NEWSLETTER

Operational Research Society of New Zealand (Inc.)
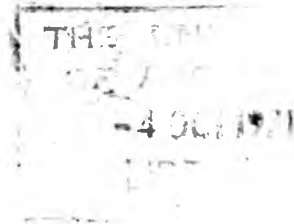
September 1971   Vol 7 No. 4

NEW MEMBERS

The volume of new members is very encouraging and suggests a more widespread appreciation by industry of the benifits of Operations Research. Existing members should make every effort to encourage interested associates to join the society as it is only increasing membership that the services to members can be expanded.

New Members are:-

Keith Angwin	Wellington
Norman Banfield	Wellington
Ron Evans	Auckland
Russell Gibbard	Christchurch
Mos Thomas	Auckland
Bryan Philpott	Wellington
John George	Christchurch
David Jack·	Wellington
Pham Huy Trac	Christchurch
John Collins	Wellington
Dick Andrew	Auckland
Michael Dogson	Auckland
Warwick Marriott	Auckland
Alan Morris	Auckland
Charles Nieukerke	Auckland
Jeanette Nutsford	Auckland
Ken Nutsford	Auckland
Cecil Segedin	Auckland
Bill Sinclair	Auckland
Barney Slocombe	Auckland
Stephen Miller	Auckland
Bob Simpson	Christchurch
John Spring	Auckland
William Younger	Auckland
Michael Road	Auckland
Philip Chenoweth	Wellington
Alan Gibson	Christchurch

Council Notes

Subscriptions The Council has now amended the subscriptions for new members to allow reductions for members joining late in the year. The new rates are:-

Members joining in June, July or August - ½ Subscription
                        September - No   "

(Society Financial year ends September 30)

Branches

In recent weeks inaugural meetings of Society Branches have been held in both Auckland and Christchurch. The actual formation of branches does require some constitutional amendment and the council does not favour the segmentation of the members into a strict branch structure.

The function of the local committees is seen more as one of organisation of local meetings and other functions and generally to encourage membership of interested people in their area.

The council is anxious to preserve the society as a society of members and not an affiliation of branches.

It seems clear that a Wellington committee to organise local meetings will be elected shortly. Following the lines the Auckland and Christchurch this sommittee will be elected by members present at a local meeting.

Canterbury Preliminary Meeting

28 people attended a very successful meeting on July 13 to discuss the formulation of a Canterbury branch. A committee was elected comprising

> Prof. A. Brownlie (Chairman)
> Dr H. Daelenbach (Sec-Treas)
> T. Lusk
> A. McArthur
> J. Taylor

The elected Chairman (Brownlie) has been co-opted to Council.

The address of the Canterbury Committee is P.O. Box 2189, CHRISTCHURCH 1.

O.R. Texts

Listed below is the first of a series of extracts from the U.K. O.R. Society Reading Lists. Where possible the N.Z. prices have been given.

O.R. READING LIST CLASSIFICATIONS

1. Short Introductory Texts.
2. Longer Introductory Texts.
3. Philosophical Background and Methodology
4. Comprehensive Techniques of, and case studies in, Operational Research
5. Specific Quantative Techniques

> Mathematics for O.R.
> Statistics for O.R.
> Probability and Queueing Theory
> Stock Control Theory
> Simulation
> Computers
> Dynamic Programming
> Reliability Theory
> Statistical Decision Theory and Game Theory
> Computers
> Network Theory and Methods

6. Application Areas

> Production
> Traffic
> Marketing
> Management Control System
> Public Administration

7. Ancillary Subject Areas

> Cybernetics and General Systems Theory
> Industrial Dynamics
> Behavioural Sciences
> Psychological Decision Theory
> Economics
> Accounting
> Organisation Theory

8. Journals and Conference Procedures

9. Abstracts and Bibliographs.

1. Short Introductory Texts   N.Z.PRICE

Beer,Stafford   Management Science - the Business Use of $3.35
                               Operations Research. Aldus Books,1968

A 190 page book of easily read prose containing very good
illustrations. The book is of an introductory nature and is
suitable for anyone interested in business to read. It does
not require any special knowledge of mathematics.

Duckworth W.E.   A Guide to Operational Research
                               Methuen 1962
                               Paperback Series 1965 $1.40

A short introductory text with minimal mathematics. Suitable
for a manager who wishes to get some acquaintance with the
subject and for the beginner.

Moore,P.G.   Basic Operational Research
                               Pitman,1969

180 pages of introduction of O.R. to management with consideration
of the approach at the beginning.

Moore P.G.   A Survey of Operational Research
                               Journal of R.S.S..A Vol 129 Pt.3p.399/447
                               1966

A fairly elementary introductory paper to the subject for the
beginner.

Revans,R.W.   Science and the Manager,Macdonald 1965 $3.65

125 pages describing industry for the newcomer, leading up
to the final chapter on the nature of O.R. Good reading
for the graduate/under-graduate with no knowledge of
industry.

Rivett B.H.P   Concepts of Operational Research
                               New Thinkers Library,Watt 1968 $2.30

Anything by Rivett is worth reading. He packs a lot into
this pocket-size book. Includes a good chapter on human
problems.

Rivett B.H.P &   Manager's Guide to Operational Research $6.60
Ackoff R.I.   Wiley, 1962

A brief, broad description of what O.R. is about without
any exposure to techniques. Designed for the Manager to
read who is contemplating employing O.R. Scientists.

Sargeaunt, M.J   Operational Research for Management. Heinemann
                               1965. $3.65

More than half the O.R. Studies carried out have revealed that
the cost of proposed changes in production or organisation
would be greater than the savingsto be expected.' This book
discusses O.R. team, introduction of a computer into a firm.
It also deals with all the usual O.R. techniques.

2. LONGER INTRODUCTORY TEXTS   NZ PRICE

Ackoff R.L &
Sasieni M.W.   Fundamentals of Operations Research.
                      Wiley 1968 $14.20

A good introductory textbook for the professional O.R.
Scientist containing a considerable discussion of the
philosophy of the subject together with exposure to many
of the techniques. There is also a bibliography on
queueing theory. The presentation is a kind easy to
read and the mathematics is kept to a minimum.
The illustrations are of good quality and much is presented
in an easily understood graphical form.

Churchman,C.W.   Introduction to Operations Research
Ackoff,R.L. &   Chapman & Hall, 1957 Wiley International
Arnoff,E.L.   paperback edition.

This 635 page book is an excellent introduction to O.R.
The methodology of the subject is introduced and several
of the techniques well illustrated. There is also a chapter
on the administration of O.R. The mathematics is kept to a
fairly low level. A bibliography is provided at the end
of each chapter.

Flagle,C.D.   Operational Research and Systems
                      Engineering.
Huggins W.H &   John Hopkins, 1960
Roy. R.H.

Very comprehensive handbook. Deals with perspectives,
methodologies and case studies. Fairly condensed, but very
readable chapters ranging from systems engineering process,
quality control, electronic computers, linear programming,
information theory to human engineering.

Miller,D.W. &   Executive Decisions and Operations $15.50
Starr M.K.   Research. Prentice Hall, 1961 2nd
                      Edition 1968

An introductory book or a book for managers. It contains the
minimum of mathematics and gives examples at the end of each
chapter but with no answers. The methodology of the subject is
considered together with the well-known techniques and much
attention is given to application.

Schuchman A.Ed.   Scientific Decision Making in Business- $14.95
                      Readings in Operations Research for Non-
                      Mathematicians. Holt, Rinehart & Winston
                      1963

The author has selected a comprehensive set of 51 papers though
demanding very little mathematical equipment nevertheless succeed
in conveying the sense and substance of management science and
its various techniques. The articles describe the application
of O.R..methods and tools to specific problems of production,

marketing and finance. The book is aimed at students
of schools of business and working executives who have little
knowledge of mathematics and statistics but want somewhat more than
a rudimentary understanding of the what, why and how of
management science.

The material is arranged in an interesting structure, and it
brings together classic papers by many pioneers and authorities
on industrial OR which may otherwise not be readily accessible.

Starr M.K.	'Systems Management of Operations' Prentice-Hall. 1971.	$16.50

Up-to-date management-oriented text.

Theil, H. et.al	Operations Research and Quantitiative Economics. McGraw Hill,1965	$12.95

Lukewarm review in Am.Stat.Ass.J.

Thierauf R.J. & **Crosse,R.A.**	'Decision Making Through Operations Research'. Wiley 1970.	$14.20

Wide coverage with examples and answers. Instructor's
manual also available.

N.Z. Statistition

Several articles of interest to O.R. practicioners have appeared
in issues of 'The Statistician'. We therefore list abstracts of
articles which appeared in No.20 of the above journal.

D.J.Bartholomew - 'The Statistical Approach to Manpower Planning'.

'This paper deals with manpower planning at the level of the firm
where leaving or wastage, is a fundamental feature. It discusses
the methods of describing the underlying regularities of the leaving
processes and the constructing appropriate models for prediction
and control. It also provides a framework to which the
other articles in this issue can be related.'

A.F.Forbes ' Non-Parametric Methods of Estimating the Survivor
Function'

'The paper defines a probability model of the leaving process
dependent on length of service and considers methods of estimation
of the model's probability functions. It considers cohort analysis,
census methods using current data, and an adjusted cohort method
using stock data.'

M.L. Marshall, 'Some Statistical Methods for Forecasting Wastage'.

"This paper describes two methods using completed length of service distributions, for obtaining estimates of the numbers (and their standard errors) of people who will leave an organisation in any future period of time".

A.D. Butlers, 'An Analysis of Flows in a Manpower System'.

"This paper investigates the probability distribution of the number of leavers in a graded organisation in which the grade sizes are fixed. Subject to certain qualifications, it is shown that these numbers are approximately distributed in the Poisson form. It is shown how this result may be used in estimating prediction errors".

Pauline Sales, ' The Validity of the Markov Chain Model for a
Class of the Civil Service'.

"This paper considers a Markov model for manpower flows in a graded system. It presents data for stocks and flows in a branch of the Civil Service and illustrates the use of the transition flow matrix in prediction."

All the papers include good lists of references.

NON Member Subscriptions for Society Publications

The normal way for individuals to receive the O.R. Society
newsletter and New Zealand Operational Research is by becoming
a member of the society. However it is recognised that some
individuals or companys may wish to subscribe to the publications
without joining the society.

Council has therefore set the non institutional subscription
rate of $4 per annum. Individual copies will not be supplied.
The rate for institutions, libraries etc remains at $2.