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WHARTON SCHOOL CONFERENCE ON OPERATIONS RESEARCH

by Edward A. Lew

A conference on *Quantitative Methods in Management*, sponsored jointly by the Wharton School of Finance and Commerce, University of Pennsylvania, and the Committee on Research of the Society was held at the Wharton School, Nov. 19-21, 1970.

The purpose of the conference, which was attended by more than 90 actuaries and other interested parties, was to focus attention on those operations research and related techniques which are actually in use under the guidance of Professor Russell L. Ackoff and his associates at the University of Pennsylvania.

Prof. Ackoff is one of the pioneers in the management sciences. The prescribed reading for the conference consisted of his two most recent books, *Fundamentals of Operations Research* (with M. W. Sasieni), Wiley, New York 1968, and *A Concept of Corporate Planning*, Interscience, New York 1970.

The conference opened with an address "On the Nature of the Management Sciences," by Prof. Ackoff. He traced the developments leading to the so-called Second Industrial Revolution, which mechanized mental work in much the same way as the First Industrial Revolution had mechanized physical work. Operations research was born from the happy conjunction of instant communication, symbol generating equipment and symbol manipulating machines, which is what electronic computers really are.

These three technologies made it possible to solve many types of complex problems, particularly where the question could be posed in symbolic form and a reasonably realistic mathematical model

Actuaries Club of the Southwest

by V. Clark Beard

Dr. Denton A. Cooley, famous heart surgeon, was the guest speaker at the Spring meeting of the Actuaries' Club of the Southwest. Dr. Cooley's presentation related new developments and techniques in heart surgery to a possible increase in life expectancy.

The following technical papers were presented: *Master and Prototype Plans—A Status Report*, by Robert J. Webb; *Experience With Natural Reserves and Adjusted Earnings*, by G. E. Suiter; and *Group Major Medical*, by Stephen L. Smith. □

Actuarial Meetings

- July 8, Baltimore Actuaries Club
- Sept. 15, Seattle Actuarial Club
- Sept. 21, Actuaries Club of Philadelphia
- Oct. 6, Annual meeting of Actuaries Club of Indiana, Kentucky and Ohio, Cincinnati, Ohio
- Oct. 14-15, Canadian Institute of Actuaries, Montreal
- Oct. 19, Seattle Actuarial Club

of the situation constructed. Usually the first step to the solution was to obtain usable data or information by data processing; the second step generally involved analysis of the information to reach a decision. The Communications or Information Sciences were evolved to deal with the processes that produce information, while the term, *Operations Research*, gradually came to be applied to the mechanization of decision processes. The two together are currently referred to as the *Management Sciences*.

Prof. Ackoff went on to describe the functioning of a typical management system composed of managers, an information system, and an operations research group. The responsibility for the construction and modifications of the mathematical models used in making decisions rests on the operations research group, either with or without consulting the managers; the group would also be entrusted with diagnosing actual or potential failures of the model resorting to statistical quality control procedures.

Professor Julius S. Aronofsky of Southern Methodist University discussed management systems and computer modelling, with emphasis on the growing capacity of computers. He closed his talk with a review of the highlights of the book, *Progress in Operations Research*, Volume III (Wiley, New York, 1969), which he had edited.

The next presentation was by Professor Eric L. Trist, who had broken new ground in investigations of organizational behavior while Chairman of the Tavistock Institute of Human Relations in London. Through the courtesy of the Insurance Company of North America,

Prof. Trist was able to give an account of some of his findings in a study made for that company of the impact on personal insurance of post-industrial changes. This study centered on recent variations in the patterns of earnings during a man's working life and implied that the accumulation of emergency

funds through life insurance can fill a very real need under current conditions.

Some striking examples of the application of quantitative methods in marketing were presented on slides by Patrick J. Robinson, President of Robinson Associates, Inc., a firm of consultants which includes a number of the faculty from the Wharton School. The slides showed how the marketing of different products might be guided on the basis of decisions reached through the use of multi-dimensional scaling and similar methods. Those interested in these methods are advised to consult the book, *Multidimensional Scaling and Related Techniques*, by Paul E. Green and Frank J. Carmone, published in 1970 by Allyn and Bacon, Inc. of Boston.

The conference closed with a review of the proceedings by Dr. Bernard Benjamin, President of the Royal Statistical Society and Director of Studies in Statistics and Operations Research of the Civil Service College, London. Dr. Benjamin succeeded in drawing attention to the elements common to the various quantitative methods discussed and pointed up the problems where the subject matter required different approaches. As a former President of the Institute of Actuaries, Dr. Benjamin was well within his rights to chide the profession for not paying more attention to operations research.

Copies of the more important presentations may be obtained by writing to D. G. Halmstad, Secretary of the Committee on Research, 1 Madison Avenue, New York, N. Y. 10010. □

Conference on Capitalization of Risk Ventures, Oct. 21-23

Editor's Note: A conference on *Capitalization of Risk Ventures*, sponsored jointly by the Graduate School of Business of the University of Wisconsin and the Committee on Research of the Society of Actuaries, will be held at The University of Wisconsin, Madison, Oct. 21-23, 1971. The conference is open to all members of the Society of Actuaries and the Casualty Actuarial Society, as well as to students of risk theory, but attendance will be limited to about 100 persons. Those interested may obtain further information by writing to D. G. Halmstad, 1 Madison Avenue, New York, N. Y. 10010.