

**JUNE 1995**

*Human factors danger on the naval aircraft carrier flight deck (Naval Air Force, U.S. Atlantic Fleet, Norfolk, VA):* "A comprehensive review of injuries sustained by personnel working on naval flight decks between January 1977 and December 1991 was conducted using database records maintained at the U.S. Naval Safety Center, Norfolk, VA. Data included all fatalities, permanent total disabilities, permanent partial disabilities, and major injuries resulting in 5 or more lost work days. Injuries were coded using ICD-9-CM codes for analysis. A total of 918 flight deck personnel were reported injured during this 15-yr period, including 43 fatalities, 5 permanent total disabilities, 42 permanent partial disabilities, and 828 major injuries. Of the non-fatalities, a plethora of fractures, traumatic amputations, major lacerations, dislocations, contusions, concussions, burns, crushing injuries, sprains, and strains were reported. Nearly all naval platforms with a flight deck reported an injury. While an average of 51 injuries per 100,000 aircraft recoveries were reported annually on aircraft carriers from 1977–86, a marked reduction to a rate of roughly 30 injuries was observed annually from 1987–90. What makes injuries sustained on the flight deck particularly disconcerting is that over 90% can be attributed to human causal factors."<sup>3</sup>

**JUNE 1970**

*Circadian rhythm disruption and mitigation (International Civil Aviation Organization, Montreal, Canada):* "The subjective effects of physiological cycle dysrhythmia due to rapid time-zone translocation have been quite well appreciated for forty years, but it was only the advent of large-scale turbojet transport operations a decade ago that focused scientific attention on the phenomenon. This decade has witnessed out-of-character behavior and inept decisions at high levels by victims of inadequate circadian cycle adaptation, and also extensive high-quality research on the problem.

"Official long-distance air travel by staff members of ICAO on missions and home leave is considerable. Until 1966, rest periods en-route or at destination before active duty were predicated on arbitrary rule-of-thumb 'maximum journey times.' This system was conducive neither to optimum physiological adjustment of staff on commencing duty at remote locations and on return to Headquarters, nor to optimum staff/administration relationships. A formula, based on significant, easily-quantifiable stress factors (but necessarily compromising between scientific accuracy and administrative expediency) was therefore developed and has been applied to all official ICAO air travel since January 1967.

"Rest period (in tenths of days) = Travel duration (in hours)/2 + Time zone differential in excess of 4, + Departure time coeff., + Arrival time coeff. (Departure and arrival time coefficients, which are related to local time, are read from a table.)...

"The validity of the formula is reviewed from time to time in the light of new airline route structures and timetables and the possible effects of new equipment. Present indications are that the advent of supersonic airline travel will ease the time-zone translocation problem for flight crew, but will in general accentuate it for passengers, although reduction in flight durations will to some

extent offset this in the overall post-flight fatigue picture. The weightings presently given to the various stress factors in the ICAO formula will need radical reexamination in the context of SST operations."<sup>1</sup>

**JUNE 1945**

*Backward step in Class III physicals (Journal Editorial Comment):* "The long fight on the matter of lowering physical standards for flying has been won for the time being, at least, by the nonmedical group. Hereafter, applicants for Class III licenses may be examined by the family physician.

"It is no criticism of the family physician to state that he is not qualified to pass on the physical condition of an applicant for flying. A general practitioner is competent to handle about 85 per cent of the cases which come to him. In the other 15 per cent the services of a specialist are necessary. It is certainly no criticism of the general practitioner because he cannot remove a gall bladder, do a mastoidectomy, catheterize the ureters or do a refraction of the eyes. Medicine has long since ceased to be a subject about which every physician can know everything. Aviation Medicine is the newest of medical specialties and the general practitioner cannot be expected to know much, if anything, about it.

"The argument that some of the C.A.A. [Civil Aeronautics Authority, predecessor of the FAA] medical examiners are general practitioners, and, therefore, that any general practitioner can do the examination, does not hold water. Those C.A.A. examiners, who are not trained as flight surgeons, have had special instruction in the examination of airmen, are given specific instructions, and the necessary equipment for the examination is provided. Furthermore, the majority of them read the JOURNAL OF AVIATION MEDICINE and attend the meetings of the Aero Medical Association, where, in the Civil Aeronautics Medical Forum, they get further instruction and their problems are answered...

"We still feel that the recent change in regulations is the most backward step which has been taken since aviation developed."<sup>2</sup>

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