

attention, and the final segment (Chapter 13, 23p.) wraps up to overall problems of management, man-made stress, control and restoration. One thing that would make this volume a good textbook for any university course dealing with the coastal environment is the thoughtful provision of a couple of pages at the end of each chapter, summarizing the key points. The work is thoroughly recommended.

Rhodes W. Fairbridge  
Columbia University  
New York

**Handbook of Dredging Engineering**, J.B. Herbich, 1992. New York: McGraw-Hill, 756p. ISBN 0-07-028360-5.

The *Handbook of Dredging Engineering* is an extension and update of the book *Coastal and Deep Ocean Dredging* authored by Dr. Herbich and published in 1975. This new handbook contains a majority of the available information relating to dredging for easy reference by engineers, scientists and managers of dredging companies and federal and state regulatory agencies. It will also be a valuable reference or text for academic courses dealing with coastal process and dredging engineering in curricula for ocean and civil engineering.

The book opens with a brief history of dredging, description of the major dredging literature sources and a brief review of basic fluid mechanics. Dredging involves the removal of sediment from navigational channels, ports and harbors and the placement of the sediment or dredged material at inland or offshore disposal sites. Dredged material is located at the bottom of water bodies such as rivers, lakes, waterways, bays or oceans, and its removal frequently involves the use of a centrifugal pump (dredge pump) to move the sediment/water slurry. There is extensive discussion of dredge pumps including theory, application, performance, and cavitation. This is followed by a discussion of dredging equipment including me-

chanical and hydraulic dredges. Sediment characteristics and their transport through pipelines is addressed. Cutterhead dredging, ocean dredging, beach replenishment and low cost maintenance dredging are described as part of a dredging methods discussion.

Extensive discussions of dredged material placement and disposal and the environmental effects of dredging are contained in two chapters with contributions from experts in areas of confined disposal facilities, water quality aspects, open water disposal, dredged material islands for wildlife and dredging contracts. Current dredging instrumentation and automation technology are discussed including expert contributions on automation, surveys and production meters. Finally, planning of dredging projects is addressed which includes bidding costs, federal projects, environmental impact statements and other requirements. Appendices describe conversion factors, physical properties, government regulations, dredging engineering manuals, containment area example calculations and a description of the U.S. Army Corps of Engineers' Dredging Research Program.

A subject and author index and a detailed table of contents make for easy access to subjects of interest to the reader of this well organized handbook. Ten experts in their specialty field related to dredging have contributed to the text to augment Dr. Herbich's acknowledged expertise in dredging. Some of the material is the result of his 25-year involvement in dredging through the annual Dredging Engineering Shortcourse, annual Dredging Seminar in cooperation with the Western Dredging Association, the Center for Dredging Studies at Texas A&M University, and his teaching of a graduate level marine dredging course. The handbook is well written and supplemented with numerous graphs, and it will be a valuable reference for industry, government and academic institutions.

Robert E. Randall  
Ocean and Civil Engineering  
Texas A&M University  
College Station, Texas