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EXAMPLE STUDY HIGHLIGHTING PROBLEMATICS OF THE EFFECTS OF HIGH G FLIGHT ON UNTRAINED COMMERCIAL PASSENGER.

Abstract

Performing in a high G environment is extremely demanding on the body. Most medical knowledge of the human body in high G environments is based upon studies of healthy individuals who are well-conditioned for such environments, while little data exist regarding the effects of high G flight on untrained commercial passengers. In the context of a new breed of astronauts coming into being with the commercial space flight industry, this paper discusses personal experiences of an untrained female who got the chance to fly as a passenger in a high performance fighter aircraft, pulling up to +9 Gz. The aircraft was a Royal Norwegian Air Force F-16B fighter. The example study discusses the untrained individual's response to the stresses of flight, such as increased and decreased G, changes in cabin pressure, spacial disorientation, motion sickness. Data are based on e.g. blood pressure, electrocardiogram, and post-run questionnaires regarding motion sickness, disorientation, greyout, and other symptoms. Subsequently, the paper presents an overview of G-related research and the development of intervention methods to mitigate the effects of increased and reduced G, relating to the training which might be required for commercial space tourism to overcome G-forces encountererd in such G environments as high G reusable air/space-craft launch and re-entry. It also touches the many tantalizing science opportunities that will be offered when suborbital and orbital trips become routine.