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◁ CONTENTS ▷

	<i>page</i>
INTRODUCTION	vii
FOREWORD <i>by Oliver Stewart</i>	xi
CHAPTER	
I. <i>The Birth of a Prototype</i>	13
II. <i>A Prototype Flies</i>	21
III. <i>Prototype Development</i>	28
IV. <i>Production Test Flying</i>	40
V. <i>Acceptance Trials</i>	51
VI. <i>Engine Testing</i>	64
VII. <i>Learning to Test</i>	75
VIII. <i>At the Controls</i>	88
IX. <i>In the Test Pilot's Office</i>	95
X. <i>The Physiological Aspect</i>	103
XI. <i>The Psychological Aspect</i>	118
XII. <i>Speed in the Air</i>	127
XIII. <i>A Chapter of Accidents</i>	139
XIV. <i>The Element of Luck</i>	158
XV. <i>Farnborough</i>	166
XVI. <i>Chief Test Pilots</i>	174
XVII. <i>Firms and their Aeroplanes</i>	180
XVIII. <i>A Glimpse into the Future</i>	199

INTRODUCTION > > > > > >

THE IDEA OF FLYING has existed in men's minds from time immemorial. The means of achieving flight has also been given rational consideration by philosophers through the ages. Of such thinkers Leonardo da Vinci first arrived at the answer in the fifteenth century, for he alone, by basic thinking, grasped the principle of lift, stability and control which makes flight possible. Leonardo also conceived the parachute, the helicopter and the ornithopter, three contrivances much in the minds of our designers today. Powered flight was not achieved until the internal combustion engine had acquired some degree of reliability.

On December 17th, 1903, at Kittyhawk, U.S.A., Orville Wright flew for 12 seconds in a powered aeroplane. Orville and Wilbur Wright utilised just those principles of lift stability and control which Leonardo had understood over 400 years before. They had one advantage over their illustrious predecessor—availability of the internal combustion engine. Even their propellers were but a version of that envisaged by Leonardo. The engine they used weighed 170 lbs. and developed but a steady 12 h.p. These men were pioneers in every field—they designed and built their own aeroplane, engine and propellers. They even designed and built their own wind tunnel and between 1900 and 1903 over 200 aerofoils were assessed in this tunnel. They were their own stressmen and calculated the loads to which the aeroplane would be subjected. And perhaps most interesting of all—they were their own test pilots.

They were the world's first test pilots and as such are the finest example for all aspiring test pilots to learn about and to follow, for they understood their aeroplanes in every detail. They undertook each test flight as a logical part of a sequence of tests which together yielded an accurate and comprehensive assessment of the aeroplane. As originators and pioneers the Wright Brothers were not only carrying out a design and flying the resulting prototype upon its maiden flight—they were also making their own maiden flight in a powered aeroplane.

Today the test pilot at least starts with a valuable background

of flying experience upon many different types of aeroplane. But at present engine development has overtaken aerodynamic refinement and today performance is gained at the expense of docility. In fact the present period will be looked upon as a transition period in the history of the aeroplane. Power output has temporarily overtaken aerodynamic refinement and unloosed a family of aeroplanes of high performance, excessive take-off and landing speed and sometimes vicious handling qualities at all but the middle part of the speed range. The job of our test pilots thus is most exacting; it calls for great skill, sound judgement and a thorough technical understanding of aeroplanes.

In addition, we are embarking upon our first steps in supersonic flight. This process has been painful. Wind tunnels themselves are subject to supersonic phenomena and certain aspects of supersonic flight can be investigated only in one way—by the attempts of test pilots to break into and through the hazards of the sound barrier. In this difficult period we have lost some of our finest and bravest pilots—Geoffrey de Havilland; Trevor Wade; John Derry; and others whose names were less well-known as they worked in secret for the Service or Ministry Experimental Establishments. Such men have felt and faithfully reported those characteristics to which an aeroplane is subjected when travelling at and near the speed of sound. Without their skill, courage and determination progress would have been halted.

H.P.P.