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- Research for Nonmathematicians*, Holt, Rinehart and Winston, Inc., New York, N. Y., 1963, 576 pages, \$7.95.
- G. MEREDITH SMITH (editor), *Understanding Operations Research*, The Canadian Institute of Chartered Accountants, 69 Bloor Street East, Toronto 5, Ontario, Canada, 1963, 73 pages, \$2.50 (paper).
- Summary of the Preliminary Study for the Full Development of the Comahue Region*, Comisión Especial para el Estudio del Desarrollo de las Zonas de Influencia de los Rios Limay, Neuquen y Negro (Comahue), Senado de la Nación, Buenos Aires, Argentina, 1962, 61 pages, no price (paper). The results of a regional development study carried out for a special commission of the Argentine Senate by the firms Italeconsult of Rome and Sofrelec of Paris.
- JULIUS T. TOW, *Optimum Design of Digital Control Systems*, Academic Press, New York, N. Y., 1963, 198 pages, \$7.00.
- LUGWIG VON BERTALANFFY AND ANATOL RAPOPORT (editors), *General Systems: Yearbook of the Society for General Systems Research, Volume VII*, Society for General Systems Research, 787 United Nations Plaza, New York, N. Y., 1962, 335 pages, \$7.50.
- LOUIS J. WALINSKY, *The Planning and Execution of Economic Development: A Non-technical Guide for Policy Makers and Administrators*, McGraw-Hill Book Co., Inc., New York, N. Y., 1963, 262 pages, \$7.50.
- LOUIS WEINBERG, *Network Analysis and Synthesis*, McGraw-Hill Book Co., Inc., New York, N. Y., 1962, 708 pages, \$19.50.
- LOWDON WINGO, JR. (editor), *Cities and Space: The Future Use of Urban Land*, The Johns Hopkins Press, Baltimore, Md., 1963, 268 pages, \$5.50. Nine papers presented at a 1962 symposium sponsored by Resources for the Future, Inc., a nonprofit corporation devoted to research and education in the development, conservation, and use of natural resources.
- LOFTI A. ZADEH AND CHARLES A. DESOER, *Linear System Theory: The State Space Approach*, McGraw-Hill Book Co., Inc., New York, N. Y., 1963, 650 pages, \$15.00.

PERIODICALS

Two New Journals

Journal of Marketing Research

The American Marketing Association will publish in February 1964 the first issue of its new *Journal of Marketing Research*; it will appear quarterly in February, May, August, and November. According to the editor, ROBERT FERBER, University of Illinois, Box N, Station A, Champaign, Illinois, the new journal will publish

articles in the field of marketing research, defining this field in the broadest sense as the application of problem-solving methods and techniques to the solution of market-

ing problems. Articles will be accepted that meet any of the following criteria:

- (a) Presentation of new techniques for solving marketing problems, 'new' in the sense of not having been previously used to deal with marketing problems.
- (b) Demonstration of different ways in which known techniques may be used to solve marketing problems.
- (c) Clarification of marketing theories or of methodology previously difficult to understand.
- (d) Contributions to marketing knowledge based on the use of experimental methods or on the use of other analytical techniques.
- (e) Reviews of developments and concepts in related fields that may be applicable to marketing research.

Essentially, the focus of the *Journal of Marketing Research* is on methodology and on the philosophical, conceptual, and technical problems of research in marketing. Its purpose is to serve as a medium whereby those with research interests can exchange ideas and keep abreast of the latest developments pertaining to marketing research.

The journal will publish book reviews, as well as research and expository articles.

Information on subscriptions is available from the American Marketing Association, 230 N. Michigan Ave., Chicago 1, Illinois.

The International Journal of Production Research

The Institution of Production Engineers of the United Kingdom began late in 1961 the publication of *The International Journal of Production Research*. This new journal is "addressed primarily to those engaged in research into any aspect of production and to those who are charged with research findings for the benefit of others."

In his inaugural editorial, the Editor had this to say:

Production is a meeting place of many disciplines, for the planning, organizing and control of manufacturing industry necessitate an understanding of the nature and interaction of the technical, human and economic forces which are the agents of production. . . It is hoped that, for example, ergonomists will submit papers on the characteristics of worker performance for the benefit of operational researchers and others who frequently have to make assumptions about such performance, and on the nature of human control systems which it might be advantageous to simulate in the design of automatic control systems. It is hoped to receive research reports on the psychological and sociological as well as on the economic and technical aspects of production control.

The study of production, however, is not only a meeting place, but is slowly emerging as a science in its own right. As such, it demands research which is production-centred and not merely the result of secondary or marginal interests of economists, of engineers, of mathematicians or psychologists, indispensable and invaluable though their contributions are. Thus, the principal intention of this Journal is to provide a vehicle for the publications of those university and other research workers whose primary interest is in advancing the science of production, and for whom, until now, there has been no single and appropriate Journal.

The Editor is PROF. N. A. DUDLEY of the Department of Engineering Production, University of Birmingham, United Kingdom, and the Associate Editors are DR. E. N. CORLETT of the same department and DR. S. EILON of the Imperial College of Science and Technology, London. There are Consulting Editors in

India, Norway, Spain, Sweden, Switzerland, the United Kingdom, the United States, and West Germany; those for the USA are PROF. R. M. BARNES of UCLA and PROF. MILTON C. SHAW of Carnegie Institute.

The first volume was completed with a fourth issue dated December 1962; henceforward the journal will appear quarterly in March, June, September, and December.

The Editor may be addressed at the Department of Engineering Production, The University, Birmingham 15, United Kingdom; subscription and administrative correspondence should be sent to The Managing Editor, Miss M. S. C. BREMNER, International Journal of Production Research, 10 Chesterfield Street, Mayfair, London W.1, United Kingdom.

Some notion of the span of interest of this journal may be obtained from the contents of the first six issues:

November 1961

- C. KENDRICK, "Estimation of Service Requirements for Production Purposes"
 E. M. MANSOOR, "Selective Assembly—Its Analysis and Applications"
 W. PENTLAND, J. L. WENNBERG, AND C. L. MEHL, "Research in Machining High Strength Materials at Elevated Temperatures"
 D. J. WHITE, "Optimal Revision Periods"
 S. EILON, "Two Inventory Control Models"
 R. HILLS, "An Electrical Analogue for Solving Transportation Problems"
 G. GREGORY, "A Note on a Method of Estimating the Precision of Time Study Observations"

March 1962

- R. H. BROWN, "On the Selection of Economical Machining Rates"
 R. J. SURY, "A Comparative Study of Performance Rating Systems"
 S. EILON, "Re-circulation of Products through an Inspection Station"
 W. PENTLAND, J. L. WENNBERG, AND C. L. MEHL, "Research into Workpiece Heating for High Temperature Machining"
 Y. EVER, H. GRISBROOK, AND R. C. SMITH, "A Milling Cutter Dynamometer"
 N. A. DUDLEY, "The Effect of Pacing on Worker Performance"

August 1962

- D. J. DESMOND AND C. A. SETTY, "Simplification of Selective Assembly"
 M. BOLLE DE BAL, "La Rémunération au Rendement en Face du Progrès Technique: Crise ou Évolution?"
 W. H. STARBUCK, "A Generalization of Terborgh's Approach to Equipment Replacement"
 K. F. H. MURRELL, "Operator Variability and Its Industrial Consequences"
 H. GRISBROOK, R. H. HOLLIER, AND P. G. VARLEY, "Related Patterns of Grinding Forces, Wheel Wear, and Surface Finish"
 E. J. A. ARMAREGO AND R. H. BROWN, "On the Size Effect in Metal Cutting"
 M. J. SARGEANT, "Controlled Surface Finish on Metal Specimens"
 N. A. DUDLEY, "Some Implications of Research on Motion Time Patterns"

December 1962

- K. E. THURLEY AND A. C. HAMBLIN, "The Supervisor's Role in Production Control"
- S. EILON, "Problems in Studying Management Control"
- J. M. DUTTON, "Simulation of an Actual Production Scheduling and Work Flow Control System"
- S. ZACHS, "The Determination of Optimal Sample Size for Some Work Measurement Procedures"
- DOROTHEA MONNINGTON, "Identification and Solution of Problems Related to Delivery Delay in a Small Precision Engineering Firm"
- E. C. SILLS, "A Four Channel Touch Sensing Equipment"

March 1963

- L. E. DAVIS AND D. H. LUDERS, "A Comparison of Changes in Heart Rate with Rating Values for Some Standard Rating Tasks"
- PAULE REY ET J. P. REY, "La transformation d'un poste de travail; ses répercussions sur la fatigue"
- C. L. SUZMAN AND S. EILON, "Stock Depletion Problems of Commodities Having Decaying Field Life Functions"
- K. B. HALEY, "The Siting of Depots"
- R. H. HOLLIER, "The Lay-out of Multi-product Lines"
- K. G. CHANDIRAMANI, "Refrigeration in Machining"
- J. A. ALCALAY AND E. S. BUFFA, "A Proposal for a General Model of a Production System"

June 1963

- H. GRISBROOK, D. I. ROBSON, AND T. TELFORD, "A Broaching Dynamometer"
- J. BERGLUND AND L. HALLDÉN, "A Discussion on a Criterion for the Choice between Manufacturing on a Positionally Controlled Milling Machine and a Conventional Machine"
- S. ZACKS AND S. B. LITTAUER, "On the Determination of Optimal Power Balance among the Units of a Production System"
- G. NADLER AND W. D. SMITH, "Manufacturing Progress Functions for Types of Processes"
- N. A. DUDLEY, "Work-time Distributions"
- A. WISNER AND R. REBIFFE, "Methods of Improving Work-Place Layout"

Selected Contents***Management Science, October 1963***

- HUGH J. MISER, "The Environment for Effective Operations and Systems Research"
- MICHAEL MASCHLER, "The Power of a Coalition"
- WILLIAM R. DILL AND NEIL DOPPELT, "The Acquisition of Experience in a Complex Management Game"
- R. W. CONWAY, "Some Tactical Problems in Digital Simulation"

- MARTIN L. GERSON AND RICHARD B. MAFFEI, "Technical Characteristics of Distribution Simulators"
- ROY RADNER AND DALE W. JORGENSEN, "Opportunistic Replacement of a Single Part in the Presence of Several Monitored Parts"
- J. J. MCCALL, "Operating Characteristics of Opportunistic Replacement and Inspection Policies"
- F. D'EPENOUX, "A Probabilistic Production and Inventory Problem"
- M. RESH AND P. NAOR, "An Inventory Problem with Discrete Time Review and Replenishment by Batches and Fixed Size"
- FREDERICK S. HILLIER, "Economic Models for Industrial Waiting Line Problems"
- JAMES R. JACKSON, "Jobshop-Like Queuing Systems"
- J. K. SENGUPTA, G. TINTNER, AND C. MILLHAM, "On Some Theorems of Stochastic Linear Programming with Applications"
- J. B. ROSEN AND J. C. ORNEA, "Solution of Nonlinear Programming Problems by Partitioning"
- WILLIAM J. BAUMOL, "An Expected Gain-Confidence Limit Criterion for Portfolio Selection"

Operational Research Quarterly, September 1963

- G. W. THOMAS, "Operational Research in the Steel Company of Wales Limited"
- W. LAMPKIN AND A. D. J. FLOWERDEW, "Computation of Optimum Re-order Levels and Quantities for a Re-order Level Stock Control System"
- R. I. HALL AND S. EILON, "Controlling Production Processes which Are Subject to Linear Trends"
- C. J. TAYLOR, "Some Developments in the Theory and Application of Media Scheduling Methods"
- A. P. MCANALLY, "Cybernetics Realized: The John Lewis Partnership System"
- H. BOOTHROYD AND R. C. TOMLINSON, "The Stock Control of Engineering Spares—A Case Study"
- F. G. FOSTER AND I. ELCE, "A Simulation Programme for Machine Maintenance, Telephone Traffic and Stock Models"

Naval Research Logistics Quarterly, September 1963

- JAMES H. GRIESMER AND MARTIN SHUBIK, "Toward a Study of Bidding Processes, Part III: Some Special Models"
- D. P. GAVER, JR., "A Comparison of Queue Disciplines when Service Orientation Times Occur"
- B. GIFFLER, "Scheduling General Production Systems Using Schedule Algebra"
- JEROME BRACKEN AND THOMAS C. VARLEY, "A Model for Determining Protection Levels for Equipment Classes within a Set of Subsystems"
- R. C. GARG, "Analytical Study of a Complex System Having Two Types of Components"

The Journal of Industrial Engineering, November-December 1963

- MICHAEL E. BRENNER, "Selective Sampling—A Technique for Reducing Sample Size in Simulation of Decision-Making Problems"

- ROBERT E. KINCH, "Human Factors in the Measurement of Total System Effectiveness"
- IRA HOROWITZ, "Formulation of the Price-Cost Relationship in a Class of Plant Investment Decisions"
- E. PAUL DEGARMO AND RICHARD K. SUGITA, "New Responsibilities for Industrial Engineers in Regard to Productivity"
- FREDERICK S. HILLIER, "Reject Allowances for Job Lot Orders"
- RICHARD E. CRANDALL, "Time Allocation—A Staff Department Problem"
- FREDERICK C. WINTER, "Management and Control of Research and Development Equipment"
- SPENCER B. SMITH, "Optimum Configuration of Assemblies in Intermittent Manufacture"
- JAMES W. BARANY, "The Nature of Individual Differences in Bodily Forces Exerted During a Simple Motor Task"
- STANLEY FASBINDER, THEODORE MATTHEISS, THOMAS OATES, AND MILTON SPENCER, "A Simplified Method of Constructing Physical Property Life Tables Based on the Truncated Normal Distribution"
- DAVID A. THOMPSON, "Calibrating Observer Bias in Time Study Pace Estimation"

IEEE Transactions on Engineering Management, June 1963

- IRA HOROWITZ, "Evaluation of the Results of Research and Development: Where We Stand"
- CECIL J. MULLINS, "Prediction of Creativity in a Sample of Research Scientists"
- J. T. MOLIERI, "Management Control and Monitoring Techniques"
- JOEL M. PROSTICK, "Network Integration"
- L. H. KURKJIAN, "Tools for Effective Project Management of Medium Size R & D Programs"
- ROBERT P. ZIEKE, "The Progress Function in the Aerospace Industry—A Historical Analysis"
- EDWARD J. CHERIAN, "The Task Group—A Group Approach to Problem Solving"

Revue Française de Recherche Opérationnelle, No. 27, 2nd Trimester, 1963

- M. MAZOYER, "Les modalités d'application de la Recherche Opérationnelle en agriculture"
- P. MAINIE, "Application des programmes linéaires paramétriques au choix des investissements dans une exploitation fruitière"
- R. PALLU DE LA BARRIÈRE, "Compléments à la théorie des multiplicateurs en programmation non linéaire"
- G. BERNARD, "Incertitude et expertise: exemple d'un problème d'investissement"

Ablauf- und Planungsforschung

Volume 3 (1962), No. 1

- K. BEHNERT AND A. BECKER, "Das Problem des optimalen Standortes unter Berücksichtigung betriebswirtschaftlicher Gesichtspunkte"
- H. GÜLICHER, "Linear Programming zur Lösung von Verladeproblemen"

- M. STEFFEN AND V. STEINECKE, "Kostenplanung eines Walzwerkes mittels Matrizen"

Volume 3 (1962), No. 2

- J. A. NITSCHKE, "Über Optimierungsprobleme aus dem Bereich der Statik"
E. G. LÖSCH, "Optimaler Einsatz von Grubenlokomotiven"
H. MÜLLER-MERBACH, "Die Bestimmung optimaler Losgrößen bei losgrößenabhängigen Fertigungstückkosten"

Volume 3 (1962), No. 3

- K. BEHNERT, "Über eine neue Methode für die Berechnung des optimalen Förderwagen- und Lokomotivbedarfs für den Grubenbetrieb (Polygonmethode)"
E. SOOM, "Optimale Bewirtschaftungsmethoden mit Hilfe statistischer Verteilungen. Teil 1: Bestimmung der optimalen Losgrösse und Wahl der Verbrauchsverteilung"

Volume 3 (1962), No. 4

- E. SOOM, "Optimale Bewirtschaftungsmethoden mit Hilfe statistischer Verteilungen. Teil 2: Anpassung der Verbrauchsverteilung an die Binomialverteilung und Simulation einer variablen Bestellpunktrechnung"
H. P. J. MERTZ, "Wirksamkeitsmessungen bei Beratungsaufträgen"

Volume 3 (1962), No. 5

- H. C. JOKSCH, "Produktionsplanung bei Einzelfertigung"
U. H. WITTENBERG, "Ein Rechenverfahren für die Bestimmung der wirtschaftlichen Nutzungsdauer von maschinellen Anlagen"

Volume 4 (1963), No. 1

- A. WALTHER, "Wechselbeziehungen zwischen Rechenautomaten und Operational Research"
PH. EGERT, "Anwendung des dynamischen Programmierens zum Aufsuchen optimaler Wege in Netzen"
R. MÜLLER, "Lagerdispositionsspiel"

Volume 4 (1963), No. 2

- H. VON FALKENHAUSEN, "Der Howard Algorithmus in Dynamic Programming —Prinzip und praktische Anwendung"
E. KAY, "Wesen und Grenzen der Simulation"
G. TADDAY, "Neue Untersuchungen im untertägigen Förderbetrieb"
E. G. LÖSCH, "Bestimmung der Arbeitsleistung von Bergwerksmaschinen"

Volume 4 (1963), No. 3

- H. STEINMANN AND M. MEYER, "Stand und weitere Möglichkeiten der Anwendung von Linear Programming im Bergbau"
H. MÜLLER-MERBACH, "Optimale Einkaufsmengen"

Note

The December 1963 issue of the *Scientific American* has as its lead article "Vehicular Traffic Flow," by ROBERT HERMAN AND KEITH GARDELS (pages 35-43), a clear, delightful exposition of some of the recent theoretical and experimental work in this field. In their introduction the authors say that "traffic theory in its present state of development has come about as far as astronomy had before Kepler," but the results they discuss give convincing evidence of both the theoretical and practical promise of their research. Most of the article deals with the "follow-the-leader theory" and various experiments that have confirmed its main outlines for single-lane traffic with no passing; the article concludes with a description of the current attempts to extend this work to multilane traffic. If the traffic Kepler is not already working among us unheralded, one may hope that he will appear soon.