Manual on Rockets and Satellites. Vol. 6 of Annals of the Internat'l Geophysical Year. Edited by L. V. Berkner, G. Reid, J. Hanessian, Jr., L. Cormier. 508 pp. (ICSU) Pergamon Press, London & New York, 1958. $25.00. *Reviewed by Robert E. Street, University of Washington.*

THIS manual was assembled by Lloyd V. Berkner, acting as CSAGI reporter for the International Council of Scientific Unions, with the assistance of Gilman Reid, John Hanessian, Jr., and Leonard Cormier. It consists of oral and written reports submitted to various IGY committees, groups, or meetings, selected papers from the published literature, chapters from books on the upper atmosphere, and translations of Russian papers, all of which are devoted to the various aspects of the IGY insofar as rockets and satellites were being used in that program. As the editor says in his preface: "Every endeavor has been made to select papers so that all important aspects of the subject are adequately covered within the range of our present knowledge, to provide a guide for those who will carry on observations in the field or who will use the observations obtained by these methods for subsequent theoretical or experimental activities. Therefore, so far as possible, all aspects of the IGY program of rockets and satellites have been included."

The first chapter covers the use of vertical sounding rockets in the IGY program. It is divided according to country and under each is found a description of the type and characteristics of the rockets to be used, the experiments to be performed, and the technique of measurement. For example, twenty-five different experiments to be carried out by the various American agencies are described.

The next chapter of over four hundred pages describes the earth satellite program and forms the principal part of the manual. Papers on orbits, the atmosphere, lifetimes of satellites, and optical and radio visibility open this chapter. Others follow on the Russian program, radio tracking in particular. Translations of Russian papers dated June and July 1957 show circuit diagrams for 20 Mc/sec and 40 Mc/sec receivers, and it is reported later on in this manual that the CSAGI conference of July 1957 recommended the setting up of receiving stations on these frequencies to track Russian satellites.

The US satellite program as of September 1957 is presented in detail including the rocket vehicle, the experiments, and tracking; this included only Project Vanguard at this time, of course.

The book concludes with CSAGI Conference Resolutions and appendices on changes in the US program, and launching of Explorer I and the first two Russian satellites, which brings some of the information up to the date of March 1958. However, most of the book's information is prior to October 1957.

Dr. Berkner certainly fulfilled his goal of presenting the most useful and pertinent information about the role of rockets and satellites in the IGY, just ended,

and still kept the mass of material within the confines of one volume. It whets one's appetite for what we hope will be a future volume in the *Annals*, in which the results of these experiments are as competently reported. Too bad the publisher saw fit to charge such an exorbitant price, since this will probably restrict the purchase of the book to organizations and libraries.

Extremely High Temperatures: Conf. Proceedings (Boston, Mass., March 1958). Edited by Heinz Fischer and Lawrence C. Mansur. 258 pp. John Wiley & Sons, Inc., New York, 1958. $9.75. *Reviewed by W. S. Emmerich, Westinghouse Research Laboratories.*

COMPILED in this volume are the texts and/or abstracts of the 23 papers presented at a two-day conference on extremely high temperatures, held in March, 1958, under the sponsorship of the Electronics Research Directorate of the Air Force Cambridge Research Center. The program was formally arranged in four half-day sessions, two of which dealt with the production and measurement of temperature, the other two with plasma analysis and applications. Due to the nature of the material submitted, the actual program deviated somewhat from the intended one. As indicated by the chairman at the conference, a remarkable number of papers were presented on the subject of plasma acceleration, while topics concerning methods for the production of very high temperature and its measurement, especially at low gas pressure, could have been strengthened by some additional contributions. It may be noted in this connection that a substantial effort in this field, i.e., Project Sherwood, was not actively represented.

The scope of the articles ranges from straightforward reports of experimental work, such as on the upper-temperature limits in the high-pressure discharge, to a rather tentative speculation on the feasibilty of thermonuclear propulsion. The latter example, along with several others, is related only rather vaguely to the central theme of the conference.

The book serves well as a permanent record of the proceedings of the conference. As such, it reflects the conclusions that might have been reached by attending the meetings, namely, that a good deal of information was to be gained on various aspects of plasma technology, but not very much on the subject of extremely high temperatures.

High Temperature Effects in Aircraft Structures. Edited by Nicholas John Hoff. 357 pp. Published for NATO Advisory Group for Aeronautical Research & Development by Pergamon Press, London & New York. 1958. $12.00. *Reviewed by E. H. Dill, University of Washington.*

THIS book was conceived in recognition of the need of the structural designer for more information on behavior of structures at elevated temperatures. Although the title seems to indicate that the material is of a design nature, in reality the state of knowledge