

PREFACE



Aviation medicine, *par excellence*, is a discipline that calls for equal consideration of the physiological effects of the domain and of the clinical status of those involved, and so making possible an understanding of how aircrew can cope with such a demanding environment. In this context the integrity of the nervous system is paramount. Aircrew have to be protected, at least partially, from the hypoxia of altitude and the hypotension of increased gravitational stress, understand the disorientation inherent in being airborne and manage the disturbed sleep that arises from the displacement of the circadian rhythm from the alternation of day and night. Even so, in such a complex environment, responsiveness, both accurate and timely, must be preserved.

These are the stresses that may be encountered by aircrew, day by day, and that can easily impair the ability to operate effectively. However, clinical disorders, not necessarily infrequently encountered and likely to be subtle in nature, may also lead to impaired responsiveness. Epilepsy, syncope, hypoglycaemia, headache and migraine, mild head injury and excessive daytime sleepiness are episodic or transient disturbances that can impair responsiveness and prejudice effectiveness, while disorders of the vestibular, oculomotor and visual systems and of hearing have implications for the ability of aircrew to handle the complexities of the aviation task.

These thoughts in mind, based on experience gained over many years in the postgraduate teaching of aviation medicine at King's College London, have led to the present volume. The content reflects the areas of the neurosciences, both physiological and clinical, that are of particular relevance to the practice of aviation medicine. The book has brought together much expertise from the physiological and clinical neurosciences, and its primary purpose is to explore the ways in which responsiveness may be impaired and the relevance of the prognosis of clinical disorders that may also prejudice this skill.

It has been a singular privilege to participate in this publication. The process, over a few years, provided the opportunity to work with distinguished colleagues who have made notable contributions to the neurosciences that have, in turn, influenced the current practice of occupational medicine, and so that of aviation medicine. I am, indeed, grateful to all the authors who without exception expressed enthusiasm to take part in this venture, even though demands on their time weighed heavily. Their appreciation of the occupational aspects of medicine and their interest in applying their knowledge to a demanding environment have created a text that highlights the importance of the neurosciences to the practice of aviation medicine as well as to other occupations involving demanding environments.

The publication of this work gives me the opportunity to place on record my indebtedness to King's College London. For many years I directed the postgraduate courses for medical practitioners concerned with the day-to-day well-being of air personnel, and the present work was planned and prepared while holding the appointment of a Visiting Professor. I would also place on record the excellent editorial support provided by the Ashgate Publishing organization.

Lord Owen, Fellow of King's College London, kindly agreed to write the foreword to this work and I am indebted for the interest he has shown in this endeavour.

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