

# **OXY-ACETYLENE WELDING MANUAL**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649477371

Oxy-Acetylene Welding Manual by Lorn Campbell

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**LORN CAMPBELL**

**OXY-ACETYLENE  
WELDING MANUAL**





*Frontispiece*

**Welding School, Ordnance Department, United States Army, Peoria, Ill.**

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WILEY ENGINEERING SERIES

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# OXY-ACETYLENE WELDING MANUAL

By

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TOTAL ISSUE, FIVE THOUSAND

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JOHN WILEY & SONS, Inc.  
LONDON: CHAPMAN & HALL, LIMITED  
1919

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BOOK MANUFACTURERS  
BROOKLYN, N. Y.

## PREFACE

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(1) THE oxy-acetylene method of welding and cutting metals has of late been receiving considerable attention. Its tremendous power of creating, repairing and destroying the work of man has been but recently recognized in its broadest sense, and the demand for operators, skilled in the manipulation of this apparatus, which always has been far in excess of the supply, now knows no limit. Many authorities have set forth their views and theories upon this subject, in America and also in foreign countries. These have been published from time to time in many of the leading periodicals and magazines, as well as in book form. It seems the purpose of most of these works has been to advance the operators who already have a smattering knowledge of this art, or to present to the purchaser of apparatus a set of operating instructions.

(2) It is singular indeed that a school manual, devoted exclusively to the instruction of the beginner, which will serve as an aid to the instructor as well as to the student, has not yet been put forth. It cannot be said that there is not a demand for such. Recently there seems to have been a mushroom growth of welding classes. The majority of the vocational schools, colleges, night schools, and automobile schools have all entered the instruction in oxy-acetylene welding on their rolls and each is attempting to instruct in an entirely different manner from the other.



There can be no question as to the expediency of affording the educational institutions a systematic as well as a standardized method of instructing. But the books and articles of the nature mentioned are not suited to this purpose, and were not designed for it. A school-book is wanted; something to be used in the classroom, to be employed as a reference in the shop practice, to be studied for what it contains, and to indicate further lines of research, where such are required.

(3) To meet this demand, the present "Manual" has been written to serve the instructor as well as the student. In its preparation many books, both well-known and obscure, have been examined and the methods of shop instruction have been carefully studied by the author.

(4) It has been found that regardless of how fast the ground may be covered in the lecture room, the average student's power of assimilation is limited and considerable time has been spent in determining this ratio and applying it between the lecture subjects and shop work.

(5) It must be remembered that while the chapters comprising the theoretical part of this welding manual follow in the order given, the actual shop practice, as previously mentioned, is the most important.

(6) Kindly aid has been received from many sources. Granjon & Rosemberg, Kautney, M. Keith Dunham, S. W. Miller, Henry Cave, C. J. Nyquist, P. F. Willis, Ben K. Smith, and others have embodied in their writings many excellent ideas, which have assisted the author in bringing out certain points advantageously. The following manufacturers are to be given credit for many of the illustrations:

The Oxweld Acetylene Co., Newark, N. J.

The United States Welding Co., Minneapolis, Minn.

The Bastian Blessing Co., Chicago, Ill.

The Linde Air Products Co., New York City.  
 The General Welding & Equipment Co., Boston, Mass.  
 The Messer Manufacturing Co., Philadelphia, Pa.  
 The Alexander Milburn Co., Baltimore, Maryland.  
 The Torchweld Equipment Co., Chicago, Ill.  
 The Davis-Bournonville Co., Jersey City, N. J.  
 The K. G. Welding Co., New York City.  
 The Chicago Eye Shield Co., Chicago, Ill.  
 The Commercial Acetylene Supply Co., New York City.  
 The Welding Engineer, Chicago, Ill.  
 The Journal of Acetylene Welding, Chicago, Ill.

NOTE.—Lieut. Campbell offers his services without charge to anyone interested in this method of welding and may be addressed care of JOHN WILEY & SONS, INC., Publishers, 432 Fourth Avenue, New York City.

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It has been considered advisable to make these books manuals of practice, rather than theoretical discussions of the subjects treated. The theory is fully discussed in text-books, hence the engineer who has previously mastered it there, is, as a rule, more interested in the practice. The Wiley Engineering Series therefore will present the most approved practice, with only such theoretical discussion as may be necessary to elucidate such practice.