

**DECEMBER 1995**

*Women in combat (41st Bauer Lecture, Anaheim, CA):* "I am honored to speak to you today on 'women in combat.' The subject is close to my heart for personal as well as professional reasons. My daughter is now flying the S-3 off the deck of the USS *Abraham Lincoln* in the Far East, and could find herself in combat soon..."

"This is also an issue that has an effect beyond women and beyond combat. The U.S. military is often the forerunner of changes in the United States. Racial integration began in the Armed Forces in 1948, long before the Civil Rights Act. I learned as a Second Lieutenant, just a few years ago, how to protect a Marine from self-incrimination before the Miranda Rights were established. As members of the medical profession, you are well aware of the military's pioneering contributions to your sciences..."

"What about me and my troops and the folks that I'm trying to keep body and soul together. Don't I deserve to get the best? I have to tell you, when you are in the grisly business of ground combat, you really don't care about the color or the race or the gender of the person who is providing that best support."

"Therefore, I believe we should fill our ranks with the best, regardless of gender. We should send our best regardless of gender to win our wars. In doing so, I will proudly risk far more than most Americans – I risk my son and my daughter."<sup>1</sup>

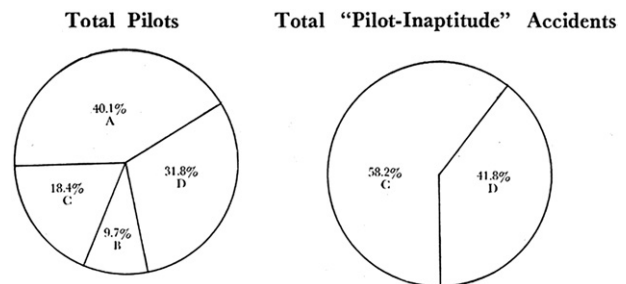
**DECEMBER 1970**

*Physiology of a stowaway (University of Madrid, Madrid, Spain):* "This report is concerned with the biological and clinical effects of a nine hour flight by a 18-year-old aerial stowaway. The boy travelled in the confined space of a DC-8 landing gear cell, without pressurization. He was in a state of unconsciousness, deafness and hypothermia, and had a mild respiratory tract infection. He showed leucocytosis with neutrophilia, hyperpotassemia, hyponatremia, acidosis, elevation of the transaminases and bilirubin. There was glucose in the urine. The ECG revealed changes in QRS waves, ST segments and T waves suggestive of both hypothermia and hypoxia. The EEG was normal. All of these returned to normal within five days."<sup>3</sup>

*Scanning for fatigue (Mayo Clinic, Rochester, MN):* "Fifty commercial airline pilots were studied, by means of infrared pupillography, as to the ability of each to remain alert while sitting in darkness for 15 minutes... Of the 32 pilots who were regarded as well rested, 28 performed in either a superior or an average manner; the performance of 3 was marginal; and 1 gave an unsatisfactory performance. Pilots with inadequate rest did less satisfactorily in their tests, as a group. It is recommended that testing of this type be studied further, since the ability to remain alert at present is not included in the assessment of pilots for medical certification by the Federal Aviation Administration."<sup>4</sup>

**DECEMBER 1945**

*Breaking down pilot error (U.S. Navy):* "A study of the aviation accident history of pilots averaging 600 total flying hours has



**Fig. 1.** "A, No accidents at all. B, One or two material failure accidents only. C, Only one "pilot-inaptitude" accident. D, Two to five "pilot-inaptitude" accidents."

revealed that 2,625 pilots were involved in 2,559 accidents. The majority of these accidents were attributed to 'pilot error' irrespective of the underlying contributing factors of the pilot's temperament or capability. The use of the term 'pilot-inaptitude' in this report incorporates the inclusive terminology formerly given to the term 'pilot error'.

"The study has revealed the aviation accidents resulting from 'pilot-inaptitude' [Fig. 1] include the following types of error: 1. Human errors... 2. Errors due to variations of physical and/or psychological fitness... 3. Pilot-overload errors... 4. Pilot errors.

"Human errors' are the expected errors resulting from momentary lapse of concentration and attention in performing a task known well and normally mastered efficiently. Taxi accidents, for example, are rather frequently the result of 'human errors.' In pilots as a group, there is an accident level which must inevitably persist, even when all other personnel causes are eliminated. Reduction in the level of aviation 'human errors' is, in itself, a sobering challenge to aviation safety."<sup>2</sup>

**REFERENCES**

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