



NEWSLETTER

Operational Research Society of New Zealand (Inc.)

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FROM THE EDITOR

As March draws to a close it is time, yet again to fill in your IR5. The following, easy to follow, instructions are aimed at making this task easier for you.

1. Estimate your expenses for 1979 including board, books, booze, balls, bail, breakages, breathalysers and bankruptcy and subtract from your income. This is total A herein after known as your required refund. Enter this figure somewhere in the margin.
2. Put down the name of your secretary as your house-keeper and get her to put your name down as hers. Pay each other a sum of about \$1000 and enter this figure somewhere in the margin.
3. Call your O.R. Society fees, and any other fees you like, a donation to charity. Get a receipt book from the commercial stationery counter at Whitcoulls and glue all receipts somewhere on the front — preferably where they obstruct something important.
4. Take 4 cents in the dollar on all your Accident Compensation payments and add to this the tax owing on your income from which you have already subtracted the smaller of \$175.00 and \$193.00. Add to this \$25 and if the grand total is less than \$206.00, double it and take away the number you first thought of. All these calculations should be done in full and the figure finally arrived at should be labelled total D and written on the front page under the date.
5. Pick a page from the telephone directory and write telephone numbers in all the little spaces where there are dollar signs.
6. When you stick on your name and number label make sure you let a bit fold over and stick to itself. This leads to a fold right through the middle of the code number and hence a couple of hours overtime at the local tax office while they check you out ... and the more overtime the more people have to spend ... which helps the economy ... I think.

NEW ORSNZ MEMBERS

ORSNZ extends a warm welcome to three new members—

G.R. Edwards (Auckland) Student
G. Eng (Canterbury) Student
S.J. Gale Ministry of Energy

and to a new corporate member —
Shell Oil New Zealand Ltd.

work wanted

Two young men (mid, late twenties) with post graduate qualifications and professional training in Operations Research and related disciplines, having completed over two years with one of New Zealand's leading O.R. groups are now interested in widening their experience and would like to hear from any prospective employer.

Don't miss this opportunity to hire one or two of tomorrow's leading managers.

Reply to: WORK WANTED
P.O. Box 1714
Wellington

BRANCH MEETINGS

Would anyone who is currently working on an interesting topic, or has been so recently (surely some of us must) and who considers that other members might be interested in hearing about it, please give some thought to the idea of presenting a half hour talk to a branch meeting. We are not looking for the grandiose project that is so unwieldy it never gets off the ground; many interesting problems turn out to be maddeningly simple.

Meetings may be held at midday or in the evening, and where appropriate two or three speakers may be arranged for the same meeting.

Please contact one of your local branch committee, (in Wellington, branch chairman Craig Longhurst, phone 729-729 Ext 743, or home, 648-345).

ORSNZ — 15th ANNUAL CONFERENCE AUGUST 23—24, 1979 VICTORIA UNIVERSITY, WELLINGTON CALL FOR PAPERS

Conference papers will be refereed and classified as suitable for publication in the CONFERENCE PROCEEDINGS in full length, or suitable for publication in abstract form only.

Abstracts must be submitted by MAY 15 and final typed manuscript by JUNE 15.

Enquiries to: Lindsay Packer
APPLIED MATHS DIVN
DSIR
P.O. Box 1335 WGTN
Phone 727-855 Ext 56

from the president

"The whole western world is in a headlong flight from reality but believes it has control of it."

"We have got more and more specialised. We don't relate our own findings to even our immediate adjacent disciplines."

"We are using so much time collecting useless information and ignoring the information that is important."

"American air conditioners use more energy each year than the total energy consumption of China."

Georg Bergstrom, at the ANZAAS Conference.

The Australian and New Zealand Association for the Advancement of Science (ANZAAS) conference in Auckland in January was a stimulating event, not least because it gave the opportunity to listen to brilliant scientists in other disciplines, such as Georg Bergstrom. A broad range of subjects was offered — agriculture, energy, forestry, science and social responsibility, managing our 200 mile fishing zone, planning, ecology and health care, to name a few. In retrospect, it was a pity that so few O.R. practitioners were able to attend. Our profession began as an inter-disciplinary one, and, to be effective, it must remain so. Although the prospect of spending a whole week at a conference may appear hard to justify to one's public service, or private enterprise employer, it did give a broader picture and range of contacts that no specialist conference could match. It was also blessed with a liberal sprinkling of very able speakers, and a feeling of optimism about the future that has been all too rare recently on the New Zealand scene. If future ANZAAS conferences do half as well, they would be well worth an O.R. practitioner's attendance. But the conference did raise the question of why such knowledge and talent weren't more fully used in national policy and planning.

The revolution boiling these last three months in Iran promises, over the next few weeks, to bring home to us a New Zealand interpretation of Bergstrom's first three statements quoted above. Would such a small shortfall as 10% have caused problems in the 1940's or 1950's? I don't think so. Our society was more co-operative and adaptable then. Why have we taken so little action since the warning of our vulnerability given by the OPEC price rise of 1973. Perhaps less important issues such as balance of payments or lack of economic growth claimed our attention. Given 40% of our refinery feedstocks come from Iran, why did not the government take measures to damp down demand earlier? Were our experts so compartmentalised they weren't able to put all the information together?

What can the operational research/management science practitioner learn from this case study? Firstly, a range of outcomes needs to be considered, not just the most likely one. In this case "most likely" was a decreasing real price for oil 'til the mid 1980's. Secondly, there is a need to take care with the objective function, and specifically include consideration of factors that can't be easily put in money terms. The effect of a shortfall of oil is one of these. Thirdly, there is need to be on good terms with the decision makers and other specialists, just in case your model or insight gives warning of a potential problem before their antennae have started picking up the signals.

And finally, does it matter if we have to do without 10% of our cars for a while anyhow. Probably not. This "crisis" shows how much our society has become addicted to technology and the motor car. It may encourage all of us to take a hard look at where our society is heading. Whether it is headed in the right direction is a truly inter-disciplinary problem worthy of thought by all of us.

Hugh Barr
March, 1979

PROF MIKE POWELL
N.Z. VISIT APRIL '79

He will deliver seminars as follows:

--Algorithms of Constrained Optimisation:

Th 19 Dunedin Mon 23 Wellington
Th 26 Auckland

--Quasi Newton Methods

Tu 24 Wellington

--Piecewise Quadratic Approximations

Fr 27 Auckland

--Other seminars will be held at:

Wed 25 Palmerston North
Fri 20 Christchurch

Your contacts are:

Dunedin -- Prof Davidson (Maths Dept)
Auckland - Dr D Ryan (Maths Dept)
Ch-Ch -- Mr R Broughton (Maths Dept)
Palmerston Dr D Joyce (Maths Dept)
Wellington Dr Hugh Barr (AMD DSIR)

FROM THE TREASURER

May I again ask members voting with their feet (emigrating), or changing their sex or address to inform the Society promptly by writing to me direct at —

Applied Maths Division
DSIR
P.O. Box 1335
Wellington 1.

This should prevent your journals and newsletters going astray.

Over half of the subscriptions for the ORSNZ year ending 30 September 1979 have now been received — a very pleasing result. I would like to encourage the remaining members to pay their subs promptly. I hope to mail out final reminders sometime in April. Late subscribers risk being suspended from the journal and newsletter mailing lists. However, don't make extra work for me. Pay YOUR sub TODAY. Thanks

Bruce Benseman



DEPARTMENT OF
INDUSTRIAL
MANAGEMENT AND
ENGINEERING
MASSEY UNIVERSITY

1979 JOINT CONFERENCE

23—25 MAY



INSTITUTE OF
INDUSTRIAL
ENGINEERS

AT MASSEY UNIVERSITY, PALMERSTON NORTH.

FIRST NOTICE

MAIN DAY THEME: INDUSTRIAL ENGINEERING — THE NEW PROFESSION

SEMINARS ON: — PERSPECTIVES OF SCALE
— USING MICROCOMPUTERS
— MEASURING AND IMPROVING PRODUCTIVITY

The Sixth National Conference of the Institute of Industrial Engineers and the Annual Conference of the Department of Industrial Management and Engineering, Massey University, will be held as a joint conference, at Massey, from **Wednesday 23 May to Friday 25 May, 1979.**

PUT THESE DATES ON YOUR DIARY NOW!

Enrolment brochures containing further programme and administration details will be sent to you within the next few weeks.

The theme of the first day of the conference is that Industrial Engineering, although a fairly new profession in New Zealand, now has available comprehensive training programmes at several levels including the new degree course at Massey University, and that there are many new technical advances on our doorstep which managers and technologists should be aware of and able to look forward to with excitement, not apprehension.

Keynote Address by Prof. Charles F. James, visiting professor from the University of Rhode Island, U.S.A. on the subject, "The Development of Industrial Engineering Professionalism in the U.S.A."

Turn over for programme outline and costs.

OUTLINE PROGRAMME

WEDNESDAY, 23 MAY:

- MORNING: — **Opening remarks** by the President of the N.Z. Institute of Industrial Engineers and the Head of the Department of Industrial Management and Engineering.
- **Keynote Address** — "The Development of Industrial Engineering Professionalism in the U.S.A.", Prof. James.
- AFTERNOON — **Technology and the New Profession** — the Electronic Office.
- **Education for the New Profession** — speakers from Industry, the Technical Institutes and the University.
- EVENING: — **Industrial Technology and Industrial Engineering** — A discussion on ways of improving liaison and communication between the many organisations in N.Z. whose interests are associated with the manufacturing and processing industries. Invited speakers will give background papers.

THURSDAY, 24 MAY: Two Concurrent Seminars:—

"Perspectives of Scale" — The implications of size of operation or length of production run. Small firms may tackle very large projects and large firms may find benefits (and problems) in short runs or small operating units. Should we always "THINK BIG"? Whether your firm is large or small, this seminar will show up some of the aspects of scale of operation which affect you. Speakers from Industry, the Universities and other organisations.

- OR **"Using Microcomputers"** — Small, low-cost microcomputer systems now available offer an interactive approach to problem solving and business information handling. This seminar will illustrate the microcomputer systems available, the use of packages for management information processing, user-developed programmes for particular applications and the use of a microcomputer for solving technical, production planning or statistical problems. The uses and limitations of microcomputer systems will be explained. Participants will see demonstrations of the equipment's capabilities and be able to try using it themselves.

- EVENING: — Conference Dinner.

FRIDAY, 25 MAY: Two Concurrent Seminars:—

"Measuring and Improving Productivity" including

- "A Measurement Technique for the New Profession". How industrial engineers use regression analysis to improve their own productivity in work measurement, without necessarily owning a computer.
- "Clerical Work Measurement" based on its successful use in a New Zealand enterprise.
- "Micrographics for the New Profession". A presentation of the methods of miniaturisation of documents and records available in New Zealand.

- OR — **"Using Microcomputers"**: a repeat of Thursday's seminar.

DISPLAYS of equipment of interest to industrial engineers, managers and technologists will be available during the conference.

YOU MAY ENROL for 1, 2 or 3 days of the conference. The fee will be \$20 per day. The conference dinner will be \$20 per head. Accommodation in the University hostels will be \$15 per night including meals. A good range of motel accommodation is also available in Palmerston North.