

**AUGUST 2000**

*Cabin air (Uppsala University, Sweden; Scandinavian Airlines System, Stockholm, Sweden):* "[On intercontinental flights] humidity was very low (mean 5%) ... CO<sub>2</sub> concentration was below 1000 ppm. ... [C]oncentration of respirable particles was 67 µg·m<sup>-3</sup> during smoking conditions, and 4 µg·m<sup>-3</sup> during nonsmoking conditions. ... Female crew had more complaints on too low temperature, dry air, and dust. Current smokers had less complaints on stuffy air and environmental tobacco smoke (ETC). Younger subjects and those with atopy ... reported more complaints. Reports on work stress and lack of influence on working conditions were strongly related to perception of a poor cabin environment. Flight deck crew had more complaints about inadequate illumination and dust, but less complaints about other aspects of the cabin environment, as compared with flight attendants."<sup>1</sup>

*Inflight medical emergencies (American Medical Association, Chicago, IL):* "[T]he AMA Council on Scientific Affairs determined that, while inflight morbidity and mortality are uncommon, serious events do occur, which require immediate emergency care. Management of serious problems requires an integrated emergency response system that ensures rapid notification of medical personnel on the ground, assistance from appropriately trained flight crews and passenger volunteers (if available), and adequate medical supplies and equipment to stabilize the victim."<sup>2</sup>

*Pregnant flyers (Institute of Aviation Medicine, Royal Australian Air Force Base, Edinburgh, South Australia):* "Review of the literature and the basic physiology involved suggests that air transport, both rotary wing and fixed wing, does not predispose to either an increase in or acceleration of obstetric events. In fact, the literature strongly suggests that air transport is frequently extremely valuable in obstetric emergencies, and has no impact in advanced uncomplicated pregnancy. It is concluded that obstetric cases can be safely transported at any gestational age."<sup>3</sup>

**AUGUST 1975**

*Space toxins (Medizinische Universitätsklinik, Tuebingen, Germany; University of Houston, Houston, TX; NASA-Johnson Space Center, Houston, TX):* "The volatile organic components in the spacecraft cabin atmosphere of Skylab 4 ... [showed] more than 300 compounds in concentrations from less than 1 ppb up to 8000 ppb could be detected ... [A]pproximately 100 components in the molecular weight range of 58–592 were identified ... Besides ... alkanes, alkenes, and alkylated aromatic hydrocarbons, components typical for the human metabolism such as ketones and alcohols were found. Other typical components in the spacecraft atmosphere are fluorocarbons (freons) and various silicone compounds, mostly normal and cyclic methylsiloxanes."<sup>4</sup>

*Biting noise (University of Pittsburgh, Pittsburgh, PA):* "Three groups of 25 men were selected from the Pennsylvania Air National Guard for study. ... The degree of alveolar, intracaptal bone loss for each subject was measured from full-mouth radiographs of all groups. The greatest amount of bone loss occurred in crew members of propeller-driven aircraft. Jet pilots had considerably less bone loss while the average number of millimeters of bone lost per tooth revealed a difference between the three groups

to the 0.01 significance level ( $F = 24.7$ ). The data suggests there is a degree of alveolar bone loss over a period of years associated with exposure to propeller aircraft noise and vibration, and negligible loss for jet aircraft noise."<sup>5</sup>

**AUGUST 1950**

*Seeing in the cockpit (U.S. Navy):* "A navy pilot levels his plane off above 50,000 feet. Looking outside the cockpit he sees the sky, a dark blue of low reflectivity. ... Below the horizon he sees glaringly brilliant reflections from the atmospheric dust and haze. ... Looking down to record his position report, his flying suit and the bright white knee pad appear suspended in the dim black cockpit. ... He scans the sky for other traffic and cloud formations and then returns his gaze to the instrument panel ... The nonspecular instrument panel is almost invisible. Blurred, almost fused, specks of light-yellow color tell him that these are the numerals on the instrument dials."<sup>6</sup> Note: The author, Naval Flight Surgeon Norman Barr, led the development of the first global airborne telemetry capabilities in the 1950s.

*New U.S. Air Force (Surgeon General, U.S. Air Force):* "Now that the Air Force Medical Service has 'come of age,' I believe that our horizons are as limitless as the world of space which we seek to conquer. Unhampered by tradition and yet free to exploit our experiences covering some thirty-three years and two world wars presents an opportunity unique in military medical history. Those of us who have the honor and privilege of blueprinting and building this new service are not unaware of the momentous task with which we are faced. However, we accept this challenge with enthusiasm and optimism tempered by a determination that the completed edifice shall not only be a distinct credit to military medicine but also make worthy contributions to American medicine, to all humanity, and to a lasting peace for this troubled world in which we live."<sup>7</sup>

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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 through the link on the AsMA website: <https://www.asma.org/journal/read-the-journal>.

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DOI: <https://doi.org/10.3357/AMHP.6725.2025>