

# EURO Bulletin

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From Valerie Belton, EURO Vice-President 1

## WAYS OF MAKING FRIENDS AND INFLUENCING PEOPLE ...

Of course all EURO activities offer the opportunity of making new friends, meeting old ones, learning about new developments and talking about your own work; however, this article will focus on two particular such opportunities, the EURO-K Conferences and the EURO Summer / Winter Institutes (ESWIs). If you have never taken part in a Conference or an ESWI, then I hope it will motivate you to consider doing so next year!

### TAKING PART

#### EURO-K CONFERENCES

EURO was formally founded in 1975 at the closing session of the 1st EURO Conference held in Brussels and since then the EURO-K Conferences have continued as one of the primary opportunities for members of the ever growing family of European OR Societies to meet and exchange views. EURO-K Conferences are held in 2 out of every 3 years, the triennial Conference of IFORS being held in the 3rd year. If you have never attended a EURO-K Conference you have missed an opportunity to find out more about the wealth of OR activity across Europe, but perhaps more importantly, you have missed the opportunity to meet the wealth of individuals that are behind that activity. A quick glance at the Invitation Programme for any EURO-K Conference will give an idea of the diversity of topics covered - from the highly practical to the theoretical, even the occasional esoteric and covering an A to Z of application areas (well, I haven't actually checked this ... A is easy, Army, Ambulance Service ....

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### Ways of making friends and influencing people ...

and I'm sure there is scope for studying the optimal layout of a zoo, or the zebra's diet problem. There will be a small prize for the best complete alphabet of applications received). If you do not find anything which attracts you - then that is not an excuse to forget about the Conferences, why not volunteer to organise a session on a subject which interests you? Usually it does not take long to find and contact a few people with similar interests; both the organising and the Conference itself will provide the opportunity to make contact with others who share your interest. I'm sure the Programme Committee Chair of any Conference will be delighted to hear from you.

### EURO SUMMER / WINTER INSTITUTES

In 1984 the first EURO Summer Institute (ESI), the inspirational idea of Jean-Pierre Brans, was held on the topic of Location Theory, also in Brussels. The summer institutes bring together a group of about 20 young researchers working in the selected subject area with a number of OR analysts recognised for their expertise on that topic. Participants are selected on the basis of an unpublished paper on the subject of their research and during the ESI these papers will be presented, discussed, and prepared for submission to a special issue of EJOR. Working groups are formed to explore shared problems and new issues. But not only do they work hard - the participants also have a lot of fun as social activities, eating, drinking, playing and being tourists are an integral part of the ESI. Such has been the success of the ESI's - leading to the formation of 17 EURO working groups, the publication of special issues of EJOR and to

extensive collaborative work in addition to the many long lasting friendships - that in 1994 the Council of EURO agreed to increase its support to enable 3 ESI's every 2 years. January 1996 saw the first Winter institute and hence the need to extend the acronym to ESWI. The opportunity to participate in an ESWI is certainly not something which should be missed ... but if you are already too experienced to qualify, then you could still offer to help your national society to organise one.

### 1997 : FIFTEEN - ALL

1997 will see both the fifteenth EURO Conference, to be held in Barcelona from 14-17 July with the theme of "OR/MS for the New Millennium". The Organising Committee Chair is Jaime Barcelo of the Universitat Politecnica de Catalunya in Barcelona, which is the venue for much of the Conference. The Conference is to be jointly organised by EURO together with the newly created INFORMS, hence the Programme Committee is chaired jointly by Luis Valadares Tavares of the Instituto Superior Tecnico, Lisbon, and Burton V Dean of San Jose University, California. Further information on the Conference can be found in the Call for Papers included in this bulletin, or on the EURO World Wide Web page : [http://www.ulb.ac.be/euro/euro\\_welcome.html](http://www.ulb.ac.be/euro/euro_welcome.html)

1997 will also bring the fifteenth EURO Summer / Winter Institute to be held in St Vincent in the beautiful Aosta Valley, Italy, in September. The topic is "Production Scheduling - Discrete, Stochastic and Fuzzy approaches" and the organiser is Roberto Tadei of the Politecnico di Torino. If this is your research area and you are under 35 (or

by Valerie Belton

relatively new to a career in OR) then you should start preparing your paper now! The deadline for submission of papers (to your national OR Society) is 1st March 1997. Further information can be found on page 13 of this bulletin and on the EURO WWW page.

## LOOKING FURTHER INTO THE FUTURE

EURO relies on its member societies to organise and to host EURO-K Conferences and ESWI's. Of course, hosting an event brings many benefits to the national society as well as to EURO and to the participants. It is an opportunity to promote the work of the national OR Society both within the international OR community and within the local business community. A successful Conference can provide financial benefit to assist in the running of the national society. However, the task of hosting a Conference should not be taken lightly as any past chair of the Organising Committee will tell you! The venue for a EURO-K Conference is usually decided 3 to 4 years before the event. This long lead time is generally necessary to allow us to take advantage of University accommodation, enabling us to keep the registration fee as low as possible. As ESWIs are on a much smaller scale they do not necessarily require such extensive forward planning; however, the institute should be announced about 18 months in advance to allow aspiring participants to prepare their papers. National societies will be invited, from time to time, to submit bids to host a EURO-K Conference or an ESWI - but if you are keen to organise an event do not wait to

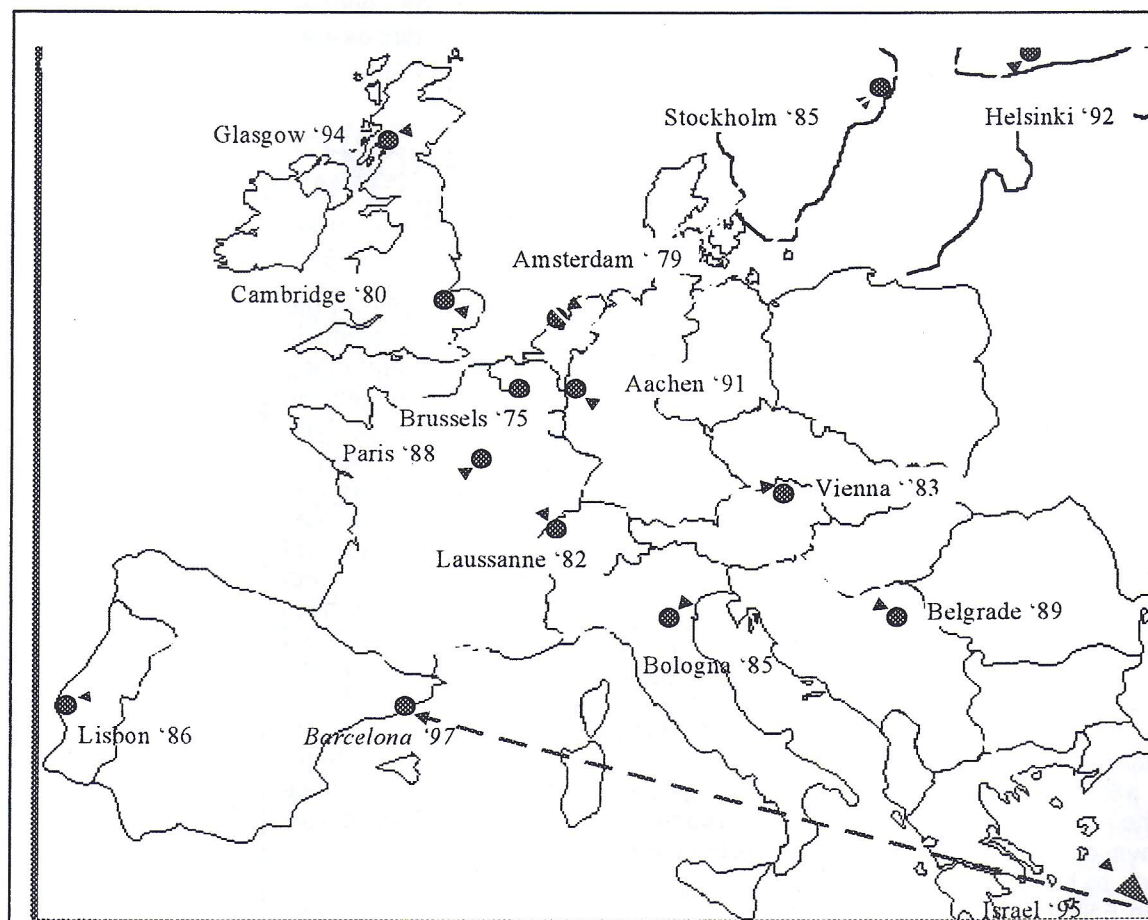
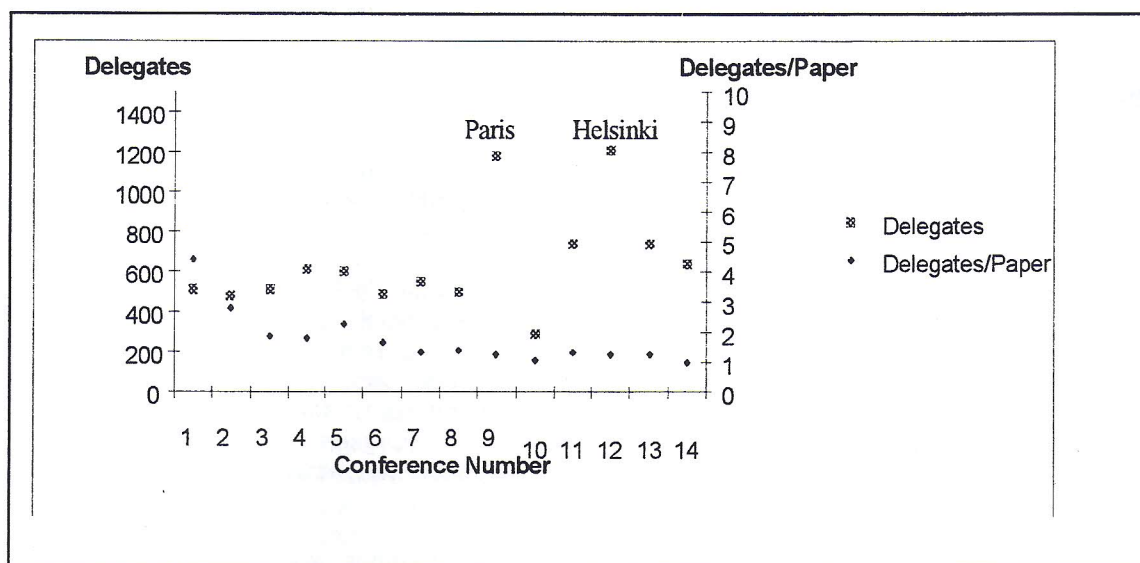
receive an invitation, contact the EURO Office or the Vice-President in charge immediately.

EURO XVI, to be held in July 1998, will return to Brussels, the official birth-place of EURO. The Conference Chairs have already been appointed and have begun to make plans; they are Jacques Teghem (Organising Committee) and Professor Matarazzo (Programme Committee).

Two countries, the Netherlands and Hungary, have submitted bids for EURO 2000 - it is now in the hands of the national societies to decide between the two.

## LEARNING FROM THE PAST

It is interesting to reflect briefly on the history of the EURO - K conferences. The map and table below illustrate their travels over the past 21 years and the graph shows the total number of delegates attending as well as the ratio of delegates to papers. I'll leave you to draw your own conclusions from these, but it would appear that the number of delegates is generally increasing, with the joint EURO / TIMS Conferences held in Paris and Helsinki attracting about 50% more delegates. However, the number of delegates per paper has been decreasing over the years - initially very quickly, more slowly in recent years. Furthermore, the distance between consecutive Conferences seems to be increasing!



From Valerie Belton

### **EURO -K Conferences**

1995	Jerusalem, Israel (XIV)	- 642
1994	Glasgow, Scotland (XIII)	- 745
1992	Helsinki, Finland (XII)	- 1206 (with TIMS)
1991	Aachen, Germany (XI)	- 743
1989	Belgrade, Yugoslavia (X)	- 295
1988	Paris, France (IX)	- 1176 (with TIMS)
1986	Lisbon (VIII)	- 496
1985	Bologna, Italy (VII)	- 550
1983	Vienna, Austria (VI)	- 488
1982	Lausanne, Switzerland (V)	- 598 (with TIMS)
1980	Cambridge, England (IV)	- 610
1979	Netherlands (III)	- 508
1976	Stockholm, Sweden (II)	- 481
1975	Brussels (I)	- 506

The topics and locations of the ESWI's held to date are given in the table below. As you can see the ESWI's have covered a wide range of subject areas - some focusing on a particular application area, such as Environmental Planning or Maintenance, others on specific a specific technique or methodology, for example, multicriteria analysis or stochastic optimisation. Not only do the ESWI's provide excellent opportunities for young researchers to meet and initiate collaborative work, they have also been the seed for a number of EURO Working Groups.

1996	Piraeus, Greece	Environmental Planning
	Semmering, Austria	Stochastic Optimisation
1995	Salford, England	OR Models in Maintenance
	Teneriffe, Spain	Locational Analysis
1994	Versailles, France	Combinatorial Optimisation
1993	Mannheim, Germany	Hierarchical Planning
1992	Rosersberg, Sweden	Risk Management in Complex Production and Transportation Systems
1991	Cozenza, Italy	Urban Traffic Management
1989	Madeira, Portugal	Decision Support Systems
1988	Eindhoven, Netherlands	Production Planning and Control
1987	Turku, Finland	Systems Science
1986	Canterbury, England	Decision Making in an Uncertain World
1985	Brussels, Belgium	Multicriteria Analysis
1984	Brussels, Belgium	Location Theory

From Valerie Belton, EURO Vice-President 1

## ORGANISING A EURO-K CONFERENCE

A detailed set of guidelines which explains what is involved in organising a EURO-K Conference is available either from the EURO Office or from Vice-President 1, who would be happy to chat to you in more detail about the task. In brief, the preparation of a conference is undertaken by two committees. The organising committee, chaired by someone appointed by the National Society in agreement with EURO, is responsible mainly for the local organisation. The chair of the Programme Committee is appointed by EURO and this committee's job is mainly to find session organisers, encourage submissions and prepare the conference schedule. Clearly there needs to be excellent communication between the committees, in particular between the two chairpersons. I think most committee chairs would agree that it is a demanding but rewarding job.

EURO-K Conferences are expected to generate a small profit to be shared between EURO and the national society in agreed manner (a number of alternative arrangements are possible). EURO offers a loan of 10,000 Swiss Francs to enable the organisers to meet costs incurred early on and a grant of 10,000 Swiss Francs to facilitate participation by delegates from Eastern and Central Europe.

## ORGANISING AN ESWI

Once again, a detailed set of guidelines is available as above. In the case of ESWIs all of the work in preparing and running the institute is carried out by the same committee - which must therefore incorporate subject expertise and local knowledge. EURO provides a grant of 20,000 Swiss Francs to assist in the organisation of an ESWI; one of the tasks of the organising committee, assisted by the national society, is to find sponsorship to cover the remainder of costs incurred. It is one of the conditions of an ESWI that all the costs of taking part (except for travel costs) are covered for all participants. Organising an ESWI calls for a substantial commitment of time as an institute lasts for two weeks and the organisers must be fully involved throughout that time. However, the satisfaction to be derived from successfully initiating the development of a network of OR workers which will be productive many years into the future, together with the stimulating academic activity and enjoyable social activity makes it more than worthwhile.



## Call for Papers

# 9TH MINI EURO CONFERENCE FUZZY SETS IN TRAFFIC & TRANSPORT SYSTEMS BUDVA - YUGOSLAVIA SEPTEMBER 17-19, 1997

## CALL FOR PAPERS

The Yugoslav Operations Research Society will organise the 9th Mini EURO Conference on Fuzzy Sets in Traffic & Transport Systems, in Budva, Yugoslavia. The meeting is sponsored by the EURO - the Association of European Operational Research Societies and the Faculty of Transport and Traffic Engineering, University of Belgrade. The 9th Mini EURO Conference is devoted to Fuzzy Sets in Traffic and Transport Systems. It will bring together researchers and practitioners dealing with the theory of fuzzy sets, uncertainty modelling and analysis in traffic and transport engineering.

## SITE

The conference will be held in Budva, a medieval small town, the pearl of Adriatic coast, renowned for its renaissance buildings, scenic promenades, unique sand beaches and quaint art shops and cafes. Budva is within thirty minutes from two airports Podgorica and Tivat, with direct service to international airport Belgrade.

## CONFERENCE STRUCTURE

The conference program consists of :

- EURO Working Group Transportation meetings, Monday and Tuesday, September 15-16, 1997.
- Mini Conference paper presentations and software demonstration sessions from Wednesday, September 17, through Friday, September 19, 1997.

The conference language is English.

## TOPICS

Sessions will be organised around the following topics :

- Fuzzy Sets and Transport Economy & Policy
- Fuzzy Sets in Transportation Demand Analysis
- Applications of the Fuzzy Sets in Traffic Analysis, Managing & Control

## 9th Mini EURO Conference

- Fuzzy Sets and IVHS Problems
- Fuzzy Approach to the Vehicle Routing and Scheduling Problems
- Fuzzy Location Models
- Fuzzy Models in Air Transportation
- Fuzzy Models in Railway Operations
- Modelling Waterways, Ports and Marine Transportation Using Fuzzy Sets
- Fuzzy Models in Mass Transit
- Logistics and Fuzzy Sets
- Modelling Freight Transportation Problems by Fuzzy Sets
- Fuzzy Sets in Communication Networks

Submission of papers reporting on actual case studies is strongly encouraged.

## CALL FOR PAPERS AND DEADLINES

Papers on all theoretical, computational and practical aspects of fuzzy sets in traffic and transport systems are welcome.

## DEADLINE FOR ABSTRACTS

FEBRUARY 28, 1997.

## CALL FOR SOFTWARE DEMONSTRATIONS

Interested individuals, research laboratories, universities and government agencies are invited to submit proposals for the Fuzzy Sets in Traffic and Transportation Systems software demonstrations. Each software demonstrator is expected to register for the Conference. A description of the software demonstration (max. 200 words), including name, mailing address, keywords and abstract is required (all on one page). PC's will be available at the conference site. Other specific hardware should be provided by the demonstrators.

## PUBLICATIONS OF SELECTED PAPERS

A selected set of papers will be published in special issues (or special sections) of prominent academic journals. Only full papers submitted by the authors by the conference date will be considered for journal publication.

## EWG

EURO Working Group Transportation meetings will be organised on Monday and Tuesday, September 15-16, 1997, Coordinator Professor Maurizio Bielli.

## II ALIO/EURO Workshop

## 2nd. Announcement

# II ALIO/EURO WORKSHOP ON PRACTICAL COMBINATORIAL OPTIMIZATION

*November 11-15, 1996,  
Valparaíso, CHILE*

## SPONSORED BY

ALIO, Latin-Iberian-American Association of Operations Research  
EURO, Association of European Operational Research Societies

## PROGRAM COMMITTEE

E. Santibañez-Gonzalez  
(General Chair, Chile),  
C. Roucairol (EURO Chair, France),  
F. Maffioli (Italy),  
N. Maculan (Brazil)

## INTERNATIONAL ADVISORY COMMITTEE

J. Beasley (England),  
C. J. Colbourn (Canada),  
R. Galvao (Brazil),  
B. Gavish (USA),  
J. Lesser (France),  
J. MacGregor-Smith (USA),  
P. Toth (Italy),  
A. Weintraub (Chile).

## PARTIAL LIST OF CONFERENCES AND TUTORIAL LECTURES:

Find below a partial list of conference/tutorial lectures already confirmed:

- **F. Maffioli**, "Approximability of Non-deterministic Polynomial Optimization Problems: An introduction", Politecnico de Milano, Italy
- **Charles Colbourn**, "Network Diagnosis", University of Waterloo, Dept. of Combinatorics, Canada,
- **Gerd Finke**, "Combinatorial Optimization Models in FMS", Computer Science and Applied Mathematics, University Joseph Fourier, France
- **J. MacGregor-Smith**, "Steiner Star Polygons and Cellular Arrangements", Dept. of Industrial Engineering and Operations Research, Uni. Mass-Amherst, USA
- **Horst Hamacher**, "Combinatorial Approaches to Real-World Location Problems", Universität Kaiserslautern, Germany.

## II ALIO/EURO Workshop

- **P. Toth**, "Crew Scheduling and Rostering Problems in Railway and Airline Applications", Dipartimento di Elettronica, Informatica e Sistemistica, Università degli studi di Bologna, Italy;
- **A. Weintraub**, "Forest Management: Models and Combinatorial Algorithms", Industrial Eng. Dept. University of Chile, Chile.
- **N. Maculan**, "The Euclidean Steiner Tree Problem in  $R(n)$ : Mathematical Programming Formulations", Federal University of Rio de Janeiro, Brazil
- **B. Gavish**, Title to be defined, Owen Graduate School of Management, Vanderbilt University, USA
- **C. Roucairol**, Title to be defined, INRIA, France

All the topics will be presented in a series of non-parallel sessions.

## FINANCIAL AID FOR THE PARTICIPANTS

It is intended to provide financial aid for some of the principal speakers of each selected paper to be presented at the workshop. Resources will cover totally or partially the accommodations and travel expenses.

## ANNALS OF OPERATIONS RESEARCH

We are pleasure to inform that a special issue of Annals of Operations Research will be dedicated to very high quality papers presented at the Workshop. Each of the manuscripts submitted will be subjected to a rigorous refereeing system.

## FURTHER INFORMATION ON INTERNET

You can get information from EURO Home Page, Michel Trick's Home Page, and <http://math.uwaterloo.ca:80/~cjcoulbou/flgeralio.html>

or write to:

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Tel: 56-32-257331,  
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e-mail : [pracomo@aix1.ucv.cl](mailto:pracomo@aix1.ucv.cl)  
Valparaíso, Chile

## Call for Papers

## Call for Papers Special Issue of Omega Performance Measurement in the Asia-Pacific countries

The success of the Asia-Pacific economies is widely remarked. The contribution of management science to this success is of wide interest. A special issue of Omega is planned which will be devoted to the role and effectiveness of aspects of management science in the Asian-Pacific countries. In order to give a focus, the special issue will concentrate on methods of performance evaluation, including in particular, but not exclusively so, data envelopment analysis (DEA) and its variants. It is hoped to elicit papers from as wide a range of evaluated activity as possible, thereby providing a perspective on the many kinds of developments occurring in the Asia-Pacific region. Papers which combine methods of evaluation employed in an intrinsically interesting field would be particularly welcomed. Examples of such papers might be (i) a combined use of the analytic hierarchy process and DEA to evaluate textile manufacturing performances in China, or (ii) a combined use of DEA and stochastic frontier regressions to evaluate the performances of water districts in Japan.

The guest editors for this special edition are Professor W. W. Cooper (The University of Texas at Austin); Professor K. Tone (Saitama University, Japan); and Professor T. Sueyoshi

(Science University of Tokyo). Papers should be submitted in quadruplicate to one of the above by 31 December 1996. Their full addresses are given below. The papers should be prepared according to the normal Omega guidelines set out in 'Instructions to Authors' in each issue of the journal. They will be reviewed to the normal Omega criteria.

It is planned to publish the special issue in the later part of 1997.

**Professor WW Cooper**  
Dept of Management Science & Information Systems  
College and Graduate School of Business  
The University of Texas at Austin  
CBA 5.202  
Austin, TX 78712-1175  
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**Dr. Kaoru Tone**  
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**Professor Toshiyuki Sueyoshi**  
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Science University of Tokyo  
2641 Yamazaki, Noda-shi  
Chiba-ken 278, JAPAN

EURO Summer Institute

## 15th EURO Summer Institute ESI XV

**St Vincent, Aosta Valley, Italy**  
**September 12-26, 1997**

**THEME : PRODUCTION SCHEDULING**

*DETERMINISTIC, STOCHASTIC AND FUZZY APPROACHES*  
**FIRST ANNOUNCEMENT**

### ADMITTANCE

Limited to 30 young scientists (age <35) from different European countries.

### ACTIVITIES

Each participant will present a research paper on a topic within the theme. In addition to these activities, the Scientific Committee will also organise lectures by invited experts; A special issue of EJOR (European Journal of Operational research) will be prepared based on papers presented at the Institute? To facilitate network building among the participants, the Organising Committee will prepare a rich and varied social programme.

### LOCATION AND

### ACCOMMODATION

Scientific activities and accommodation will be sited in the beautiful Aosta Valley, the region of Mont Blanc. Free accommodation and registration will be provided for the selected participants.

### APPLICATION

Applicants should submit their CV together with an unpublished paper within the theme of the Institute to their national OR society. The societies will select their candidates and submit their application to the organiser of the ESI XV before March 1st, 1997. The final choice will be made by the Scientific Committee and the selected candidates will be notified by April 1st, 1997.

### INFORMATION

Available from the Organising Committee at the following address :

**Professor Roberto Tadei**

**Dipartimento di Automatica e Informatica**

**Politecnico di Torino**

**Corso Duca degli Abruzzi, 24**

**10129 TORINO (Italy)**

**Phone : +39 11 5647032**

**Fax : +39 11 5647099**

**E-mail : tadei@polito.it**

**WWW:**

**<http://www.polito.it/associazioni/AIROTO/>**

By E. A. Field, EURO Treasurer 1985-1990

## Sustainable Operational Research

### *Become an Operational Research Project Donor ...*

Despite the glimmer of hope provided by the UK delegates, the account of the panel that discussed practical OR at EURO XIV\* left me with a feeling of gloom. It is certain that the details of most practical studies will remain unpublished. However, OR people should consider becoming project donors if they possibly can.

To make it easy for you to donate a project, refer to Jaap Spronk's article (EURO Bulletin, Winter '93) and my check-list (EURO Bulletin, Spring '94). Head your contribution "Aspects of Operational Research Applications" and send it to Philippe Van Asbroeck for publication. You may also want to send a copy of your letter to the Operational Research Society Newsletter. Better it should be published twice than not at all. OR project donors are desperately needed by the academics of EURO.

### *Some answers may lie in the past ...*

I read the accounts of wartime OR

work which are published regularly in the ORS Newsletter. The projects were dealing with real problems which needed to be solved urgently. The projects teams were composed of scientists with different disciplines and military people. Under these conditions the transfer of scientific analysis from laboratory to battlefield worked well. These characteristics for successful projects may transfer to commercial situations.

Now let us consider a situation that revolutionised the planning and control of the oil industry.

### *Putting Linear Programming to work ...*

Following publication of the Simplex Method, one major oil company produced a book entitled "Linear Programming - the Solution of Refinery Problems". The book contained toy LP models of eight refinery operations. It proved to be a watershed for the oil industry whose traditional planning methods were put under threat and changed irreversibly.

### **Sustainable Operational Research**

The oil companies had to find ways of introducing new planning methods into hundreds of oil refineries and oil production units scattered throughout the world. It was a mammoth task, made difficult by the dearth of analysts who were familiar with the new methods.

To get started my company formed a new organisation called the Applied Mathematics Division. Its mission was to initiate modelling studies and train local staff to complete the implementations. The management decided to use its experienced refinery engineers to handle the on-site work and they were given training in the use of the simple LP codes available at that time.

The on-site analyses were supported by a central Mathematical Research Unit staffed by operational researchers, engineers and mathematicians. Its mission was to take all the modelling and optimisation problems that were encountered by the on-site engineers and provide solutions. It had regular access to the top LP consultants of the day. During my two year attachment to the Applied Mathematics Division in the early 1960's I managed this unit.

### ***Content versus context ...***

This successful approach to practical LP shows the importance of distinguishing between the content of a problem and its context. Much of what you read in the learned OR journals is pure content. This is the substance of models and algorithms. A fraction of this theoretical work finds its way into the practical arena, where it is used for building OR models.

The main aspects of context are organisation and environment. Nothing can be achieved in industry without organisation. Your reporting and control links can have a profound effect upon your project success. Likewise the way data is processed and stored in the organisation can be a determining factor in the cost of your work, the completion time and its ultimate value.

LP based planning was successful in the oil companies because the implementation system they developed handled the content and the context of the problem. Both are necessary if the results are to be sustainable.

### ***Clients change their attitudes ...***

Another character of sustainable OR is the way in which it changes the client's attitude to planning and control. This was very noticeable in the case of using LP to plan refineries. Although the traditional methods were very detailed (and non-linear!) the LP models opened up a new way of viewing certain complex situations and costing them. The consideration of multiple refinery planning was one such case.

### ***Mathematics and mathematics ...***

During our early school days we were taught how to use mathematics to analyse physical phenomenon. Often the agreement between the model and the real world was very good. It was almost as though nature were behaving

### Sustainable Operational Research

according to a set of rules derived from the mathematics. Contrast this situation with an OR model.

The process of using mathematics to solve business problems requires an abstract model to be developed that approximates to the business problem being addressed. Such abstractions will capture a limited number of features of the real problem and enable the researcher to explore them over their phase space within the model.

For my M.Sc. project I studied the Dingle marine terminal situated on the estuary of the river Mersey. In my thesis I argued the case for treating all ship arrivals at the jetty as being random and proceeded to develop an analysis based on Markov chains. However, I knew perfectly well that the people who planned the voyages of ships did not use random numbers in their decision making and each trip was carefully arranged. At the time it seemed a reasonable assumption to ignore the feature to ship scheduling in order to cast light on the management problem.

Our clients are practical people. They may feel uneasy with some of the cavalier assumptions that are made in order to make the mathematics look good. This is a case for applying Occam's Razor - don't make unnecessary assumptions! It is better to bend the mathematics than to bend the problem.

The solutions proposed to our client are at best partial. We hope to improve the way in which our clients deal with their problem and help them to work more confidently in its area of influence. We need to monitor any proposals to ensure that they are working well in their practical environment.

### *The keys to sustainability ...*

In conclusion here is a list of the points I have raised which can affect the sustainability of OR projects :

1. Problem important to the organisation
2. Urgent solution is required
3. Form mixed discipline team
4. Deal with context of problem as well as its content
5. Spell out lessons learnt from project
6. OR results should be viewed as partial solutions
7. All implemented OR results need monitoring

The list is certainly not complete, but it is a start. These and similar items should be considered at the next EURO conference discussion of practical OR

\* Intractable problems in the discussion of OR practice at an academic conference :

The Management Report Series : number 255, (Erasmus).

