

This Month in Aerospace Medicine History

JANUARY 1996

CRM breakdown (United States Air Force Academy, CO): "Some military operations use a fixed crew concept, pairing crewmembers together for an indefinite period. This research investigated the effect of crew formation policy on aircrew performance during missions in U.S. Air Force KC-135 (tanker) simulators... The results show that fixed crews committed more minor errors (4.4 per mission) than [newly] formed crews (2.6 per mission)... No differences were found concerning major errors or CRM behavioral indicators... The results suggest the possibility of a 'familiarity decline,' where aircrew performance declines when crewmembers become too familiar with each other and may affect flight safety."¹

Naval aviation mishap trends (Naval Air Force, U.S. Atlantic Fleet, Norfolk VA; and Naval Aerospace Medical Research Laboratory, Pensacola, FL): "The present study examined U.S. Naval aircraft mishap trends between January 1977 and December 1992... Results of this investigation revealed that mishaps attributable to both human error and mechanical/environmental factors have declined steadily over the past 16 years, although mishaps attributed to human error have declined at a much slower rate... For single-piloted aircraft, in-flight mishaps constituted the highest proportion of mishaps during the day (>55%), while landing mishaps constituted the highest proportion of mishaps during the evening and night (43-65%). For dual-piloted aircraft, no consistent variation was evident for phase-of-flight and time-of-day. In-flight (approx. 55%) mishaps constituted the highest proportion of mishaps across all times of day, followed by landing (approx. 35%), and takeoff (approx. 10%) mishaps."⁶

JANUARY 1971

Alleviating acute mountain sickness (Canadian Forces Institute of Environmental Medicine, Toronto, Canada): "Clinical trials of acetazolamide versus placebo, and acetazolamide and furosemide were carried out at 17,500 feet (5400m), on Mount Logan. Subjects pretreated with acetazolamide before ascent were clinically well with minor symptoms of acute mountain sickness. Subjects started on furosemide on arrival at altitude quickly became medical casualties..."

"Acetazolamide is effective in ameliorating the symptoms of acute mountain sickness at very high altitude. It does not prevent pulmonary edema. Powerful diuretics such as furosemide do not protect against acute mountain sickness, and in fact may be dangerous at high altitude."⁵

Proper fit of helicopter helmets (U.S. Army): "An aircraft accident fatality that would probably have been prevented by helmet retention stimulated evaluation of the flight helmet fittings of 282 Army aviation personnel serving in Vietnam. It was found that only 44.9% of officers and 30.7% of enlisted personnel had a satisfactory fit, the most common deficiency being the use of sizing pads that were too small. Only 4.3% of the personnel tested had been previously fitted by a flight surgeon, and 75% of this group had a satisfactory fit... It is recommended that all flight helmets

be fitted at the time of issue, and that this fitting be done by specialists trained and supervised by flight surgeons."²

JANUARY 1946

The politics of aviation medicine (Editorial Comment): "The Civil Aeronautics Administration apparently is doing its utmost to ruin the whole medical setup. Not content with reducing the standards for private and student pilots, and permitting the examinations to be made by any physician regardless of qualifications..."

"Now comes word... that membership in a County and State Medical Society is not a requisite even for a designated Medical Examiner... Practically every medical organization in the country requires such membership as a minimum standard to be met before acceptance. The reasons for this are self-evident. Organized medicine endeavors to exert some control over its membership in the way of ethics and fair practices..."

"However, the Civil Aeronautics Administration ruthlessly disregards any advice from properly constituted medical bodies or qualified individual physicians and prefers, apparently, to accept advice on medical matters from laymen."³

Safe aircraft design standards (Australian Air Force): "During the war years, the Army Air Forces accumulated a large amount of data on aircraft accidents from both the technical and medical standpoints. The cost of obtaining these data was large: thousands of aircraft destroyed or wrecked and thousands of lives lost. The present policy of the Army Air Forces is to make available as far as possible every bit of information which can be utilized to promote future flying safety in civil as well as military aircraft."

"It is clear now that safety standards for aircraft design are possible and desirable... As a result of over three years of war, a great deal of experience has been amassed. This experience should now prove a valuable source to be drawn upon in the future design of aircraft."⁴

REFERENCES

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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>.

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