

only an average understanding of ordinary vacuum techniques. The components, their theories of operation, their assembly and use, and the nature of the materials of construction necessary for work in this field are considered.

Guidance and Control of Aerospace Vehicles, edited by Cornelius T. Leondes, *University of California, Los Angeles* (McGraw-Hill Book Company Inc., New York, 1963), 610 pp. \$19.50.

Contents: 14 papers contributed by different authors. 1) Introduction to the Guidance and Control of Aerospace Vehicles; 2) Trajectory Aspects of Guidance; 3) Inertial and Optical Sensors; 4) Inertial Guidance for Cruise Vehicles; 5) Guidance and Control of Rocket Vehicles; 6) Guidance and Control of Mobile-Launched Ballistic Missiles; 7) Passive Attitude Control of Satellite Vehicles; 8) Active Satellite Attitude Control; 9) Orbital Guidance; 10) Boost Glide and Re-Entry Guidance and Control; 11) Theory of Midcourse Guidance in Interplanetary Missions; 12) Lunar and Interplanetary Trajectories; 13) Terminal Guidance for Soft Lunar Landing; 14) Advanced Lunar Operations.

This book, the result of a summer course at UCLA, provides a detailed treatment of terrestrial, satellite, and extraterrestrial systems. It is designed for the student, as well as for the practicing engineer or scientist.

Cryogenics: Research and Applications, Marshall Sittig, *Assistant Director, Office of Research Administration, Princeton University* (D. Van Nostrand Company Inc., Princeton, N. J., 1963), 221 pp.

Chapters: 1) The Really New Frontier; 2) How Cold is Produced; 3) The Great Names in Cold; 4) Where Cold is Studied; 5) How Cold is Measured; 6) How Cold Affects the Properties of Materials; 7) How Cold is Contained; 8) How Cold Is Transported; 9) How Cold Is Used in Gas Separation; 10) How Cold Is Used as a Source of Gases; 11) How Cold Is Used in Space Research; 12) How Cold Is Used in Biology; 13) How Cold Is Used in Food Handling; 14) How Cold Is Used in Electronics; 15) How Cold Is Used in Superconductive Devices; 16) How Cold Is Used in Nuclear and High-Energy Physics; 17) How Cold Is Used in Chemistry; 18) How Cold Is Used in

Metals Fabrication; 19) How Cold Is Used in Miscellaneous Applications.

This book details the properties of cryogenic materials which adapt them to their wide range of uses in science and industry. It outlines the methods by which they are produced and gives concise explanations of the principles of these methods.

Limit Analysis of Rotationally Symmetric Plates and Shells, Philip G. Hodge Jr., *Professor of Mechanics, Illinois Institute of Technology* (Prentice-Hall Inc., Englewood Cliffs, N. J., 1963), 147 pp. \$5.95.

Chapters: 1) General Theory; 2) Theory of Limit Analysis; 3) Yield Conditions for Shells; 4) Circular Plates; 5) Cylindrical Shells; 6) Conical Shells; 7) Spherical Shells; 8) Shallow Shells; 9) Extensions and Limitations of Limit Analysis. **Appendix:** Foundations of Shell Theory.

This monograph requires no previous knowledge of either shell theory or plasticity. The book is intended for students of mechanics or structural engineering, research workers, plasticians, and shell analysts.

Technical Literature Digest

M. H. Smith, *Associate Editor*

The James Forrestal Research Center, Princeton University

Propulsion and Power (Combustion Systems)

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