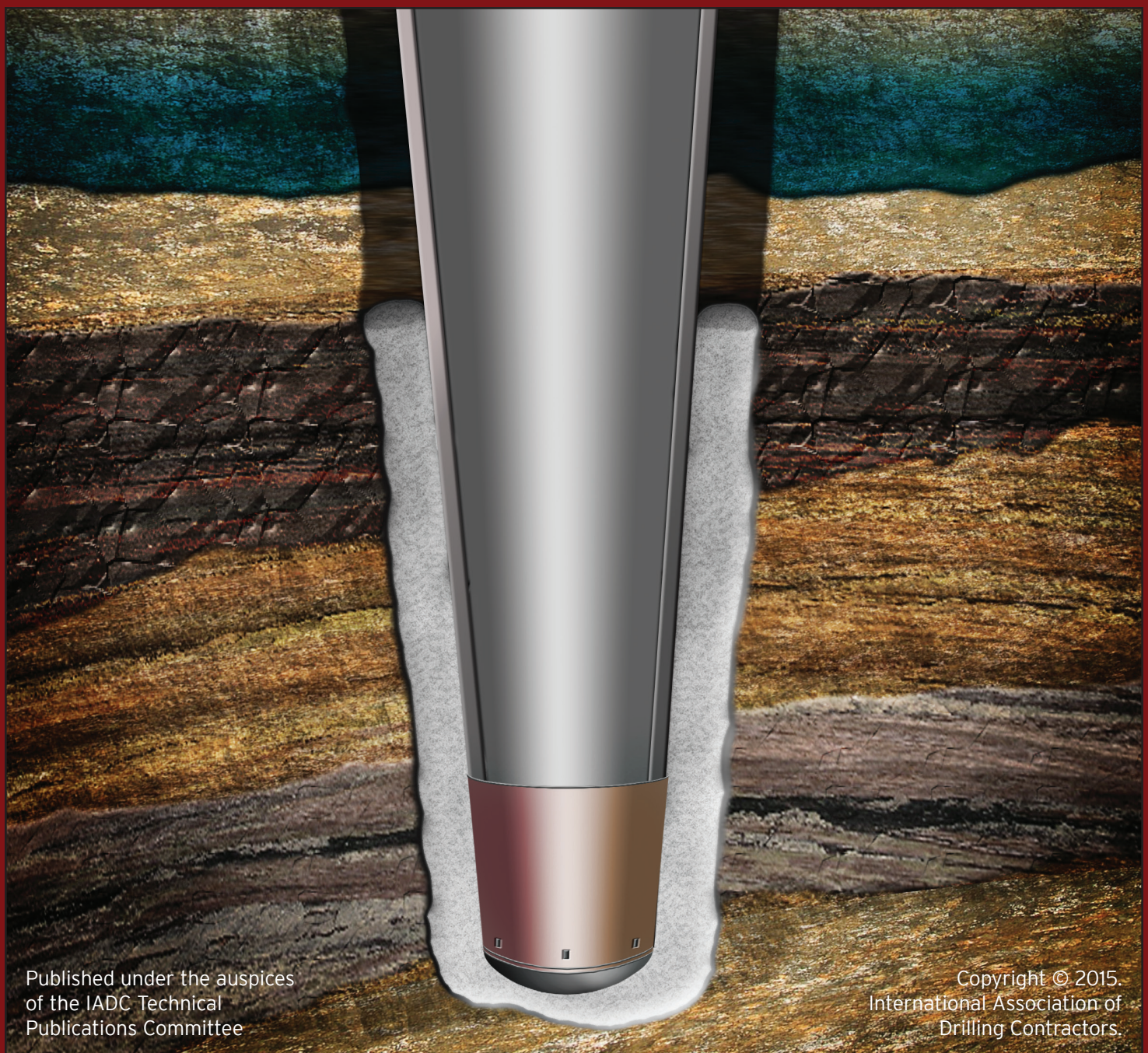
IADC DRILLING SERIES

WELL CEMENTING OPERATIONS

Ron Sweatman



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Ronald "Ron" Sweatman

Montgomery, Texas

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CHAPTER 1

INTRODUCTION TO CEMENTING

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INTRODUCTION

Welcome to the IADC Cementing Book and Course. This book provides excellent value for students working for oil and gas operators, well cementing service companies, drilling contractors and others throughout the world. Cementing is the process that enables well integrity for many years of well operating time periods and beyond.

This course book is an introduction to the cementing process: what it is, why is it done and how to do it. This course contains many new terms, types of equipment, types of materials and processes. Course completion will help the student communicate more effectively in the office and at the job site, improving participation during cementing jobs, and helping prepare the student to assume greater responsibility. Understanding the book's content may start the journey to learning how to design and deliver cementing services.

Take time to carefully read this introduction. It will acquaint readers with this course and suggest ways to get the most out of it.

This book allows learning at one's own speed, without an instructor, and at any time or place that may be convenient.

Before Starting This Course

Parts of this course, starting with Chapter 5, require calculation of answers using basic math and geometry, along with the *Halliburton Cementing Tables* (*RedBook*). If additional training in math or using *RedBook is needed*, complete the *Essential Math* course or the *Essential RedBook* course. These learning tools are available on the Internet as described later.

Experts in cementing may use more exotic mathematical models, but for the purpose of this course only the basics are necessary.

How This Course Book is Organized

Become familiar with the way this book is organized. The table of contents begins each chapter, followed by an introduction, a list of topic areas and the learning objectives for that chapter.

Each chapter in this book contains several units. Each unit contains all the information needed at this time. Other books or manuals are not necessary, with the possible exception of a dictionary and the *Halliburton Cementing Tables* (*RedBook*). Each unit is made up of text, figures to help explain the text (pictures, drawings charts, etc.) and most have a unit quiz. When all the units in a chapter are complete, perform a self-check test. Both the quizzes and tests will help evaluate personal progress. The time spent learning each unit and chapter is not important; it is important that the content is remembered.

The answers to all unit quizzes and the self-check tests are at the end of relevant chapters. After completing a quiz or a test, refer to the appropriate answer key. Successful completion of all the chapter tests and a comprehensive final examination makes the reader eligible to study the advanced chapters in the book and those in other books on the subject.

Study Suggestions

This course was designed to make learning as easy as possible. However, one must read all sections and complete the tests to retain the knowledge. The reader is responsible for learning this course.

Keep this book available at all times as unexpected opportunities to work on a unit may arise such as waiting on a well location to perform a cementing operation. Try to set aside enough time to complete an entire unit during a study period.

Some study suggestions include:

- Review both the section and unit introductions. They will very briefly describe what is in the unit;
- Skim through the unit. Look at the figures and headings to see what's familiar and what isn't. They will tell you what to expect;
- Read the content carefully. Go back to the beginning of the unit and read the content, paragraph by paragraph. Study the figures. If you are unfamiliar with the meaning of a word, look it up in a dictionary;
- Check your understanding. Try to put into your own words the paragraph you have just read. Go back and underline or make notes of important points. This will help you to review the content later;
- Review the unit. At the end of each unit, take a few minutes to look over your notes;

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