



NEWSLETTER

Operational Research Society of New Zealand (Inc.)

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

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Editor ☎ (04) 723-550

September 1990

New Members

A warm welcome to new members since the last newsletter:

David Boland	Business analyst	Power Corporation
John Culy	Consultant	NZIER
Joseph Davis	Lecturer	University of Waikato
Andrew Gaudin	Consultant	Ernst & Young, Wellington
Ian Hampton	Tutor	Manukau Polytechnic
Curt Hjorring	Student	University of Auckland
John Hurst	Student	Victoria University of Wellington
Simon Jurke	Student	Victoria University of Wellington
David Keane	Lecturer	Victoria University of Wellington
Kerry Mayes	Consultant	Ernst & Young, Christchurch
Olly McCahon	Student	University of Canterbury
Brendan Ring	Student	University of Canterbury

Auckland Savings Bank

Corporate member

Conference Proceedings

Copies of proceedings from the 1990 conference are available to individual members for \$10.00 per copy from the Treasurer, Rona Bailey (⚡ P.O. Box 1335, Wellington, ☎ (04) 727-855 x 862). Postage outside New Zealand is additional. Proceedings from previous years are also available at \$5.00 per copy)

Martin John Rowe

We record with deep regret the death of Martin Rowe in a car accident on 14 September. Martin was Secretary of the Wellington Branch. He graduated from the Theoretical and Applied Mechanics Department at Auckland University with an Honours Master in OR in 1988. From there he joined the Applied Mathematics Division of DSIR in Wellington, and had started a promising career in OR.

Martin was enthusiastic and systematic. His forthright and thoughtful approach made him easy to work with, and gave encouragement to those around him. Since moving to Wellington, he had expanded and maintained his other interests including music, tramping, climbing, and native bird watching. We extend our sincere condolences to his family and friends.

Corporate Membership and Sponsorship

Have you thought of suggesting that YOUR organisation become a corporate member or corporate sponsor of ORSNZ?

A corporate member receives one mailing of the Society's journal (APJOR), newsletter, notices of meetings, conferences and courses. Any employee may attend ORSNZ conferences and courses at member rates.

A corporate sponsor receives up to five copies of all the Society's mailings, which are sent to specified employees. Any employee may attend conferences and courses at member rates.

The current subscription is \$80 for a corporate member and \$200 for a corporate sponsor.



On the difficulty of forecasting

“Had Cleopatra's nose been shorter, the whole history of the world would have been different.”

Blaise Pascal

The 26th ORSNZ Annual Conference 20-21 August, 1990 University of Waikato

Two reviews

A New Experience

The conference was held for the first time ever at the University of Waikato, and what an excellent location it proved to be. The pre-conference gathering on Sunday evening at Bryant Hall set the tone for the whole conference - it was relaxed, warm, and friendly, and well-catered (even if the large bowl of olives did finally manage to defeat us).

The conference itself commenced on Monday morning with a brief welcome from Prof. Wilf Malcolm, Vice Chancellor of the university. This was followed by the introduction of the conference bell by John Buchannan. The bell worked - the conference ran to schedule throughout.

The first invited speaker, Prof. Russell Knight of the University of Western Ontario, provoked a lively and somewhat heated discussion with his presentation on the relationship between OR and entrepreneurship. The consensus seemed to be that at least some OR in New Zealand was being entrepreneurial, even if just on a small scale.

Victoria Willis from Electricorp demonstrated that process well in describing the modelling activity there. It has been successful largely because the modellers both responded to and predicted the requirements for models to assist in decision making. The result is that their models are used for investigation and decision making at many levels in the organisation.

It was a pleasure to see Mike Saunders again at the conference. He gave an interesting talk on current trends in LP and NLP, followed by some of the recent gossip about interior point methods. The most significant part of this was that AT&T were attempting to patent the interior point methods, and were demanding unreasonable royalties for their use. They have even threatened patent infringement suits against individuals who use, and people who develop and market, algorithms based on interior point ideas. This trend is highly disturbing and is actively discouraging people from developing and marketing good LP and NLP codes.

John Scott initiated a wide ranging examination of the OR education process in a thought provoking paper relating concepts of experiential learning and other learning theories to OR education. A lively discussion

ensued. Hans Daellenbach described a course at Canterbury University which introduced modelling to first year students. Despite some difficulties with the text and with the desire of students to know the 'right' way, the 'right' answer, the course was successful in developing good modelling skills and an awareness of sensitivity analysis. The two papers were most reassuring as they indicated that it is possible to provide an innovative and effective OR education. This session was followed by a panel discussion, featuring our three 'elder statesmen', as John Scott called them, with their 70 years of OR teaching experience. This provoked an first rate and wide-ranging discussion.

Monday evening featured an magnificent conference dinner at Byrant Hall, which was accompanied by a good jazz trio. The introduction of musical chairs prior to dessert certainly meant we had the opportunity to meet a number of people during the evening. Prof. Bob Oliver of the University of California, Berkley, presented an impressive paper on influence diagrams, which he advocated as a graphical technique to depict the flow and timing of information relative to decisions. They are helpful in model building as they can reveal otherwise hidden conditional dependencies. Models are hard to get right, so this tool is a useful aid in the process. He described several interesting applications, including a study for the FAA on mid-air collisions, which allowed the investigation of two proposed collision avoidance mechanisms.

Several applications papers were presented, including a description by Rob Jackson and Gordon McRobbie of the successful use of LP in assisting dairy farmers to discover new operating strategies in the face of changing price structures. Mark Byrne described heuristic methods for the vehicle routing problem with both pick-up and delivery. John Buchanan gave an excellent presentation on the problem of improving vehicle utilization at Bay of Plenty Electricity. It was good to see that the project had been carried through to successful implementation.

An innovation at this conference location was the group photo. John Buchanan organised this outside in the brilliant sun that Hamilton provided on the Tuesday to compensate for the wet weather of the previous day.

There were several technique oriented papers, including a good student paper from Simon Jurke on studying the behaviour of simulations when there is a parameter change. David Robinson also discussed the optimisation of a complex faulted plain function that arose when trying to study how branching patterns are organised.

The conference concluded with a session on decision support systems. This included a slide show accompanied by the lilting Irish voice of David Keane introducing executive information systems. He invited us to consider the challenges these offer the OR specialist. Will we be willing to take up that Challenge?

That is probably the biggest question I feel we are now faced with, following this conference. We were offered a number of challenges in this conference - to teach using NZ-based case studies, to be innovative in our teaching styles, to be entrepreneurial in our promotion and use of OR, and to consider the role of OR in executive information systems, among others. Will we take them up or leave them for someone else to consider?

This was a marvellous conference, with a good mix of papers from commerce and industry. It was pleasing to see that nearly half of the 70 delegates were from commerce and industry. There were also several students at the conference. It is to be hoped that next year's organising committee has noted the number of promised papers from either these students or their supervisors!

The organisers of this conference in the new location of Waikato University have done well. I hope it will not be long before we return to sample again their hospitality and organising skills.

Susan Byrne

Reflections from the Management School

Andrew Steele, Michael Jansen and I, three Waikato University students, attended the 26th Annual Conference of the Operational Research Society of New Zealand, in August this year.

Our background, it seems, is different to almost all other students of OR. We consider ourselves to be tomorrow's *Managers*, as opposed to tomorrow's *OR Academics* or *Practitioners*, but realise the first and the last intertwine. To be effective managers, we expect to need a much stronger understanding of OR, so that its potential as a management tool can be realised. It was for this reason that we were encouraged to attend the conference. Our mentors felt that this kind of informal exposure to practitioners and the "state of the art" in current theory would provide some focus to our fourth year undergraduate studies in OR.

Not only was this the outcome, but we also enjoyed ourselves immensely. The conference laid to rest any fears in our minds, encouraged by some participants, that OR was becoming too theoretical and lacking in meaning to the person in the street, or to the manager who perhaps ought to benefit from OR. Michael Saunders' paper was an excellent example of the application of the latest techniques.

The guest presenters from overseas also helped us feel part of the international scene. All in all, it did inspire us. It was an experience well worth repeating.

Jim Peterson

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Rona's trip to the sunny side of the world

I'm back, and the trip is disappearing into the mists of time. Before it disappears completely, here is a jumbled account of the sights and highlights.

Disneyland was amazing. We had a wonderful time, rode on nearly every ride there was. At first I wasn't sure about the roller-coasters but we went on all of them: fast ones, wet ones, ... One of the best was Star-Tours which is actually a simulator and you rode through meteor showers, travel at light speed, get shot at, ... San Diego Sea World was fun too. Tijuana, Mexico was interesting, but I don't think I'll go back.

Our stay in Rome was brief but we caught the Trevi fountain, Coliseum, Pantheon and the Vatican City.

Athens was hot and dusty and I wouldn't go back there either. the IFORS conference was good --- lots of people but some interesting papers. One surprising (to me) thing was the number of no-shows --- you would turn up to a session of 3 papers and find that only 1 or 2 of the presenters were there. There were 18 streams so it was hard to work out which papers to go to. I did represent us at the APORS meeting and briefly at the IFORS meeting. However business consisted largely of reports. Most of the real business is done by post with member societies. But it was interesting to see the people whose names I have seen so many times.

I attended (among others) the following papers:

- *Helping doctors and managers to "solve" resource management problems: the example of hospital waiting lists*, David Worthington,

Health services management Research Group, Department of Operational Research and operations Management, School of Management, Lancaster University. (have copy of paper)

- *Improving the use of hospital resources*, Jan Vissers, Eindhoven University of Technology and National Hospital Institute, Utrecht, the Netherlands. (have copy of paper)
- *Protecting the blood supply via HIV screening models*, W. P. Pierskalla, University of Pennsylvania et al.
- *Operation Research and the reform of the UK health service*, G. D. H. Royston, Department of Health, UK.
- *An integrated management programme for the economic appraisal of new medical technology in the absence of reliable failure data*, H. G. Daellenbach, University of Canterbury, New Zealand. (nothing like supporting ones fellow countrymen)
- *Operational Research for HIV infection and AIDS*, S. C. Brailsford and A. K. Shahani, University of Southampton, UK.
- *The dog that didn't bark: the unrealized social agenda of Operational Research*, Jonathan Rosenhead, London School of Economics, UK. Plenary session.
- *Community Operational Research: thinking globally whilst acting locally*, Colin Thunhurst, Lecturer in Quantitative Techniques, Nuffield Institute for Health Services Studies, University of Leeds, and Director, Community Operational Research Unit, Northern College of Residential Education.

Catching trains through Europe was an educational experience --- stations that gave announcements only in Italian, rail timetables in German, conductors who don't speak English, conductors who wake you at 2.30 a.m. to check your tickets, trains with no eating or drinking facilities on board (not even water), ...

The countryside was beautiful though. I especially loved the Austrian and Swiss countryside. Little brown cottages with window boxes full of flowers. Hills that you expect to see Julie Andrews running across any minute. Forests where you look for the wolf and Red Riding Hood (or Peter). What you see on the movies, what you read about --- it's really like that.

We had a quick tour of Vienna, Zürich, Lucerne and Paris. Shopped in the Bahnhofstrasse, Zürich, Champs-Elysees and Rue Saint-Honore in Paris. Visited places, gardens, museums and art galleries. Had a wonderful time.

By the time we arrived in London, I was sick (with tiredness I think), so wasted a whole day (horrors!). We did however manage a tour of London which included the Changing of the Guard, the Banqueting House, Westminster Abbey, St Paul's and the Tower of London, as well as a drive around a fair bit of London. We also went to Madame Tussaud's and Harrods.

After Mum and Dad arrived we saw lots of Britain. We went to Weston-super-Mare, Bristol, Chepstow in Wales (four times in two hours), the Forest of Dean (where the Baileys come from), Windemere, Wordsworth's Cottage in Grasmere, Galasheilds, Edinburgh, Lochgelly, Hadrian's Wall, Bath, Stratford-on-Avon, Old Trafford, Sherwood Forest, The Yorkshire Dales, Inverness, Crieff, Dunfermline, Pitlochry, Culloden, Sterling, ... We saw castles, palaces, parks, lochs, ...

Coming home we stopped over in Hong Kong. Before that though, the plane had to stop in Delhi for an hour or so, and they made us get out of the plane. It smelt like a sewer and felt like a steam bath; this was midnight and we didn't even get out of the airport! I also was not impressed the their security procedures and have seen enough of India to last me a lifetime.

Hong Kong was interesting too. Hot but not too unpleasant and wonderful shopping. Then we arrived back in New Zealand --- glad to be back where the language and the money were familiar.

And will I go again? That remains to be seen.. But I did wonder why I never went before. Now to sort out my hundreds of photos ...

Rona Bailey

Erratum

In the last issue we announced the birth of Pru and Mike Saunder's daughter **Tania**, but misspelled her name with a 'y'. It was good to have Pru and Mike back in NZ for a few weeks, and to welcome young Tania. What a delightful young lady she is too!

Your editor has also had a trip through Europe, and, given a page to fill, needs little persuasion ...

An Innocent Abroad

There comes a time in the affairs of all men when they must lay down, however briefly, the burden of office, and follow a dream. Thus it was that I found myself deposited in the middle of Europe, for six weeks. Not really time enough for the *Grand Tour*, but time enough to explore its history.

The first week was spent on a tour of Greece, cunningly disguised as an International Symposium on Forecasting. The whole conference was most impressively organised, particularly the opening ceremony, set on a hill overlooking the Parthenon, which included readings from the seven prophesies of Delphi - accompanied by a lady playing the Harp! The Delphi theme of course was a common thread throughout the symposium, the Oracle was duly consulted, so that forecasting methods will be very different from now on! Rather than spending all the time in formal presentations, the usual method of working was to gather a few disciples around you (in the style of Socrates, Plato, *et al*), preferably around the swimming pool, for endless discussions!

After the symposium I could legitimately give up all pretence at working, and having set up several appointments in England several weeks later and thousand of kilometres away, I was free to roam through Switzerland and France, suitably armed with Berlitz phrase books in French and German. (Rapidly coming to the conclusion that two hours practice beforehand did not make you a fluent foreign language speaker). Switzerland was every bit up to my expectations, mind you I never did see a gnome in Zürich, although every second building is a bank. A Swiss bank is a strange institution, offering to sell you 1kg gold bars or to pay you a giddy 6% interest on your money! The scenery is almost up to N.Z. standards, but much much more accessible by mountain railway. By the simple expedient of emptying one's wallet at the ticket counter, any of the many mountain top views becomes instantly reachable.

Finally arriving in England, I could at least carry out an intelligent conversation with people in (something resembling) my own language. It was very hot, and never rained once (I have had to revise all my English weather jokes).

I had a good time, but its nice to be back in NZ.

International Events

Plan now to widen your Horizons

1990 International Conference
Operations research/Management Science: Techniques & Applications
Manila, Philippines

11-14 December 1990

Contact: Ms Elise de Rosario
San Miguel Corporation
40 San Miguel Avenue, Mandaluyong
Metro Manila, Philippines



First IFORS specialised conference
DECISION SUPPORT SYSTEMS
Bruges, Belgium

27 - 29 March 1991 (Tutorial - 26 March)

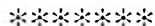
Contact: Prof J.P.Brans, IFORS SPC 1
VUB CSOO, Pleinlaan 2,
B-1050 Brussels
Belgium



IFAC 9th Symposium on Identification and System Parameter Estimation
Budapest, Hungary

1-6 July 1990

Contact: Dr Margit Zierman
Levay u. 9/A
H-1022 Budapest
Hungary



Deadline for the December Issue

In order that I can enjoy the Christmas parties, could contributors please have material in by **15 December**, so that the issue can be sent out before the end of the year. *Ed.*

The European Congress on Operational Research
EURO XI
Aachen, Germany

16-19 July 1991
"Operational Research methods for supporting high technologies in the
emerging Europe"

Contact: Prof. Dr H.J. Zimmermann
Operations Research
Templegraben 64, RWTH Aachen
5100 Aachen, Germany

14th International Symposium on Mathematical Programming
Amsterdam, The Netherlands

5-9 August 1991

Contact: 14th International Symposium on Mathematical Programming
Paulus Potterstraat 40
1071 DB Amsterdam, The Netherlands

APORS '91
2nd Conference of the Association of Asian-Pacific OR Societies
Beijing, China

27-30 August 1991

Contact: Prof Weiwu FANG
APORS '91 Secretariat
c/- Institute of Applied Mathematics
Chinese Academy of Sciences
P.O. Box 2734
Beijing 100080, China

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15th IFIP Conference on System Modelling and Optimisation
Zürich, Switzerland
2-6 September 1991

Contact: Dominique de Werra
DMA-EPFL (MA)Ecublens
CH-1015 Lausanne, Switzerland
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IFIP CAPE '91. Computer Application in Production and Engineering
Bordeaux, France
10-12 September 1991

Contact: CAPE '91 Conference Secretariat
Université de Bordeaux I
Laboratoire GRAI
351 Cours de la Libération
33405 Talence Cedex, France
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IFAC Workshop on Support Systems for Decision and Negotiation Processes
Warsaw, Poland
24-26 June 1992

Contact: Dr. Zbigniew Nahorski
DNS '92
Systems Research Institute
Polish Academy of Sciences
Newelska 6
01-447 Warsaw, Poland
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Situation Wanted

Ian Jallard, Manor Barn Farm, Upper Broughton, Melton Mowbray, Leics LE14 3BH, England, has written about the possibility of an OR position, particularly a research or analytical position with a corporation, in New Zealand.

He has a degree in Business Operation and Control from Salford University with a major in O.R. His experience in applied O.R. includes logistical work for the second largest distribution group in Britain and research undertaken for Professor Tony Christer of Salford University on a Ministry of Health Project. Please contact Ian directly.

