



# NEWSLETTER

Operational Research Society of New Zealand (Inc.)

Registered at C.P.O., Wellington, as a magazine

## SEPTEMBER 1986

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### FROM THE EDITOR

In this newsletter, we are doing a rerun of the OR Review, so if you did not return one last time, here's another chance. We would like to increase our (still significant?) sample of returns!

Some of you will have received brochures for APORS '88 and/or the 1987 International Symposium on Forecasting with your newsletter. Interested Conference attendees are assumed to have picked up brochures there so should not have received any. If you did not receive either brochure and have any interest in either, please let me know.



THE NEW ZEALAND BUSINESS  
PLANNING SOCIETY (INC.)

Luncheon Seminar

### WOMEN IN MANAGEMENT

Prof Susan Birley  
Research Professor  
in  
Entrepreneurship  
Cranfield School of Management

**Time:** 12:15 - 2 pm  
8 October 1986

**Venue:** Rare Books Room  
Turnbull House  
11 Bowen St  
Wellington

**Cost:** \$15 payable to:

The NZ Business Planning Soc(Inc)  
P O Box 691  
Wellington

(by 26 September)

For further information, contact

A W Powell  
(04) 723-147

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# conference 86

Christchurch put on an excellently organised conference and thanks are due to Grant Read and Hans Daellenbach. Temperatures, to an Aucklanders anyway (of rather recent vintage?), were on the cool side. Perhaps the installation of a new sun in Christchurch might help!

The conference participants were drawn mainly from the public sector with some 80-90% from Government or quasi-Government Departments including 50% from the universities. Consequently the papers at the conference reflected this participation, and if we wish to see more private sector OR in the future some encouragement is needed. Maybe a session devoted to OR in the private sector with a head hunt?

Abstracts of the papers (with exceptions) appear in the NZ Journal of OR (Vol 14, No 2, July 86) but for those of you not there, I have chosen a selection of papers for comment.

The keynote speaker, Bruce Murtagh of MINOS fame, outlined the state of OR in Oz. From my point of view, the more interesting part of his talk was when, he returned to describing some applications of MINOS. Bruce gave a second paper, "Currency Risk Minimisation Using Portfolio Theory" which was excellent. From this paper we learnt how to play the international money market by 'hedging' (a term for buying or selling currencies to avoid losses from the fluctuations in floating dollars, etc.), with little risk if not profit.

In view of my earlier comment upon private sector participation and because the paper was good, I must mention one of the more applied papers given at the conference by John Buchanan from Price Waterhouse in Auckland. John spoke on a simulation model which he had built for Countrywide and outlined the process of collecting, analysing and using real data to construct a queueing simulation model of Countrywide's branch activity. He then talked about model experimentation in order to derive good branch layout with the idea of minimising queue waiting time. It was interesting to hear that the model had been written in BASIC on an IBM PC and the Countrywide staff themselves were now using the model to experiment themselves. I liked the paper because it demonstrated all the skills that must be present to practise OR and the role that microcomputers are beginning to play in OR implementation.

Dennis Maddever of the Wool Research Organisation gave another applied paper demonstrating wool blending with the aid of linear programming (non-linear in the future) and he was the only person at the conference to use modern technology in his presentation, in the form of a video film.

An entertaining talk was given by Mike Hayes from Sheffield University (UK) with an excellent (cynical) view of the hierarchical structure of the firm. Mike recommended that we all read "The Carpet Makers" by Jones and Lakin for further enlightenment. In the last session of the conference, David Robinson from the University of Canterbury gave an enjoyable talk on floorplan design, with exactly the right balance of humour for this late stage of the day. Likewise Mike Lennon from the University of Auckland talking on university examination timetabling appealed to many (judging by his reception) when he rounded off the conference on a good note.

There were other good papers. For example, Les Foulds finishing his hour-long tour de force on Just-In-Time methods, just in time; Gary Eng started his paper on sawmill modeling by having a dig at acronyms and concluded with a definition of lost time of the third kind, viz. the closure of a certain pulp and paper mill.

The Conference Dinner was a top class effort at a well known city restaurant and an enjoyable evening was had by all.

I suggest that if you did not attend the conference this year, then make sure you go along to next year's in Wellington and then you will be able to form your own impressions rather than relying on my stilted, if not cynical, commentary of the proceedings.

Thanks again to Grant and Hans for all the work they put in (and they still gave papers!). Also a thank you to Fred Baird for arranging the Dinner and other gastronomic delights for the breakfasts and lunches. And Don McNickle, an admirable backstop for Hans and Grant.

Dave Whitaker  
AMD/DSIR, Auckland

#### STUDENT PAPER PRIZE 1986

Students doing O.R. (or related projects) as part of their studies towards a university degree, and particularly their supervisors, are reminded that ORSNZ awards a prize for the best student paper each year. Entries should be in to the address given below before 31 January 1987.

The project paper may be of any reasonable length and may be joint-authored. The winner(s) are invited and sponsored to present their paper at the next ORSNZ Conference. One copy of the report should be sent to:

Dr D.M. Ryan  
Convenor, Student Paper Prize, ORSNZ  
TAM Dept  
Auckland University  
Private Bag  
Auckland

Prof G.A. Vignaux  
Education Officer, ORSNZ



**AUSTRALIAN & NEW ZEALAND ASSOCIATION FOR THE  
ADVANCEMENT OF SCIENCE**

**PALMERSTON NORTH  
NEW ZEALAND**

**"SCIENCE IN A  
CHANGING SOCIETY"**

**26 — 30 JANUARY  
1987**

Contact for further information—

**Dr. Michael Baxter  
Organising Secretary  
56th ANZAAS Congress  
Massey University  
Palmerston North  
NEW ZEALAND**

**Telephone : (063) 69-099  
Telex: MASUNINZ30974**

**AMC 87**

**AUSTRALIAN MATHEMATICS SOCIETY**

**APPLIED MATHEMATICS CONFERENCE  
1987  
WAIRAKEI, NEW ZEALAND**

**8th — 12th February, 1987**

Contact for further information—

**Dr D.M. Ryan  
TAM Dept  
Auckland University  
Private Bag  
Auckland**

## WHAT ARE THE FUTURE NEEDS & DIRECTIONS OF OR ?

The National Research Advisory Council (NRAC) is reviewing the future needs of Science & Technology in New Zealand, to recommend strategies for the next decade. Generally these reviews are being compiled by the appropriate Scientific Societies. ORSNZ has been asked to contribute, along with the Mathematics Society and Statistical Association, to a review of mathematics, statistics and operational research. We have been asked to review what research and development (R&D) is being done, and to work out strategies for meeting its needs.

This is a good opportunity to find out more about our members, the work you do and the needs you have. Please fill out this questionnaire now (it will only take a few minutes), then send it to:

OR Review, ORSNZ, Box 904, Wellington

All replies will be treated  
as confidential

1. Who is your EMPLOYER? (or give a description)
2. Job Title, Place in Organisation, Size of your group
3. Approximately what proportion of your time do you spend on:
  - (i) using applications?
  - (ii) developing applications?
  - (iii) developing new techniques?
  - (iv) corporate analysis & planning?
  - (v) administration and meetings?
  - (vi) other? (specify)
4. Which of the above does your organisation view as R&D?
5. Is the term "OR" recognised in your organisation?
6. Is OR growing in acceptance, and if so, how fast?
7. What are the MANAGEMENT ATTITUDES towards your work
  - eg - what support do you have for your work?
  - who do you report to?
  - is the organisation receptive to new ideas?
  - how would you describe your organisation's overall attitudes?
  - other? (specify)

8. How would you rate the RESOURCES available to you (eg Nil, Poor, Adequate, Good, Excellent) in

- computers?
- software?
- personnel?
- data availability?
- other (specify)?

9. What CONSTRAINTS are limiting R&D in your organisation?

- eg
- sales tax on software, hardware
  - lack of tax incentives for OR & other R&D
  - lack of understanding of OR in your organisation
  - lack of management support and recognition
  - inadequate resources (eg as in 8.)
  - other (specify)

10. What SUGGESTIONS can you make to counteract these constraints?

- eg
- remove sales tax
  - make OR R&D a tax-deductible expense
  - provide OR appreciation courses
  - better publicity
  - other (specify)

11. What PRIORITIES do you see for effort in R&D in OR? eg for

- development of new techniques
- wider application of existing techniques
- development of new approaches e.g. expert systems - specify particular application areas if possible
- other (specify)

12. What can ORSNZ do to help you in your job?

13. What can the GOVERNMENT do to help promote the use of OR?

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# TIMS XXVII

This Conference was held in Gold Coast City, 21-23 July. TIMS (The Institute of Management Sciences has some 6000 members, mainly in North America. This is the first conference it has held in the Southern Hemisphere. The conference consisted of plenary and 14-track sessions so while there was plenty of choice as to what type of session one attended some good papers were undoubtedly missed.

Of the plenary sessions, W. Edwards Deming, on quality assurance, and his general theory of management (including the 14 Deming principles) was stimulating. Martin Starr on "Achieving Global Competitiveness: The Contribution of OR/MS" said that the Americans could see the outward supremacy of the Japanese in modern manufacturing methods, but could not quite see why. Some of the apparent reasons were that the Americans had less consideration for both their customers and employees while the Japanese put emphasis on customer loyalty and the team approach. American manufacturers did not necessarily hold long term strategic views. They put emphasis on measures such as return on equity while the Japanese tried to maximize survivability, continually looking for incremental improvements in their methods and accepting a lower rate of return on equity.

On the transport side of things, R. Wilkinson described Westrail's (Western Australian Railway) on-line "Computerized Rolling Stock" system. Aside from the quantitative aspects, he reported measures Westrail had taken to face competition, viz. no guardsvans, more block trains, reduced shunting and workshop reorganization. Staff had been reduced from 10000 to 6000.

O. Madsen, of INSOR, Denmark, talked of their work on airline over-bookings using stochastic programming for (the other) SAS (Scandinavian Airline System). A lively session was held on crew rostering and workforce scheduling. This is currently an active area of OR in NZ as both private and public organizations seek better deployment of their workforces in the face of increasingly difficult economic circumstances and entrenched worker attitudes towards overtime and penal rates.

In another plenary session, Gerald Hoffman claimed that the real rate of return on investment is not a good tool for project evaluation as it i) does not take into account the opportunities that projects open up, ii) does not deal well with uncertainty, or iii) with non-quantitative factors. On organizational structures, the 1970s philosophy of putting unrelated activities together to create synergy has not worked - perhaps Fletcher Challenge's divestment of its finance companies and other corporate rationalizations is indicative of this ?

There were a number of papers dealing with futures as a method of hedging. Certainly, many export/import companies in NZ still have a lot of catching up to do, very quickly.

On the whole the conference was a mixed event. TIMS seems to lack new blood with the old brigade getting out of step with reality and no young rising stars to take up the torch. There was the usual mix of good and poor presentations, with many papers being technique rather than subject oriented. The conference did show that the NZ OR community is as good as that overseas.

Hugh Barr

**CALL FOR ABSTRACTS**  
16TH ANNUAL INTERNATIONAL PRIZE COMPETITION

**FRANZ EDELMAN AWARD  
FOR MANAGEMENT SCIENCE  
ACHIEVEMENT**

A \$10,000 COMPETITION, WITH A \$4,000 FIRST PRIZE (808)

Sponsored by TIMS, this prize is awarded for an implemented piece of work in Management Science.

1. The initial requirement is for an abstract of the work (typed double-spaced, <= 2 A4 pages, 20 copies) to be sent to:

TIMS/CPMS  
c/- Ricardo N. Zapata  
Bell Communications Research  
290 West Mt Pleasant Ave  
LCC 1E122, Livingston  
NJ 07039-2729, USA

immediately.

2. Finalists will be notified by 14 November 1986

3. Each finalist will submit to TIMS/CPMS a full paper by 20 February 1987. The paper shall document the work, its implementation and its impact on the organization under study.

4. The finalists will present their papers at a Special Session of the ORSA/TIMS Meeting, New Orleans, May 10-13, 1987. The judges will then determine the prize winners.

5. The prize citation goes to the client organization. The author(s) will receive the cash award.

# FORTHCOMING CONFERENCES

1987

April 8-10 ICOTA - Int. Conf. on Optimization Techniques & Applications, Nat U. of Singapore, Kent Ridge

May 26-27 ISF-87, 7th Int. Symp. on Forecasting, Boston, Massachusetts.

Aug 11-14 3rd Int. Conf. on Advances in Production Management Systems, Winnipeg, Canada.

Aug 31- Sep 4 13th IFIP Conf. on Systems Modeling & Optimization, Tokyo.

For further information, contact:

Matthew Civil  
Secretary, ORSNZ  
P O Box 904  
Wellington  
Ph (04) 721-000 x786

# APORS '88

First Conference of the Association of  
Asian-Pacific

Operational Research Societies  
within IFORS

24 ~ 26 Aug. 1988

Seoul, Korea

N.Z. Council  
Box 904,  
Wellington

Wellington Branch  
Box 904,  
Wellington

Auckland Branch  
C/- Dept TAM  
Auckland University  
Auckland

Canterbury Branch  
C/- Economics Department  
University of Canterbury  
Christchurch.