

**LEARNING TO FLY IN THE  
U. S. ARMY; A MANUAL  
OF AVIATION PRACTICE**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649093045

Learning to fly in the U. S. Army; a manual of aviation practice by E. N. Fales

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.  
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

[www.triestepublishing.com](http://www.triestepublishing.com)

**E. N. FALES**

**LEARNING TO FLY IN THE  
U. S. ARMY; A MANUAL  
OF AVIATION PRACTICE**



LEARNING TO FLY  
IN THE  
U. S. ARMY



A GROUP OF U. S. ARMY STUDENT AVIATORS.

Frederic Spitzer

# LEARNING TO FLY

IN THE

## U. S. ARMY

A MANUAL OF AVIATION  
PRACTICE

BY

E. N. FALES

ASSISTANT PROFESSOR OF MECHANICAL ENGINEERING  
SCHOOL OF AERONAUTICS, UNIVERSITY OF ILLINOIS



FIRST EDITION

McGRAW-HILL BOOK COMPANY, Inc.  
239 WEST 39TH STREET. NEW YORK

LONDON: HILL PUBLISHING CO., Ltd.  
6 & 8 BOUVERIE ST., E. C.

1917

TL  
545  
F18 e

## PREFACE

The contents of this book run parallel to the instruction given under the author's direction in the U. S. Ground School of Military Aeronautics, University of Illinois branch. In it are set forth the main principles of flying, such as the aviator must know in order to properly understand his airplane, keep it trued up, and operate it in cross country flights as well as at the flying field.

LAUGHLIN LIBRARY  
With the sudden expansion of the Aviation Section of the U. S. Army since the declaration of a state of war with Germany, no book has been exactly suited to the aeronautic instruction of our 30,000 aviation students. These young men, called from non-technical occupations at short notice, must cram themselves in a few weeks with the gist of airplane flying, and must therefore omit everything except the outstanding fundamentals.

The following pages set forth to the non-technical student aviator the gist of aviation, in such a manner that accuracy is not sacrificed to brevity. The present book aims to give the desired essentials, omitting many technical details of interest to the aeronautical engineer, to whose needs other larger textbooks are adapted as a complete survey of technical aeronautics.

Out of the 2000 aeronautical books now in exist-



ence, a few are adapted to use as textbooks for the present need, but none gives the particular and abridged information in tabloid form such as must be adopted for the best time economy of these students.

The chapters on "Rigging" are not abridged so much as are the other chapters, but are given in some detail; this is to fill a definite need among student aviators for material based on practical experience.

In the chapters on "History of Aviation" only those experiments are treated which have a bearing on flight today; this chapter is to be read in conjunction with the chapter on "Principles of Flight" especially as regards controlling the airplane.

The question of Airplane Motors has not been touched, because to do it justice would unduly increase the size of this volume, and because good treatises on this subject are available.

Acknowledgment is due Professor Holbrook and Messrs. Beyer and Hebbard of the University of Illinois for the preparation of Chapters VI to XI.

Aug. 16, 1917.

## CONTENTS

	PAGE
PREFACE.....	vi
CHAPTER	
I. History of Aviation.....	1
II. Types of Military Airplanes and Uses.....	18
III. Principles of Flight.....	39
IV. Flying the Airplane.....	80
V. Cross-country Flying.....	89
VI. The Rigging of Airplanes—Nomenclature.....	113
VII. Materials of Construction.....	120
VIII. Erecting Airplanes.....	133
IX. Truing up the Fuselage.....	158
X. Handling of Airplanes in the Field and at the Bases	
Previous to and After Flights.....	166
XI. Inspection of Airplanes.....	173

