

Redefining Airmanship

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Introduction

Standards set by precedent are based on something less than average performance, and for that reason, one should not submit to them.

Field Marshall Erwin Rommel

The goal of this book is to provide structure for a lifetime of learning about airmanship, in the hopes of establishing higher personal standards related to your flying activities. This step is a very necessary first one towards personal excellence, because modern airmanship has taken on an ever-increasing and sometimes bewildering complexity, leaving many airmen to wonder what it means to be an expert. Aviators need to understand how all the various factors of airmanship fit together and, perhaps more importantly, how they interact with each other. This understanding is key to improving airmanship, whether you are just entering training or attempting to upgrade your aviation skills. The text seeks to demystify the many complex psychological and physiological aspects of airmanship in an attempt to return the information to the aviator, where it truly belongs. In academic jargon, this book is definitely an “applied” text.

Modern aviators face a tough task. We are required to combine physical, cognitive, team-building, and communication skills, while simultaneously monitoring, managing, and updating a dynamic situation in a relatively hostile environment. Because of the multidisciplinary nature of flight operations, flyers from all realms of the aviation universe—commercial, military, and general aviation—must draw from multiple bases of knowledge to make assessments and split-second decisions and then have the skill and proficiency to execute them safely and effectively. The stakes are high—literally life and death. It is not child’s play.

Education and training programs abound to ensure that we meet the minimum requirements for safe operations. But what about the aviators who seek to reach their maximum potential? Where do they begin their quest for personal achievement? Clearly, an understanding of what good airmanship is must be the first step.

While this might not sound like a daunting task, it is often very difficult to get any two aviators to agree on a definition of modern airmanship. The fundamental meaning of airmanship has changed, evolving from a meaning of basic stick-and-rudder competence to something much broader—a complex mix of human, machine, and environmental elements. In the process, many flyers have become confused about what constitutes good airmanship, and this problem goes beyond mere semantics. Operational errors and aviation mishaps—roughly 80 percent of which still involve human error—are frequently blamed on “poor airmanship.” Myriad approaches have been implemented to remedy the problem, from ergonomics that address human-machine interface to training for better crew coordination and situational awareness. While these initiatives have achieved various levels of success, *the individual flyer* remains the key to meeting the last great challenge in aviation—human error. Aviators seeking self-improvement continue to ask themselves, “Where do I focus my efforts?” Because all aviators are not alike, the answer to this question must come from within each of us, based on a valid and shared understanding of airmanship. The goal of this book is to provide a structure for such an understanding.

Airmanship is clearly too important for relativistic interpretation. Failures often result in tragedy and unnecessary deaths, not only for those who make the errors, but for innocent victims as well. All aviators who share the sky should have an in-depth understanding of airmanship—a common ideal for discussion, assessment, and improvement.

Those of us who are lucky enough to earn our living as flyers have a *professional responsibility* to seek continuous improvement. This group includes military, commercial, and corporate aviators of all types: pilots, nonpilot flight personnel, students, instructors, and check airmen. As professional aviators, we are obligated to seek the highest standards of airmanship.

General aviation enthusiasts may benefit even more from a comprehensive and integrated approach to airmanship than their military,

commercial, and corporate colleagues, because most recreational flyers lack the assets or time to attend the formal training programs that are the military and industry standard. Although many “how-to” books are on the market for general aviation pilots, few (if any) offer a comprehensive picture or an integrated systems approach to understanding and improving airmanship.

Regardless of the niche of aviation in which we employ our aircraft, we all share a *moral responsibility*—to each other and to the public at large—to operate in a safe and efficient manner. The responsibilities of flight are far too great to rely on anything less than a shared interpretation of airmanship standards.

A systems approach to understanding and improving airmanship

This book proposes a new way of thinking about the nebulous concept of airmanship. Based on extensive historical research, it suggests a systems thinking approach, in which each element of airmanship is seen as making an impact on the whole, in a dynamic and complex human equation. Peter Senge, the director for the Center for Organizational Learning at MIT and the author of *The Fifth Discipline*, points out the need for a comprehensive learning approach to complex phenomena:

From a very early age we are taught to break apart problems, to fragment the world. This apparently makes complex tasks and subjects more manageable, but we pay a hidden, enormous price. We can no longer see the consequences of our actions; we lose our intrinsic sense of connection to a larger whole . . . we try to reassemble the fragments in our minds, to list and organize all the pieces, but . . . the task is futile—similar to trying to reassemble the fragments of a broken mirror to see a true reflection (Senge 1990).

Similarly, Clay Foushee, a world-renowned aviation human-factors expert, has found that breakdowns of airmanship are most often caused by failures of integration and not by any lack of skill or proficiency. If this is the case, the solution to many of these errors must lie, at least in part, in understanding and internalizing the concept of airmanship, which is what this book is about.

The goal of this book is to create a composite picture of a successful aviator, in whom no facet of airmanship exists in isolation. The picture that emerges from this effort merges training, operational, and human factors into a single entity—airmanship. This approach is both necessary and appropriate. The airman is still the single largest variable on any aircraft, and no institutional training or evaluation system can ever approach the capability of the internal barometer that lies within each of us for assessing our personal state of competency. But that barometer is only as good as the internal model of airmanship we possess. Without a clear and valid picture of the ideal, the internal guide is useless, and in some cases in which the individual's picture of airmanship is skewed, it can even be detrimental to improvement.

The value of self-appraisal

The great mathematician Archimedes said “Give me a long enough lever, and I can move the world.” This book provides each aviator with a mental structure for applying leverage at the most appropriate point. By evaluating their own performance in terms of an established ideal of airmanship, aviators are able to develop an accurate self-analysis—perhaps the most valuable and rare tool in aviation today.

Self-appraisal is not a natural task for many flyers, who tend to stay within their comfort zones and avoid areas in which they are less than skilled or proficient. Many flyers overcompensate in one area to make up for weaknesses in others. We have all seen the type; for example, a systems or regulations expert who has significant problems making a crosswind landing, or the golden-hands type who is smugly certain that his or her skill and proficiency can make up for any lack of regulatory knowledge. The airmanship model suggests that these compensatory approaches are inappropriate and perhaps even dangerous. Flyers should strive for balance across the areas of airmanship as an umbrella against the unknown situation that lurks in Murphy's closet.

Target audience and goals

This book is written and designed for aviators from all fields who seek to meet the professional responsibilities and moral obligations

inherent in aviation. It is a book to facilitate personal achievement, competence, and expertise. The airmanship model provides a basis for improvement in four primary ways:

1. It provides a relevant structure for integrating a lifetime of learning across the various disciplines of aviation training and education, merging physical skill development with cognitive education and human factors. By identifying the common traits of successful aviators from the past and present, it provides a historically valid definition of airmanship. A conceptualization, or “big picture,” of airmanship is presented as a model for self-assessment and improvement.
2. Through case-study analyses from military, commercial, and general aviation, the book provides a means to see the integrated effects of the various elements of airmanship in a variety of scenarios. Analyzing case studies allows individual aviators to apply airmanship lessons to their own individual flying environments.
3. The airmanship model creates a framework for continuing discussion and development by training and operational personnel. By allowing the various disciplines to see how the integration between airmanship factors occurs at the individual level, increased cooperation and dialogue might be possible between disciplines. In addition, trainers from all corners of professional and general aviation might also find this book useful for case-study and training-program curriculum analysis.
4. The model provides a guide for continuous personal improvement to guard against complacency in those who believe themselves “past the training stage.” Traditionally, many flyers view training as something done at the beginning of a career, during an upgrade to a new position or aircraft, or a recurring annual annoyance to be endured. They tire of redundant training in areas in which they already excel.

This book offers a structure for relevant self-improvement based on an individual diagnosis of personal airmanship. Aviators who have been content with single areas of specialization can broaden their airmanship base and increase their professional competence. With some minor exceptions, the fundamental elements of good airmanship apply