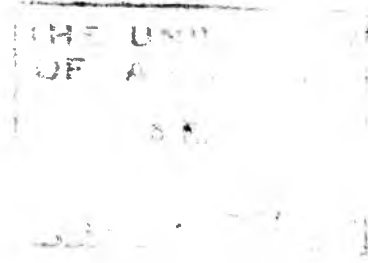




# NEWSLETTER

*Operational Research Society of New Zealand (Inc.)*



JANUARY 1976

VOL.12 No. 2

	Page
AGM NOTES	1
COUNCIL NOTES	2
BRANCH NEWS	2
IAOR	4
A PLEA	5
SUBS & SERVICES	5
CONFERENCES	6

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Newsletter Editor — Kevin Hall

Material for the Newsletter should be sent to:—

9 Fairview Crescent,  
Kelburn  
WELLINGTON, 5.

Closing date for next Newsletter — 26 March.

Registered at the C.P.O. Wellington as a Magazine.

### A.G.M. NOTES

Mr A. Milkop, the treasurer, indicated the worsening financial situation of the Society. This was in the main from increasing outings with static income. If the Society was to maintain existing policies and activities he forecast that the Society would be "in the red" by December 1976. He therefore proposed an increase in annual subscriptions to the levels given below. This motion was passed and will apply to this year's subscriptions.

<u>Type of Member</u>	<u>Near a Branch</u>		<u>Other</u>	
Full	\$10	(\$6)	\$8	(\$5)
Associate	\$8	(\$5)	\$6	(\$4)
Student	\$4.50	(\$2)	\$3.50	(\$1.50)

(previous subscriptions in brackets)

- (i) due date for subscriptions to 20 March 1976
- (ii) a discount of \$1 to be allowed on subscriptions paid within one month of billing
- (iii) reductions for members joining late in the Society year to be determined by the treasurer.
- (iv) collective membership subscriptions to be set by the Council.
- (v) entrance fees to be zero
- (vi) annual subscription to non-members for publications to be:
 

Newsletter and Journal	\$6
Journal only	\$4.50
IAOR	\$6.50

The following were elected to the NZORS Council.

<u>Post</u>	
President	Dr H. Barr
Vice President	Dr K.R. Hall
Hon. Secretary	Mr A.G. Smith
Hon. Treasurer	Mr M. Murray
Council Members	Mr W.P. Foster
	Prof. L.F. Jackson
	Mr D. Cook
	Mr J. Boshier
	Mr J. Scott
Hon. Auditor	Mr P. Hasselberg

Votes of thanks to the outgoing Council were passed with special mention of the services of Prof. Jackson as President, Mr Milkop as Treasurer, Dr Daellenbach for his work on the Journal and for Mr Hasselberg as auditor.

## COUNCIL NOTES

### 20th November

#### 1. Society Policy for the Coming Year

It was agreed by Council that the policy for the forthcoming year should be one of maintaining existing services to members while continuing to stimulate interest in O.R. There should be a drive to obtain new members and to gain corporate sponsors. Each of the various council sub-committees were asked to draw up programmes for the year.

#### 2. Corporate Sponsorship

As mentioned in previous Council notes most of the ground work required before approaching potential sponsors has already been completed. Council felt strongly that some prospective sponsors should be approached as soon as possible.

### 15th December

#### 1. Society Officers

The following officers have been appointed:

Constitutional Convenor	Dr Barr
Education Convenor	Mr Scott
International Affairs Convenor	Prof. Jackson
Membership Convenor	Mr Foster
Public Issues & Awareness Convenor	Mr Cook
Publications Convenor	Dr Hall
<u>Liaison Officers</u>	
N.Z.I.M.	Mr Cook
Productivity Centre	Mr Cook
Royal Soc. of N.Z.	Dr Hall

#### 2. Auckland Calculator Fair

Merwyn Rosser's report was considered. A lot of effort had gone into organising the fair but the number of exhibitors was a little disappointing. However, the fair was a reasonable success and provided some publicity for O.R.

#### 3. Membership Mailing List Procedures

Council discussed possible means of improving the existing procedures. In the past there have been instances of undue delays with the processing of membership applications and address changes. However, it is now hoped that a new streamlined system will soon be in operation.

## WELLINGTON BRANCH MEETING

### August 18

Stopping off in N.Z. on his way to the Australian O.R. conference, Professor David Miller talked on "Recent Trends in O.R. Practice in the U.S.A.". He began by describing the work being done -- the widespread use of L.P.'s, PERT and inventory control packages, the

increasing use of simulation in market forecasting and risk-of-ruin models; and the spread of O.R. into non-profit institutions such as libraries, museums and fire depots.

Then he isolated the major themes in current O.R. practice – like the rejection of the one best estimate; the eliciting of subjective probabilities (but not value judgements) from different experts; and the use of efficiency frontiers in commercial and medical areas.

The last part of the talk dealt with the change in the structure of the O.R. profession : centrally attached O.R. groups are being disbanded; and new research is increasingly being carried out by outsiders, e.g. in marketing, psychology, health and police. Concluding, Professor Miller said the diffusion of the O.R. literature is forcing the academic to either specialise, or turn to the methodology of problem solving.

The meeting finished with discussion and supper.

### 3rd December

#### Airline O.R.

AGIFORS is the Airline Group of the International Federation of O.R. Societies. Kay Fancy, Tony Vignaux and Hugh Barr were fortunate to be invited to the AGIFORS 15th Symposium in Rotorua in October. This talk was on their impressions, and the following is a summary.

O.R. Projects in a number of areas were discussed including applications in forward planning, schedule generation, maintenance, personnel, simulation, marketing and crew scheduling. One received the impression that although air is the most glamorous and expensive transport industry, similar applications would be possible in other transport industries, and could be just as effective.

The major problem to achieving airline profitability is the difficulty of matching supply to demand. With long lead times on procuring equipment and training staff, accurate forecasts of demand were needed. Consequently airlines show much interest in forward planning, and in marketing to increase demand when forecasts are too high.

Computers are an integral part of most airlines because of their importance in data management and reservations. This data base provides a useful basis for O.R. model building. Consequently a number of the O.R. applications involved the construction of large computer systems, e.g. in maintenance, crew rostering and forward planning. However, there were other effective applications which did not depend on a sophisticated data base, e.g. applications to utilisation of equipment.

At the conference one of the more sophisticated O.R. groups explained its approach to model development as follows:

- (a) develop an initial simple model, understood by management.
- (b) use heuristic techniques so that the user understands the workings of the model and the solutions produced.

- (c) use an interactive model so the user's expertise is fully involved in the solution process.
- (d) increase the model's sophistication only when the user is confident with the current version.
- (e) The O.R. group guarantees to keep the model up to date and relevant in the changing airline environment. With this approach, based on interactive computing, and strong and ongoing communication links between the user and modeller, each learns from and improves the other.

Other groups also talked about their O.R. philosophy. A more classical approach was the following:—

- (i) informal investigation
- (ii) feasibility study
- (iii) system development
- (iv) implementation and staff training

which were the project steps followed by a well established group. It was claimed the group had almost never had a project fail. Further discussion indicated that step (i) was a most important step in assessing the client's interest, and the potential for improvement. Step (ii) also included the possibility of redirecting the project towards more achievable objectives.

Of interest from a New Zealand view point was that small O.R. groups of about six people were able to achieve much in the way of good work.

The AGIFORS conference was the first international O.R. conference to be held in New Zealand. Our observers are indebted to AGIFORS and to NAC for being given the opportunity to attend this most stimulating symposium.

### 14th January

#### Planning and Decision-making in Urban Transport

Dr D.A. Quarmby of the London Transport Executive, gave a very interesting and entertaining address on the above topic. He discussed the difficulties of setting up a corporate plan which was clearly understood at all levels and which also was easy to implement. The objective should be (a) understood by management, (b) easy to estimate, (c) consistent with political authority, (d) internally consistent. Dr Quarmby illustrated these points with examples of investment decisions taken by the LTA.

A list of papers and reports published by the London Transport Authority has been put in the D.S.I.R. Applied Maths Division Library. Some of these reports and papers will be sent by Dr Quarmby direct to the Library and will be available to members of this Society.

### INTERNATIONAL ABSTRACTS IN O.R.

With the Abstracts now being published by North-Holland, a standardised four issues per volume and less ordering problems, more members, particularly recent members as yet unaware of the publication may wish to subscribe.

IAOR contains abstracts of all significant papers published anywhere in the world in the areas of Operations Research and Management Science. This means that members in New Zealand have available to them abstracts of papers published in different countries and different languages no matter how obscure the Journal.

The Abstracts are indexed so that whether one is interested in applications or in methodology one can find out for any year those papers which are important. This assists significantly in keeping up to date with particular interests and applications.

Members are advised that the IAOR subscription year is the calendar year and orders for next year's copies must be placed by us by Jan. 1. Subscribers joining at the time our subscriptions are due in March may face substantial delays in order and supply of back copies. For this reason and because of difficulties in keeping track of back issues ordered over the period involved, the policy in future will be that new subscribers after Jan. 1 in any year will receive issues for that year if spare copies are available from that year's order, otherwise they will receive the subsequent years issues and be credited for that year.

Attention of members receiving abstracts is drawn to the fact that as the order committing the Society is placed prior to receipt of your payment for the years volume, we would appreciate notification prior to Jan. 1 of any intention to discontinue subscription.

IAOR is supplied to members through the Society on a non-profit basis – frequently with slight losses – and is one of our more important membership services. Your thoughtfulness will assist in minimising the cost to the Society of over or under ordering. The cost of IAOR is \$6.50

W.P. Foster

### A PLEA

Looking back over the past year one of our main problems has been the lack of feedback from you, the readers, of this newsletter. Is there no aspect of the Society's activities that you wish to comment on?

We would be happy to publish letters, news of members, book reviews, etc., if they were sent to me. The Society is also willing to publish job vacancies as a service to members. There is a charge of \$20 a half page for these advertisements.

We look forward to hearing from you during this coming year.

Ed.

### SUBS AND SERVICES

Those of you at the AGM will be aware that the Society's subscriptions are to go up appreciably this year. We really have no alternative to the increase, which is to cover costs of current society services at today's prices. Subs were last increased three years ago. Since then our journal has commenced, two additional branches have been set up and a two day annual conference

instituted. I hope members will not be upset by the increase. Even at the current price, the Society still represents very good value for money. We certainly compare favourably with the Computer Society, whose ordinary membership sub is \$14 this year.

This is perhaps a worthwhile time to consider the direction of the Society in the future. Up to now Council's general aim has been to establish basic services for the profession – branches, annual conference, journal, newsletter, education survey – in short the channels for communication between members. This has now been done, and I think done well. The basic health of the Society now depends on the enthusiasm with which you, the members, are prepared to use these channels.

We now have to decide "where to from here". Our aims are broader than simply communication, namely, the furtherance of O.R. in New Zealand. My feeling is that we must find additional effective means of promoting O.R. and management science. There are many ways in which this can be done, and no doubt most of us have ideas on the subject. I am sure O.R. can play a greater role in industry and commerce than it currently does.

But this is unlikely to happen without initiatives from the Society or its members. There is the possibility, for instance, of introducing courses on O.R./M.S. for management, society sponsored pamphlets on aspects of O.R., visiting lectureships or scholarships for eminent practitioners, state of the art seminars and workshops, and joint meetings with other societies.

Perhaps our greatest need, if we are to move on to these more ambitious projects, is to increase the size of our membership to give greater coverage in industry, and in the universities. The Society has worthwhile services to offer, and the potential to offer more. Have you enrolled a new member recently?

G Hugh Barr  
President NZORS.

### CONFERENCES

#### 1. EURO II – Second European Congress on Operations Research

Stockholm, November 29 – December 1, 1976.

For further information write to:--

Organisation Committee of Euro II  
C/o Swedish O.R. Association  
Fack 20  
S 10450 Stockholm  
Sweden

#### 2. Second International Conference on Operational Research

Stratford-upon-Avon. April 12 – April 15, 1976

For further information write to:--

Conference Secretary  
Operational Research, Mantell Building,  
University of Sussex  
Brighton BN 1 9RF  
England.

**3. Eleventh New Zealand Mathematics Colloquium**

Massey University, May 21 – May 24, 1976.

For further information write to:--

The Colloquium Secretary  
Dept. of Mathematics  
Massey University  
Palmerston North

**4. Cancellations**

The Science Congress to have been held in Dunedin this year has been cancelled due to lack of support.

5. N.Z.O.R. Annual Conference will be held at Auckland University, August 26 – August 27.  
More information will be published later.