

煤矿总工程师工作指南

COAL MINE CHIEF-ENGINEER'S GUIDEBOOK

中 册
VOLUME II

矿井通风与灾害防治
矿山运输、机电与供电
煤炭洗选加工与矿区环境保护

- Mine Ventilation, Prevention and Control of Mine Disaster
- Transportation, Mechanical and Electrical Engineering and Power Supply in Mines
- Coal Preparation and Processing and Environmental Protection in Mine area

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煤矿总工程师工作指南

中 册

《煤矿总工程师工作指南》编委会 编著

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序

编写《煤矿总工程师工作指南》是煤炭工业现代化的基础建设之一。它的出版不仅对改善和提高煤矿总工程师的素质，而且对提高全体煤矿工程技术人员的素质将起促进作用。

煤炭是工业的粮食。我国一次能源消费结构中，煤炭占75%以上。煤炭工业发展的快慢，直接关系到国计民生。建国以来，特别是党的十一届三中全会以来，煤炭工业发展迅速，原煤年产量达到九亿吨以上，居世界第二位，煤炭工业的技术装备和管理水平亦相应地有了提高，但是，从实现四个现代化、大幅度地提高生产能力、改变旧生产力发展不相适应的生产关系与上层建筑、改变一切与生产力发展不适应的管理方式、活动方式和思想方式这样一个高度来要求，差距还是很大的。现代化矿井建设不仅取决于它的技术装备水平，更重要的决定于它的管理水平。党的十三大报告中指出：“现代科学技术和现代化管理是提高经济效益的决定因素，是使我国经济走向新的成长阶段的主要支柱。”根据当前的形势，结合煤矿的具体情况，组织编写了《煤矿总工程师工作指南》一书，目的是为总工程师以及其他技术管理干部提供必备的管理新知识。

本书是在从我国实际出发，系统总结建国以来煤炭工业科学技术经验的同时，吸收国外煤炭工业的新技术、新工艺、新设备和科学管理的新成就编写而成的。《指南》在理论联系实际的基础上，把科学技术和经济管理统一起来；把传统的工程方法和现代化管理科学结合起来；从国情出发吸收国外先进技术，坚持洋为中用。《指南》着重阐述了党对煤炭工业的方针政策及总工程师的基本任务；较详细地介绍了总工程师常用的技术知识、资料和国内外先进经验、现代管理科学理论、决策方法以及现代管理手段等。《指南》也是一部比较实用的、完整的煤矿总工程师工具书，可以帮助老工程技术干部进行知识更新，又可以帮助新进入技术岗位的人员尽快熟悉自己新岗位，获取必备的知识，有利于促进煤炭工业技术队伍素质的提高，有利于煤矿总工程师加强技术管理和推动技术进步。它具有比较明显的针对性、实用性、先进性和指导性。

《煤矿总工程师工作指南》的出版，是三十多位编委、近百名专家、教授历经三年辛勤劳动的结果，是他们从事煤炭工业几十年经验的结晶，也是通过他们，汇集了煤炭战线成千上万工程技术人员、管理工部、工人创造性劳动的结晶。就这点来说，《指南》也是一部集体智慧的著作，它必将在实现煤炭工业现代化的事业中作出应有的贡献。

《煤矿总工程师工作指南》编委会

一九八八年一月

编者说明

《煤矿总工程师工作指南》是煤炭工业部组织近百名专家、教授编写的一部跨学科的仅涉及煤矿井工开采内容的大部头著作。全书分上、中、下三册出版。

本书以《中共中央关于经济体制改革的决定》为指导思想，按照面向未来，面向世界，面向现代化的要求，以促进煤矿总工程师有力地加强技术管理，推动技术进步。

本书的特点是理论联系实际，具有明显的针对性、实用性、先进性和指导性。具体介绍国内外煤矿技术，但不同于教科书，不追求教科书的系统性；具体介绍必要的解决实际问题所需要的定量方法及实用数据，但不同于手册，不追求资料的详尽性；具体介绍国内外煤矿各有关学科的新经验，但不追求专著的详细论述。

本书的编写重点有四个方面：第一、结合当前我国的经济体制改革，论述煤矿总工程师的基本任务及重大技术政策；第二、在总结建国以来我国煤矿技术理论的发展及实践经验的基础上，把理论和实践结合起来，把传统的工程方法与现代化的科学管理方法结合起来，把定性分析与定量分析结合起来；第三、提高经济素养，总工程师既要研究技术的先进性又要研究经济的合理性，对技术活动、技术方案进行经济分析，评价其经济效果，确定其适度的数量界限；第四，提高总工程师正确指挥和处理矿井灾变的能力。

本书采用中华人民共和国法定计量单位。但对某些经验公式、通过实践及试验取得的数据及引入的国外技术资料，仍暂时保留了原使用的计量单位。

本书在编写过程中，得到煤炭工业系统各级领导部门、企事单位的许多领导、专家、教授的支持和指导，有些专家、教授具体参加了编写与审稿工作，我们表示衷心的感谢。

我们的学识所限，书中难免有不妥之处，恳请读者批评指正。

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一九八八年一月

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内 容 简 介

全书分上、中、下三册，八个部分。总论部分，论述煤矿总工程师的基本任务、素养、职责、以及应掌握的煤炭工业重大的技术政策，它是全书的总纲。煤矿开采、矿井通风与灾害防治两篇是全书的主体，着重介绍了国内外近年来的主要科研成果及新的理论和经验。诸如矿山压力及岩层控制的理论及其应用，矿井的开拓与准备，综合机械化采煤及掘进机械化方面的新技术、新工艺及新装备，特殊条件下采煤，风力充填新技术，煤与瓦斯突出及预防，矿井灾变处理要点以及井下环境监测等。煤田地质与矿山测量和矿山运输、机电与供电两篇重点介绍了新的知识及国内外先进经验，煤炭洗选加工与矿区环境保护和现代科学管理与技术经济两篇，着重介绍了基本理论、基本概念和基本方法，为拓宽知识面，注重经济效益，正确处理技术和经济的关系提供了必要的知识。附录部分，为煤矿总工程师提供了日常工作所需要的一般技术资料以及常用管理数学知识。

本书供煤矿总工程师工作参考，对煤矿生产各级领导干部及采矿、地质测量、机电、通风安全、选煤、综合利用的工程技术人员，以及煤炭工业科研、设计部门的技术人员和高等院校师生均有参考价值。

虽然本书主要是针对煤矿编写的，但也适用于开采其他层状矿床的矿山。

AN OUTLINE OF THE CONTENT

There are altogether three volumes in this book, which is further broken into eight parts. In the part entitled General Considerations, the basic task, quality and duty of, as well as the important technical policies in coal industry to be mastered by the chief engineer are discussed. It is therefore the backbone of the whole book. The principal portion of the book, however, consists of the part of Coal Mining and Mine Ventilation and the part of Prevention and Control of Mine Disasters in which the recent research achievements and up-to-date theories and practices both at home and abroad are introduced, such as the theory and application at mine pressure and strata control, the underground mine development and mining section preparation, the current technique, technology and installations in fully mechanized mining and driving, mining under special conditions, advanced technique in pneumatic stowing, sudden outburst of methane with coal and its prevention, main points in the control of mine disasters, as well as underground environmental monitor. stress is laid on introducing new informations and domestic and foreign advanced practices in the parts of Coalfield Geology and Mine Surveying, as well as in Mine transportation, Electrical and Mechanical Engineering and Power Supply. Fundamental theories, conceptions and methods are described in the part of Coal Preparation and Processing and Environmental Protection and the Part of Modern Scientific Management and Techno-Economics, so as to broaden our knowledges in such fields, to attach importance to economic benefit and to provide necessary understanding in correctly dealing with the relation between technique and economy. In the Appendices, common technical materials needed by mining chief engineers in their day-to-day work and managing mathematics in common use are also provided.

This book is essentially referential to mining chief engineers, but is also available to leading cadres at all levels involved in coal mine production, as well as engineers and technicians in the fields of mining, mine geology and surveying, electrical and mechanical engineering, ventilation and safety, coal preparation and comprehensive utilization of coal. Technical personnel in mine research and design institutes and teachers and students in colleges can also find this book valuable.

Although the original idea of composing this manual is aimed at coal mines, it seems likely to be adoptable to mines working any stratified deposit.

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