Introduction to the First Edition

Since June 17, 1969, I have been continuously involved, either directly or indirectly, in aviation/aerospace education. On that day, I received my first dual flight in a Cessna 150, and although both the airplane and the airport are gone, the memory is as fresh as if it happened yesterday. Flying is something that gets in a person's blood; even an extended absence cannot prevent a person from saying, "I'm a pilot." But the love of flying should never be confused with the technique of flying.

Thousands of pilots have safe flights every day, but that doesn't mean they fly safely everyday. Many pilots assume that because they have both a large, and an equal, number of takeoffs and landings, they are safe pilots. Unfortunately, that is not the case, and NTSB accident statistics prove it. Safety is a relative concept; it is directly proportional to skill, knowledge, and judgment.

This book stresses knowledge of general-aviation aircraft systems. It isn't as if systems have been totally avoided by authors; there are some excellent texts for use in aircraft maintenance schools. Many universities and other professional pilot programs have been using these texts, but unfortunately there are several serious drawbacks. Such texts always go into far greater detail than is warranted, or even desired, for pilot education. The material often requires specialized knowledge of physics, mathematics, and chemistry not covered in the book. The necessary material is seldom available in a single text—typically requiring two or three. And in virtually every case, the price of each text is very high. I decided that a reasonably priced, pilot-oriented book was necessary.

Aircraft Systems: Understanding Your Airplane requires no special knowledge from the reader. When necessary, terms are defined and concepts are clarified. The book will be as useful to the student pilot as it is to the experienced one. Since the chapters are divided by aircraft systems, it may be read from cover to cover or used as a reference book.