess performance."⁴

JANUARY 1973

Aviation medicine and the aviation industry (Aviation Insurance Agency, Atlanta Airport, Atlanta, GA): "In looking into the future of civil aviation medicine, the present structure of the specialty is reviewed in its relationship to the industry and is related to its function as a minimal monitoring system. The need for standardization and expansion are presented as basic requirements to enable aviation medicine physicians and airline medical departments to increase their productivity in the airline industry.

"As the specialty expands with standardization, various functional goals are suggested to strengthen the inter-relationship with airline management, pilots and airline safety. Examples are given and emphasis is placed regarding: (a) Preventive and educational medicine. (b) Operational aviation safety. (c) Development of the 'crew concept'. (d) Revision of aeromedical standards based on actual job performance related research."³

Oculogravic studies (Naval Air Development Center, Warminster, PA): "The Naval Air Development Center's human centrifuge was used to generate acceleration profiles approximating those encountered in aircraft catapult launchings. Twelve subjects attempted to keep a continuously moving target at subjective eye level before, during, and after exposure to the accelerations. Our results showed that subjective eye level was changed by exposure to the accelerations, and that, in some individuals, the change persisted for more than 1 minute after the simulated

launch sequence was completed. The results are discussed in terms of the effects of rotated acceleration vectors on human spatial orientation, and the data are related to certain types of aircraft losses that have been reported following catapult launchings at night."¹

JANUARY 1948

Future of postwar aviation medicine (written by U.S. Army Air Forces as bill was establishing USAF): "We are in the postwar period. We longed for these days when actual combat would no longer direct our decisions, and we could turn to a consideration of our long-range program in aviation medicine. Now we are again under duress. There are several problems that face us in this difficult period of readjustment. The airlines are having a severe financial testing. The aircraft industry has withstood staggering blows and the flow of planes is almost stopped. These are stormy days, but the storm will blow over. Our national security requires the best Air Force in the world. Civil aviation will achieve its proper place as the principal means of transportation, both internationally and within the United States; therefore, it is necessary to define the scope of the medical service needed to support this great enterprise..."

"In order to establish in the minds of the medical profession at large the proper position of aviation medicine, it is suggested that this Association form a Board for certification of properly qualified doctors in the specialty of aviation medicine..."

"I think the time has come when this Aero Medical Association should adopt standards for certification in aviation medicine and proceed with the formation of a competent board recognized by the American Medical Association and operating conjointly with the American Medical Association..."

"Another problem which is not peculiar to the military is that pressing need for research in the human abilities in flight. The Army Air Force carries out an extensive program of aviation medicine research, both in its own laboratories and by contract with universities. The Office of Naval Research and The Bureau of Medicine and Surgery are engaged in a similar program. This research in the human equation in aviation is of paramount importance in the design of future aircraft."²

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