DECEMBER 1990

Supporting marital harmony may enhance aviation safety (USAF School of Aerospace Medicine, Brooks AFB, TX): "This exploratory retrospective multi-case study investigates marital discord in USAF pilots as part of an overall concern with mission safety. Seventeen USAF School of Aerospace Medicine (USAFSAM) cases involving marital distress were reviewed, using a standardized format. Duration of martial discord ranged from 1-10 years with an average of 2.25 years. The mast frequent problem noted was one of communication, with authoritarian or controlling styles predominating. The second mast frequent conflict concerned occupational demands; both pilots and spouses complained about frequent work-related separations. Nine of ten distressed outcomes (i.e., separated or divorced) were initiated by the wife. We speculate that a pilot with an inflexible communication style who is not cognizant of his or her spouse's emotional needs is likely to exacerbate marital problems. The notion that marital distress may adversely affect a pilot's attention, generating performance decrements, underscores the importance of investigating elements of marital harmony in the pilot population. Based on our study and review of the literature, we suggest the USAF employ programs that: a) recognize the spouse's contribution to mission safety; b) increase spouse's awareness of mission requirements; c) enhance couple's communication; and d) improve stress management skills."[1]

DECEMBER 1965

Student aviator grades do not correlate to propensity for airsickness (U.S. Naval School of Aviation Medicine, Pensacola, FL): "One thousand sixty-seven student naval aviators were rated at the end of each flight during the pre-solo and basic acrobatic phase of training by the flight instructor for the presence or absence of nausea or vomiting during the flight. To be so rated, the airsickness had to be severe enough to cause inability to control the aircraft. In this manner, a profile of the patterns of airsickness was obtained on each student over the course of the primary flight training. The incidence of this type airsickness was 17.6 per cent (188 students out of 1,067). Correlations between incidents of airsickness per student and their ground school grades and flight grades were not statistically significant. There are three main periods during which the majority of airsickness occurs (79 per cent). These are the initial three training flights, the seventh, and the first three dual acrobatic flights. These periods are closely correlated with the various and different peaks of physiologic and psychologic stresses during this phase of training and provide useful baselines for the evaluation of airsickness in student aviators."[2]

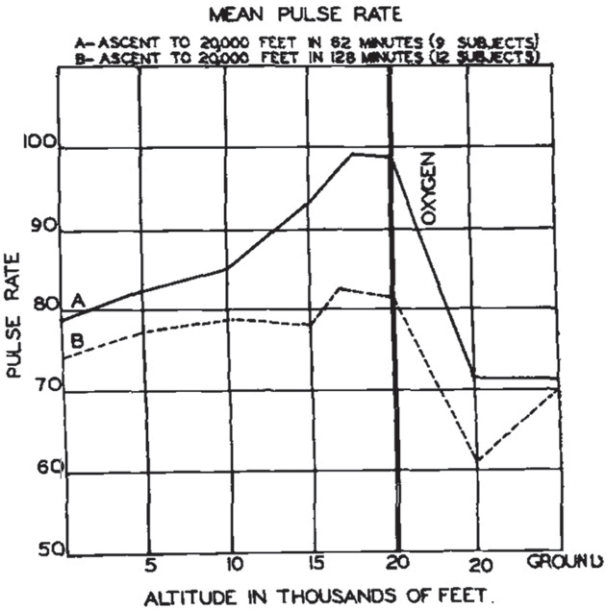

Fig. 1. Mean pulse rates in flights to 20,000 ft: a greater rise is seen with more rapid ascent, with marked slowing of the heart after administration of oxygen.

DECEMBER 1940

Altitude induced hypoxia and the EKG (School of Aviation Medicine, Randolph Field, TX):

"1. Four lead electrocardiograms were recorded on forty-five normal subjects exposed to anoxia through airplane flights to altitudes of 20,000 feet, with varying rates of ascent; and to an altitude of and remaining at 15,000 feet for a two-hour period.
"2. Significant changes in the electrocardiogram were noted in an early increase in rate, and a decrease in voltage of T waves in all leads, first noted at 5,000 feet and progressively becoming greater with increasing altitudes [**Fig. 1**].
"3. With the slower rate of ascent, slightly lessened changes were noted than with the more rapid rate of ascent.
"4. With continued flight at 15,000 feet for two hours, apparently compensatory mechanisms were noted, with a slowing of rate and an increasing voltage of T waves.
"5. U waves developed in slightly less than one-half the cases, becoming more prominent with increasing anoxia.
"6. All changes noted were reversed by the administration of oxygen.
"7. Support is given to the theory that myocardial anoxia is a contributing factor in the production of the signs and symptoms of coronary artery disease.
"8. It is suggested that the earlier use of oxygen is indicated for all flying personnel, perhaps as low as 5,000 feet in order to insure a physiologically normal individual. However, for practicability, at the present time, 7,500 feet would be a minimum level above which oxygen should be required."[3]

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