Preface

In the past 30 years, China has slipped the surly bonds of its imperial past and joined the modern world economy, building sophisticated industries in electronics, pharmaceuticals, information technology, and most recently commercial aircraft. The COMAC C119, China’s bid to join the United States and the European Union as exporters of wide-body commercial aircraft, is but the most recent of three decades of bold moves where China is re-asserting itself as Chung Kuo, the Middle Kingdom. However, in today’s world of large technological systems such as air transport, global supply chains, and the internet, this creates challenges that would have been unfamiliar to travelers in the past, whether Marco Polo in 1271 or Lord Macartney in 1793.

The Dragon in the Cockpit examines one of these challenges, the inevitable and sometimes disastrous collisions of technology, language, and cosmology created when an advanced technology created in the West is adopted in the East. The consequences of these collisions are well-known: In North America and Europe, there are fewer than one fatal accident per million flight departures, whereas in China there are 3.8 fatal accidents per million departures. Despite the fact that Chinese history is marked by many of the technological advances that shook the world, including gunpowder and the compass, this mismatch between East and West takes on a new aspect when embodied in large-scale, high-performance technologies. Nor is this simply a matter of China “catching up” with the West: the relentless, geometric acceleration of technological advance creates a Malthusian race between technological invention and technological adoption around the world, which will assure that there are always global mismatches between technology and culture, often with tragic consequences (Batteau 2010).

In this book we provide a new perspective on the differential successes of Chinese and Western civil aviation, in the contrasting cosmologies and value systems of China and the West. The Western cultures that invented the airplane and created global air transport networks are individualistic, egalitarian, and linear in their thinking. By contrast, Chinese culture is relationship-oriented, hierarchic, and figurative. These differences at times have tragic consequences. As currently designed, a modern airliner is a crew-served device, and flying it safely depends on a high degree of coordination among the flight crew. This is so important that an entire training discipline, “Crew Resource Management” teaches assertiveness, task-sharing and other communication skills to flight crews (Chapter 6). Assertiveness, however, is a foreign concept in a hierarchic culture, and several accidents have resulted from junior officers failing to correct obvious errors by their seniors (Chapters 1 and 2).
The situation becomes even more complicated with the addition of flight management systems to virtually all modern airliners. These systems are essentially computers that fly the airplane, and their programming embodies the logic of the Western engineers who designed them (Chapter 3). The complexities created by these “third crew members” have been implicated in several accidents among European and North American airlines; when one adds the cultural and linguistic differences between East and West, the sources of misunderstanding skyrocket.

This book had its origin in the decision by Jing Hung-Syng in the 1990s to dedicate his career to interpreting Western technology in the Chinese context, and to a very specific event in September, 2001. Jing, his wife, and Batteau were having dinner in a restaurant in Tainan when they received word of an event halfway around the world. It was evening in Tainan, but it was morning of the same day in New York City, where an airliner had just flown into the World Trade Center. Jing and Batteau had been discussing flight safety, and it slowly dawned that the unfolding events of September 11, 2001 were not the sort of aviation accidents that they had been discussing. Over the next few days, while waiting for flights into North American airspace to resume, Jing and Batteau had several opportunities to reflect on and discuss the meaning of these events for the world and for aviation. When Jing asked Batteau to assist with the English translation of his original published (in Chinese) in 2009, Batteau readily agreed.

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The stubborn facts of higher accident rates among Chinese carriers, both in the Peoples Republic of China and the Republic of China (Taiwan), indicate that transplanting this modern technology into the Chinese context faces some challenges. At the same time, the ascent of Chinese civil aviation into a global sky is an expectable step in the technological evolution of the human race, with potentially mutually beneficial results for East and West. Although the equipment is the same, the cultures are different. Examining this cultural difference from the perspective of 6,000 years of history is the objective of this book.