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PRACTICAL MAP PRODUCTION

实用地图生产

(英汉对照)

约翰·洛克斯滕 著



测绘出版社

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徐省三 陈宝蕙 译

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John Loxton
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本书讨论了地面基本资料或航摄资料收集这一作业过程以后的地图制作的各个方面。它简要地介绍了基本地图生产的各种方法和作业程序，并着重阐述了地图制作者，特别是发展中国家的地图制作者采用的一些实际方法和面临的各种问题。全书内容计有：地图设计、地图绘制、外业检测、基本地图的印刷和保管，以及与地图制图自动化和地图资料有关的近期技术发展的预测。

本书以英汉对照形式提供了地图生产要点的较好说明，既可用于学习专业知识，又可用于学习专业英语，可供地图生产（包括测量、制图）人员、有关学校师生、地理工作者和不太专于地图制作的其他科技工作者参考。

译 序

很久以来,我们深深感到已经掌握英语基本语法和相当数量普通词汇与测绘专业词汇的读者,应该有适合于他们的本专业英汉对照读物,使他们通过对照阅读,能逐步地学会英汉翻译技巧,以便准确地将本专业的英语文献翻译成汉语。

约翰·洛克斯滕结合地图生产实际撰写的《实用地图生产》这本书,使用的是通俗易懂的现代英语;行文清楚,论述基本得当;内容简明扼要,并且反映了较新的技术水平。象这样一本比较系统的专业读物,如再附上准确的译文,我们觉得就可算是一本适合于测绘等专业广大师生阅读的英汉对照专业读物了。正是出于这种考虑,我们便将它翻译出来,以飨读者。我们希望有志于掌握测绘专业英语翻译技巧的读者,能通过阅读这本英汉对照读物,从中得到某些启发。

本书的前言和第1~5章由徐省三同志翻译,第6~8章和附录由陈宝蕙同志翻译。在翻译过程中,我们除尽量做到译文完整准确地表达出原文的含义外,还力求译文简洁,语句流畅,使读者一目了然,不费猜疑。考虑到本书的读者已具备一定的英语水平,因此仅对书中出现的某些特殊句型和较复杂的语法现象由陈宝蕙同志作出注释。本书翻译后,又请胡毓钜同志作了校订。由于我们的学识水平有限,译文难免有不少缺点和错误,希望读者批评指正。

我们在翻译本书时,曾得到凌大夏、关大任、方炳炎、唐棣、张清浦、栾书俊等同志的帮助;他们有的还帮助看过一部分译稿。对他们的帮助,这里表示衷心的感谢。

译者

一九八四年十月于北京

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Preface

This book is based on a one year lecture course entitled Map Production delivered to undergraduate students of land surveying at the University of Nairobi. It is intended not only to help students and lecturers but to be retained as a reference manual by land surveyors during those phases of their careers when they may be engaged in map production. Although based on actual or recommended practice in Kenya it is hoped that it might be useful in other anglophone developing countries (most of which are situated in the tropics).

Map producers comprise two main groups: in the first group are both official and commercial mapping agencies, whose main task is the production of new and revised basic topographical and cadastral mapping together with a limited amount of specialized mapping and mapping at small scales derived from the basic mapping. In the second group are specialized map publishers who use the national mapping as a base and edit it to suit their particular purposes. Their products include reference atlases, school atlases, motorist maps, tourist guides, and various environmental studies. Such organizations usually have to be self-financing and their staff does not normally include surveyors.

There are some differences between the two groups in training and objectives. Books on cartography have generally been written by and for the second group. This book is designed mainly for the first group although the greater part of it must be relevant to the work of all map producers.

Basic map production begins with aerial photography, ground control surveys, computing, and photogrammetric plotting. This book does not cover these stages but starts at the point where the raw material of maps (control point lists, survey field sheets, photogrammetric plots, computer tapes, etc.) is received in the cartographic office. The main stages that follow are design, drawing, printing, automation, and records.

Obviously many techniques contribute to map production, e.g. land survey, air survey, photogrammetry, computing, drawing, photography, printing, etc. On each of these and other relevant subjects many specialist textbooks and manuals have been published, which should be consulted by the reader requiring more details, always bearing in mind that there are frequent new developments in techniques, equipment, and materials; these are usually first

原 序

本书是根据在内罗毕大学给地形测量专业大学生讲授“地图生产”这门一学年课程的讲稿撰写的。撰写本书的目的,不仅要使本书为大学师生所用,而且还在于要供地形测量员在今后可能从事地图编制这一工作时作查阅参考之用。尽管本书取材于肯尼亚的实际作业,或所建议的作业方法,但愿亦能为其它以英语为母语的发展中国家(它们大都位于热带)所用。

目前,地图生产单位共分两大类:第一类为官办和商业性地图制图单位,它们的主要任务是制作并修测地形图和地籍图,此外还制作少量的专门地图,并根据基本地图编制小比例尺地图。第二类为专业的地图出版单位,它们以国家基本地图为底图,编制适合其专门用途的地图。它们的产品计有:参考地图册、教学地图册、公路图、导游图和供环境研究用的各种地图。这类地图制图单位一般都是自筹资金,其工作人员中通常均无测量人员。

这两类地图制图单位在人员培训和完成任务方面是有一些差别的。有关地图制图学的著作,过去大都为第二类人员所撰,并为其所用。本书则主要供第一类地图制图单位的人员使用,但书中大部分内容必须与所有地图制图人员的作业有关。

基本地图的生产程序:始于航空摄影,接着便是地面控制测量、成果计算和测制摄影测量原图。本书不涉及这些作业程序,而是从地图编绘室收到编图的原始资料(大地控制点成果表、外业原图、摄影测量原图、计算机磁带等)后开始阐述的。这一阶段主要作业程序为:地图设计、绘制、印刷、自动化制图和图档管理。

显然,很多技术部门,如地形测量、航空勘测、摄影测量、成果计算、绘图、照相、印刷等,都会对地图生产作出贡献的。上述每一学科和与之有关的学科,均已出版不少专著和手册,可供需要对其作深入了解的读者查阅。读者应当牢记,技术、设备和资料这三者经常会有一些新的发展;有关它们的报导,通常率先见之于专业或贸易方面的期刊和会议报告中,或见之于各厂家的推广材料中。因此,凡是想跟上时代潮流的地图生产人员,都必须掌握并研究这些新情况。

described in professional or trade periodicals, conference reports or manufacturers' publicity literature, all of which must be obtained and studied by any map producer who wants to keep his ideas up-to-date.

In map production, the philosophy and technology are inextricably intertwined and it is both difficult and inconvenient to separate them, e.g. to describe the theory of hill shading in one part of the book and the technique of applying it in another. The various stages of map production are therefore dealt with as far as possible in the order in which they occur and both principles and practice are described at each stage.

No specimen of a completed map is included in this book. The reader is recommended to obtain a sheet of the standard 1 : 50 000 topographical map current in his own country and keep it with the book for easy reference.

在“地图生产”这门课程中，地图制图学的原理和制图工艺总是紧密地结合在一起的，两者难以分开，也不便分开。例如，不能在本书这一章介绍晕渲的理论，而在另一章说明这一方法的应用。因此，对地图生产的各作业阶段，应尽可能按在作业过程中的顺序依次加以阐述；同时对各阶段的原理和实际操作亦应予以说明。

本书未收入成图的样图。读者可自取本国现行 1:50 000 比例尺标准地形图一份备在手边，以便在阅读本书时易于参考。