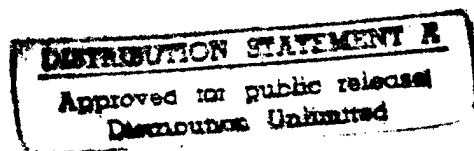


VOLUME IV
FLIGHT TEST MANAGEMENT

CHAPTER 1

INTRODUCTION TO
FLIGHT TEST MANAGEMENT



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INTRODUCTION TO FLIGHT TEST MANAGEMENT

1.1 GENERAL

Welcome to the world of flight test management. Normally the word "management" sends a chill up the spine of every able-bodied aircrew and conjures up images of Peter Drucker drawing effectiveness graphs on a chalkboard, but rest assured, that is not the case here. Flight Test Management is the fundamental theory, application, and management considerations used to design, build, and evaluate current flight systems. It integrates knowledge and flying skills with supervisory practices to make test teams capable of safely and efficiently conducting flight tests on projects of any nature. This volume will be your starting and finishing points in your flight test education and will probably be your most common reference for years to come.

1.2 BACKGROUND

Test Management as a discipline has had a slow and painful evolution. It has generally been one of those nuisances that appeared to hold testers back, but over the years and after many costly accidents and mistakes, it has taken on extreme importance. Today, there are many facets to Test Management and they are only loosely coordinated. Currently, efforts are afoot to advance Test Management to becoming an integrated science and consequently produce better aircraft systems more quickly and efficiently.

1.3 INCLUDED TEXTS

This volume is laid out in a chronological sequence, representing a typical test program. At the back, are texts of unique nature. The starting chapter deals with test planning. However, it also exposes the reader to a brief look at the acquisition process that would have been covered up to the point where test planning commences. Systems Acquisition is covered in more detail in a later chapter. The next chapter focuses on the concept of systems safety, where processes are introduced to help the tester better define what hazards his new system encompasses in terms of known safety hazards associated with each known sub-system. Following this is a chapter on logistics flight testing, where the reader learns how to evaluate reliability and maintainability of his new system. A new supersonic interceptor that achieves Mach 3 with a unit cost of 10 million dollars might sound great, but if the engines have to be replaced after each sortie at a cost of 9 million, then the test program would probably be a failure. Moving on, next comes the flight test instrumentation chapter, which involves both identifying needs and evaluating capabilities for data instrumentation systems. Simulation is critical to any test program and the next chapter shows how much. At this point the tester is ready to fly. The test conduct chapter focuses on getting that test sortie airborne, getting test points accomplished efficiently yet safely, and bringing the bird back home. The next chapter, Data Analysis, explains how to produce that most valued commodity - DATA. For you can fly 1,000 of the best sorties, but if you have no data, or you misinterpret what the data tells you, it is a wasted effort and you may not get invited back to do it again. The last of the core

chapters deals with the dozens of ways to tell management and the customer what you did and what it means. The remaining chapters represent detailed looks at specific kinds of testing.

1.4 HOW TO STUDY WITH THIS VOLUME

Test Management Theory is complicated and extremely integrated. It is difficult to understand one part without a working knowledge of the others. Initially, you should scan ahead to other chapters to get a flavor of their information. Later, as your study progresses, it will be necessary to skim back and refresh your memory on subjects already covered. Good luck and, again, welcome to the world of flight test management.