

ORSNZ
ANNUAL REPORT 2003

Membership

The current membership of the ORSNZ is as follows:

	2002	2003
Corporate Members	4	5
Corporate Sponsors	2	3
Life Members	2	2
Corporate Representatives	7	7
Standard Members	89	94
Overseas Members	14	14
Members (no branch)	13	13
Retired Members	4	4
Student Members	57	51
Total Membership	192	193

Membership stayed close to the same level as last year in all categories, and standard membership numbers rose slightly. It is hoped that enhanced publicity will increase membership even further.

Finances

The Statement of Accounts, and Honorary Auditor's Report will be tabled at the 2003 AGM.

Conferences

The 37th Annual Conference of ORSNZ was held in Auckland on 29 and 30 November 2002. The Council would like to thank the Organizing Committee, including: Matthias Ehrgott (Chair), Andrew Mason, Michael O'Sullivan, Andy Philpott, Cameron Walker, and Golbon Zakeri for their splendid work in making it such a success. The 38th will be held in Hamilton, during 20 – 22 November, 2003.

The Branches (Wellington Branch Report attached)

Branch activities are vital to the Society. Judging from the mix of meetings and visitors of the Branches this year, it is clear from the Branch Reports that OR is doing well in New Zealand. ORSNZ is pleased to continue to support Branch activities financially. The Council wishes to thank the Branch Chairs: Andy Philpott, David Boland, and Shane Dye, for their ongoing work, and also those Branch members who have supported them.

Newsletter (Editor's Report attached)

The Council is grateful for the Christchurch group, especially John Giffin as Editor and Joan Mawson as Coordinator, in producing the Newsletter. It is also gratifying that there has been a sustained level of interesting contributions.

Liaison (Officer's Report attached)

This important role, which has been formalized, has been ably carried out by Vicky Mabin.

Meetings

A Council meeting was held on 1 August, 2003 in Hamilton. At the meeting, a revision of the IFORS statutes, the ORSNZ Hans Daellenbach Prize, the ORSNZ '03 conference budget, a change of venue for the Annual Conference in 2004, the visit of Saul Gass, and the YPP were discussed. The minutes of the meeting are attached.

The AGM will be held in Hamilton, on 21 November, 2003, during the Annual Conference. All members are invited to attend.

A Council Meeting will be held immediately after the AGM.

The ORSNZ Hans Daellenbach Prize

The ORSNZ Hans Daellenbach Prize for 2003 has been awarded to Les Foulds of the University of Waikato.

Relations with the Royal Society of New Zealand

ORSNZ has been represented at certain RSNZ meetings in Wellington by John Davies and Vicky Mabin. Also, Andy Philpott in his capacity as Chair of the RSNZ Standing Committee on Mathematical and Information Sciences has represented the views of ORSNZ to the RSNZ.

Visiting Lecturers

During the financial year 2002-2003, the two visiting lecturers were Wang Hsiao-Fan and Mike Pidd. The Council would like to thank Fritz Raffensperger and Vicky Mabin, respectively, for coordinating their visits. During the financial year 2003-2004, the two visiting lecturers are Saul Gass, and Russell Cheng, whose visits are being coordinated by David Ryan and Les Foulds, respectively.

Thanks

I would like to thank all members, especially those on the Council, for their patience and support during the past 12 months.

Les Foulds
President
ORSNZ
23 October, 2003

Wellington Branch Report 2003

2003 is proving to be another interesting, useful and sometimes amusing year for the Wellington Branch. We are very pleased that John R Hayes has joined the team and is making a useful contribution to the committee. I am relieved that both Vicky Mabin and John Davies have agreed to stay on the committee for another year. As usual Vicky does the work and arranges the seminars.

We started our programme in March this year with a presentation by Mike Wright, who is a Senior Lecturer in the Management Science Department at Lancaster University, UK, and has been on sabbatical based at the University of Canterbury in New Zealand. His main research interests are the development and application of meta-heuristic techniques for large complex real-life combinatorial problems with many objectives, & the application of OR to sport, with regard to scheduling and to the analysis of tactics. These interests have been combined in Mike's work on cricket scheduling which he has been undertaking for many years, mainly for the England and Wales Cricket Board but more recently also for New Zealand Cricket, basketball and a local league in England. Mike's other work over the last few years has included school timetabling and the modelling of football (soccer) matches, as well as the development of new forms of the meta-heuristic technique. His presentation was on the 'The Professional Foul in Association Football - Tactics and Deterrents' The model he developed data from every 1999-2000 English Premiership match is calibrated to determine the circumstances under which a player "should" commit a professional foul in order to benefit his team. The results are illustrated using two hypothetical matches, one between evenly-balanced teams and one where one of the teams is much stronger than the other. These circumstances turn out to be wide-ranging and, in some cases, somewhat counterintuitive. The many drawbacks of the current system for punishing such fouls are discussed and a simple remedy is proposed which would not only be much fairer to all involved but would also at a stroke render the professional foul virtually obsolete.

We followed Mike Wright by another University of Lancaster man, Professor Mike Pidd, the ORSNZ Visiting Lecturer for 2003 who made two presentations to the Wellington Branch. Mike Pidd was based at the beginning of 2003 at the Victoria Management School. He is Professor of Management Science in the Management School at Lancaster University in the UK. He has served as Head of the Department of Management Science (formerly known as the OR Department) and is on sabbatical leave from his current role as Research Dean in the 5 star rated Management School. In 2000/2001 he was President of the Operational Research Society and was a member of the Business and Management Panel for the UK's 2001 Research Assessment Exercise. His research interests include computer simulation methods, procedural decision support and OR in public policy. He is well-known for two books: 'Computer Simulation in Management Science' (now in its 4th Ed) and 'Tools for Thinking: modelling in management science' (2nd Ed just published). He believes that the most interesting things

in OR/MS and in other management subjects take place on the boundary between theory and practice. His first seminar was on 'OR/MS in Strategy and Public Policy' He told us how Operational Research and Management Science (OR/MS) are generally accepted as valuable approaches to tackling many management and business problems. However, in many people's minds, OR/MS is suited only to tackling operational problems in logistical systems. Drawing on experience in working with public policy makers in the UK and in teaching Strategic Analysis and Modelling to MBA students, this seminar explored the possible and actual roles for OR/MS in developing successful strategy and public policy. It provoked much lively discussion, as was intended. Professor Pidd's second presentation was entitled 'A Taxing Problem: Hard and Soft OR Case Study' Soft OR is now recognised as a valid approach especially when tackling ill-structured problems. That soft OR may be combined in practice with more conventional hard approaches is not in doubt, yet there are few case studies illustrating how this may be done. Recently, the UK Inland Revenue undertook a strategic review of the UK's personal tax system. A team composed of Inland Revenue staff, Lancaster University staff and external consultants undertook this review using a combination of hard and soft approaches. The seminar described the work done and will highlight the complementarity between the hard and soft approaches.

In April the Operational Research Society linked up with the School of Mathematical and Computing Sciences for a joint seminar by Professor Hsiao-Fan Wang, also an ORSNZ Visiting Lecturer. Professor Wang's presentation was on the 'Descriptive Web Mining with Multi criteria Fuzzy Clustering' Professor Hsiao-Fan Wang has been teaching at the Department of Industrial Engineering and Engineering Management, National Tsing Hua University, Taiwan, ROC after she graduated from Cambridge University, UK in 1981. She has been the Head of the Department, the President of Chinese Fuzzy Systems Association and the Vice President of International Fuzzy Systems Association, and now on her sabbatical leave at University of Canterbury. She is the member of INFORMS, CFSA, CIIE, New York Academy of Science and Erskine Society. Her research interests are on Fuzzy Set Theories and Applications, Multi-Criteria Decision Analysis and Data Mining. These interests have been combined in her recent project of web mining for Chung-Hua Telecom Company in Taiwan. Her other work over the last few years included system development for supporting diagnosis, treatment and follow-up care decisions of a hospital and development of new techniques for by-order and by-demand production scheduling problems. In her presentation Professor Wang described the two types of consumer behaviour which can be observed: one is knowing what they want and then seeing whether it is available; and the other is to see what is available and then to decide what they want. Assumptions of either type of web-users affect the design of a query system for a website. This talk discussed why a service-oriented website based on the latter assumption is adequate and how to design it so that the users may realise quickly what they want from the 'right' information that the website provides.

Our July seminar was by Dr Jennifer George, who is Associate Dean of Students at Melbourne Business School. She joined Melbourne Business School in 1998 after completing a PhD in queuing theory at Stanford University. Her research lies at the intersection of economics and management science and her particular interests involve agency theory applied to operations models. Her presentation was on 'Incentive Compatibility in an Adjustable Service Rate Queue' She described how traditional payment methods such as piece rates or hourly wage rates often do not provide good incentives for working faster in an environment where the timing of work matters rather than the throughput volume. This research uses a queuing model with adjustable service rate, that is, a queue where the server can speed up or slow down according to the number of jobs waiting, to find optimal ways to pay the server when their effort level cannot be directly observed. She concluded that the server should be paid primarily when they are idle.

Dr Tom Halliburton made the August presentation Dr Tom Halliburton completed a PhD in hydro-thermal power system optimization at the University of Canterbury in 1982, and spent 14 years with the Ministry of Energy Electricity Division, and then ECNZ mainly in the areas of model development and investment analysis. After leaving ECNZ he worked at the US Department of Energy in Washington, Pacific Gas and Electric Company in San Francisco, and at Enron in Houston. At Enron he held the position of Director of Commodity Risk Structuring for Enron International, and then as a Manager in the Corporate Research Group, before returning to New Zealand late in 2001. He now works as an independent consultant in power system modelling and analysis. His presentation was on 'Modelling Electricity System - Investment and Security of Supply' Dr Halliburton discussed the models which he said both warned of, and contributed to, the current electricity supply situation. Security of electricity supply predictions that have been published over the last year include those by Transpower, the Centre for Advanced Engineering, and the Ministry of Economic Development. Some

key issues with these models are discussed. Earlier this year, Transpower recognized the need for better modelling of the New Zealand power system. A trial of the SDDP model was commissioned. SDDP is probably the most widely used stochastic hydro-thermal optimization model. It applies a sampling technique that allows the solution of a high dimension stochastic dynamic program. Good results have been obtained from the model, and a number of applications are being considered.

Further events are planned to round off the year including seminars by Professor Russell Cheng of the University of Southampton and Professor Saul Gass in November.

Our meetings have generally been held at the downtown campus of the Victoria School of Management which provides a convenient location for non-academic ORSNZ members and guests to attend lunchtime or evening sessions. As a result, these events have generally been well attended and provide a regular meeting and networking opportunity for both academic and non-academic members.

D Boland
Wellington Branch Chair
9.10.03

Liaison Officer's Report 2003

1. Reviewed Proposed changes to IFORS Statutes and relayed Council's vote to the IFORS Secretariat
2. Liaison with IFORS and other international OR bodies
3. Scanning items from overseas for local interest and forwarding to the newsletter editor for inclusion
4. Publicity for ORSNZ Conference 2003

Vicky Mabin
15.09.2003

Newsletter Editor's Report 2003

I took over the Newsletter Editorship from Fritz Raffensperger after the printing of the December 2002 Issue. At that time I was not (and still am not) a member of ORSNZ, but I agreed to do so (despite my lack of word-processing prowess) on a 'test' basis for a year, as a favour to Les Foulds and to ORSNZ. I can't say that my time spent thus far has been a rewarding or happy one.

Two issues have been published this year, with the third under way as this report is compiled. As far as I can ascertain, two (paper-copy) issues per year would be easily sufficient to encapsulate the annual doings of ORSNZ. Additional conference updates and urgent information (or membership canvassing) could easily be achieved by email, or sourced by readers from elsewhere. Badgering is usually required to get any Branch New contributions (except from Wellington and Waikato), and only the Guest Editorials and Puzzle Corners usually represent 'new' information. Keeping contributors to deadlines proves challenging and most often delays publication significantly. Maybe I am not being forceful enough about it?

For the size of the print run, contracting out the administrative and word-processing side would not represent efficient use of meagre resources, and yet it is a considerable burden to otherwise place upon already-stressed Departmental secretarial staff. As a result, I have ended up doing all the word-processing and everything else except the printing of address labels. The timings of the Newsletter issues also seem to invariably coincide with busy teaching or examination/marking periods. Assembling and editing material is one thing; desk-top publishing is quite another.

In summary, I suggest that an overhaul of the ORSNZ Newsletter form, frequency and production be seriously considered. Certainly a replacement Newsletter Editor will have to be found for 2004.

John Giffin
4.9.2003