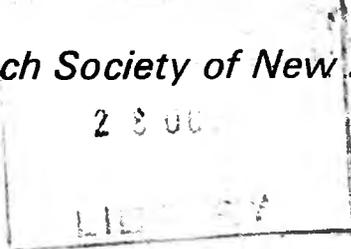




NEWSLETTER

Operational Research Society of New Zealand (Inc.)



SEPTEMBER 1975

VOL.12 No. 1

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Material for the Newsletter should be sent:

9 Fairview Crescent,
Kelburn,
WELLINGTON, 5.

Closing date for next Newsletter — 24 November 1975

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COUNCIL NOTES

Notes from the Council meeting held on the 23rd June.

1. International Federation of Operational Research Societies (I.F.O.R.S.) Conference, Japan — attendance of Hugh Barr.

Hugh Barr indicated that he now hoped he would obtain some assistance from his employer for attending the Conference. However, this would still require him to find a large amount of the cost from his own resources. Since he would represent O.R.S.N.Z., and remembering that an I.F.O.R.S. Conference is unlikely to be so near N.Z. for some years to come, Council agreed that O.R.S.N.Z. should provide substantial financial support for his trip. It was decided that \$200 from existing funds and an additional \$200 from corporate sponsorship (see later) should be supplied towards his expenses. This should be provided assuming the availability of the monies and that a viable financial situation is assured for the Society.

2. I.F.O.R.S. Conference — the business meeting

Each I.F.O.R.S. Conference has a 'business meeting' at which future I.F.O.R.S. policy is discussed. Hugh Barr will, hopefully, now be representing us at the meeting. One matter which Council decided he should raise was the possibility of I.F.O.R.S. organising or assisting 'O.R. travelling circuses!' These would consist of trips for internationally eminent O.R. practitioners on which they would go from country to country giving talks and seminars. Such arrangements could clearly benefit N.Z.

3. Overseas Visitors

It was reported at the Council meeting that, although arrangements have not been finalised, there did now seem a reasonable chance that one or two eminent O.R. people would visit N.Z. after the I.F.O.R.S. Conference. Council members have been doing their best to attract people here to give talks.

4. Corporate Sponsorship

Some thought has been given by Council on obtaining corporate sponsorship for our Society from N.Z. firms. Council considered that a strong O.R. Society would benefit N.Z. and that the additional finance would improve our strength. In particular the additional money could enable us to increase our overseas contacts, both by bringing more overseas O.R. people to N.Z. on trips and also allowing us to assist O.R.S.N.Z. members on approved trips. Final arrangements are now being made for approaching a short list of potential sponsors.

Andrew Smith.

WELLINGTON BRANCH MEETINGS

June 25

The meeting was held at the University and was preceded by a sumptuous meal and a few drinks.

Ian Jones, at present seconded to the Applied Mathematics Division, D.S.I.R. from the Civil Service Department, London, spoke on the British policy of decentralising Government Departments. As part of a study to identify additional areas of work which could be dispersed without unacceptable damage to efficiency of operations, the pattern of face-to-face meetings between civil servants and with the general public was determined. A branch and bound computer model was used to find 'solutions' giving the best trade-offs between resource and social gains and damage to communications and also to evaluate the implications of counter-proposals produced by Departments. A further study made recommendations as to how the opportunity provided by the resulting large-scale moves could be used to rationalise the allocation amongst Departments of the 300 or so buildings in the London area currently occupied by the Civil Service.

The meeting was a great success, due in no small part to the copious quantities of delicious food and drink, and to the insights the speaker gave into the world of Government decision-making.

July 9

A very quickly planned talk was given by Mr Bill Cook, Planning Manager of Shell Oil, Australia. Unfortunately there was insufficient time to mail invitations to everyone. Mr Cook spoke on "A World Energy Model". He concentrated on the model's assumptions – the global distribution of major energy sources, the major consumers, and the difference in national consumption patterns. Developed by the European parent company before the energy crisis, the model crystallised company ideas on the future energy market: e.g. against contemporary opinion, it predicted the current economic power of the oil producers.

With an entertaining speaker and a set of professionally prepared colour transparencies, the audience was more than compensated for braving the weather.

July 15

The meeting was held at the Midland Hotel and was devoted to the subject of forecasting. Professor Tony Vignaux opened the evening with an overview on the subject. Roger Malcolm from N.Z.E.D. followed with a paper on short-term electricity forecasting. His method, an adaptive non-linear regression model, has produced good results in practice. Dr Lermitt then talked on a regression type forecasting system which N.Z.E.D. use for medium term forecasting.

Dave Cook ended the discussion with a description of N.Z.E.D.'s longer term forecasting methods. He has found an interesting connection between the seasonally corrected demand for electricity and economic activity in N.Z. This may eventually lead to a reliable forecast of the economy.

The meeting concluded with a supper.

ELEVENTH ANNUAL O.R. CONFERENCE

This year's conference was held in Wellington and spread over two days. All those who attended will agree that it was a highly successful event and that the Wellington branch is to be congratulated on the organisation of the conference. The following papers were presented at the Conference.

- "A Comparison of various approximations to a quadratic programming Problem" – J.A. George, Canterbury University.
- "The Development of a N.Z. Energy Model" – B.R. Smith, P.D. Lucas and B.A. Murtagh, Victoria University.
- "A Review of the problems of physical distribution in Australia and N.Z." – A.R. Stephenson, D.S.I.R., A.I.D.D.
- "Scheduling Domestic Heating Oil Deliveries" – C.W. Walker; Shell.
- "Planning the Pineapple Mix" – D.W. Foster, Otago University.
- "Heuristic Algorithms for the car pool problem" – L.R. Foulds and D.F. Robinson, Canterbury University.
- "A political redistricting problem" – R.G. Smith & L.R. Foulds.
- "Decision process for admission of students to University" – C.A. de Kluyver, Canterbury University.
- "Bus scheduling between City and Airport terminals" – H.G. Daellenbach and J.A. George Canterbury University.
- "Scheduling Earth Moving Operations" – H.S. Rosser.
- "Critical Link identification in a Network" – L.R. Foulds.
- "Hospital throughput of elderly patients" – J. Reinkin, Department of Health.
- "Contributions to transport problems" – E.A. Cottingham.
- "Shoes and Stock Control" – H.B. Moore, N.Z.F.P. Auckland.
- "An Integer approach to Vehicle Scheduling" – D.M. Ryan, Auckland University.

IMPRESSIONS ON THE JAPAN I.F.O.R.S. AND T.I.M.S. CONFERENCES

The International Federation of O.R. Societies, I.F.O.R.S., holds its conference once every three years. It has been an exciting experience to attend the conference as the New Zealand representative.

The conference opened with a stimulating talk by Howard Raiffa, Director of the International Institute for Applied Systems Analysis on I.I.A.S.A.'s role and achievements. It sees its role as an international research group on systems and analysis. It is working with a number of international co-ordinating agencies and individual countries on a range of projects, e.g.

World energy systems and futures.

Ecology and environmental management.

Large organisations for regional development.

Methodology – a state of the art survey on a number of systems analysis projects.

It appeared that the role of being a consultant's consultant was a difficult one, but that there were plenty of problems to be attacked on an international or regional basis. I.I.A.S.A. provides an opportunity to do this.

Professor Colcutt, a long-time, O.R. man, sounded a thoughtful note at the opening ceremony. He pointed out that O.R. had been successful initially because small committed groups had achieved order of magnitude improvements in performance by questioning assumptions and collecting data, to get new but simple viewpoints. Model building is a relatively recent phenomenon, and he wondered whether we might not have entered a time where the law of diminishing returns applied. Increased sophistication in mathematical modelling did not give large percentage gains in performance, and did not give the insights that experimental testing and involvement gave. Perhaps increased modelling sophistication on its own is a dead end.

The I.F.O.R.S. sessions proper contained some interesting papers. Among them was a discussion of the philosophical underpinnings of modelling and O.R. by H. Boothroyd, which emphasised the complexity of the general modelling situation. International pre-occupation with the continental shelf and oceans was evidenced by a number of papers on management of these resources.

The theme of the conference, namely "How O.R. and O.R. Workers could help in tackling the Problems of Developing Economies" proved a difficult one for delegates to come to grips with. Philip Morse outlined a U.S. suggestion of U.S. aid, helped by I.F.O.R.S. advice, on a three pronged program:

- (1) Organisation of conferences and courses in countries weak in O.R.
- (2) Finance of consultants to set up O.R. groups.
- (3) Education of the country's nationals abroad on scholarships.

This was the most constructive proposal and will be developed further by the U.S.

The Conference also included an interesting and successful set of field trips and workshops. A number of large Japanese organisations were visited on these. Perhaps O.R.S.N.Z. could consider the idea for its conferences.

At the I.F.O.R.S. business meeting, held in conjunction with the Conference, the program and policy for the next three years was decided, subject to ratification by member societies. The next conference is scheduled for Toronto, in 1978, and U.S. operations researcher David Hertz was nominated president. I.F.O.R.S. hopes to play a more visible role in future by circulating a quarterly bulletin to all member society members.

The 22nd International Meeting of T.I.M.S. (The Institute of Management Science) was held following the I.F.O.R.S. conference. The range of topics was broader, with up to 12 sessions operating concurrently. I was able to attend a number of sessions; on planning, systems analysis by Russ Aekoff's group in Pennsylvania, multiple criterion decision analysis, and implementation problems. It was interesting to learn of the contributions of behavioural science to implementation.

Finally, one of the most thought provoking aspects of the conferences for someone concerned with alternative theoretical futures, has been contact with Japanese culture and society, which is so different from our western norms.

Hugh Barr, Kyoto.

EDITORIAL COMMENT

There have been several reasons for the delay in getting this newsletter out. One of the main reasons has been the lack of copy. The newsletter, as I see it, should be a forum for members of the Society to discuss current issues affecting the Society. In spite of earlier efforts to stimulate discussion, there has been very little response. If you do have any contributions for the newsletter, please send them in. Book reviews are also welcome.

As you probably noticed in the last newsletter, we are willing to publish job vacancies ads. as a service to members. If you wish to place an ad. in the newsletter the cost is \$20 a half page.

Ed.

CONFERENCES

Second International Conference on Operational Research 1976.
Stratford-upon-Avon, U.K.
April 12 to 15, 1976.

Further information from:

Conference Secretary,
Operational Research, Mantell Building,
University of Sussex,
Brighton BN1 9RF
England.

Visit to New Zealand of

Dr. Mihajlo Mesarovic.

Co-author of "Mankind at the Turning Point", the second report to the Club of Rome, following "The Limits to Growth".

Sponsored by the Universities of Auckland and Wellington, and the Royal Society of New Zealand.

Professor Mesarovic is professor and director of the Systems Research Center at Case Western University in Cleveland, Ohio, and member of The Club of Rome.

In "Mankind at the Turning Point" the world is grouped in 10 regions - rather than one region as in "The Limits to Growth" - each of which is divided into 6 strata; and some reaction to problem situations is provided by the inclusion of a decision making model.

Public Meetings.

Friday November 21st	University of Auckland (EVG.)
Monday November 24th	Victoria University of Wellington (7:30 p.m., Room LB3).
Tuesday November 25th	University of Canterbury (EVG.)

Further Information: Dr. Grant or
Dr. Robinson.
A.M.D., D.S.I.R.,
P.O. Box 8030,
WELLINGTON.
Phone 727-855.

Dr. R. Mann,
University of Auckland,
AUCKLAND.

Dr. R. Corbet,
University of Canterbury,
CHRISTCHURCH.



SOCIETY ANNUAL GENERAL MEETING

NOTICE

The 12th Annual General Meeting of the Society will be held as follows:

DATE: Wednesday, November 12th, 1975.

TIME: 8 p.m.

PLACE: Room 8a, 1st Floor, Midland Hotel, Lambton Quay, Wellington.

A. TEA MEETING:

The AGM will be preceded by a tea meeting arranged at the same location by the Wellington Branch. The bar will open at 5.30 p.m. and the meal will be served at 6.00 p.m. This will be followed by the presentation of two student papers.

The cost of the meal will be \$ 1.75. For planning the catering will those wishing to partake of the meal please telephone either Kay Fancy or Dave Dalton (both Wgtn. wk. ph. 727-855) by Friday, November 7th.

B. 12th ANNUAL GENERAL MEETING:

Following the tea meeting the AGM will be held. Attendance at the tea meeting is not, of course, a pre-condition for attendance at the AGM.

AGENDA:

1. Apologies
2. Minutes of the 11th AGM
3. Annual Report
4. Financial Statement
5. Subscriptions



Operational Research Society of New Zealand (Inc.)

6. Elections

- i) President
- ii) Vice-President
- iii) Hon. Secretary
- iv) Hon. Treasurer
- v) 6 Council Members
- vi) Hon. Auditor

7. Other matters arising.

C. 1st MEETING OF THE NEW COUNCIL

Agenda:

- 1. Co-options to Council
- 2. General business.

5th Oct. 1975

A.G. Smith
Hon. Secr.