



BERBA, Guest speaker at ORSP annual meeting

Mr. Felimon T. Berba, Jr. will be our principal guest during the Annual Meeting on Wednesday, 23 March 1988 at the DAP Building in Pasig. He will speak on "Operation Research Practice in the Philippines in the Year 2000."

Operations Manager, Meralco Securities Industrial Corporation (1967-1969).

He has always been very active in the Management Association of the Philippines and other civic and professional organizations and is a recognized leader in pushing productivity consciousness into the forefront of national business.

Among the achievements of Mr. Berba are: First place in the Board Examinations for Electrical Engineers, 1959; "Outstanding Electrical Engineer in Corporate Management," given by the Institute of Integrated Electrical Engineers of the Philippines in 1984; "Most Distinguished Alumnus of the U.P. College of Engineering for 1987," given in 1987.

MEMBERSHIP ELECTS NEW BOARD FOR TWO-YEAR TERM AT ANNUAL MEETING ON 23 MARCH 1988

In accordance with the ORSP's Constitution and By-Laws, the present Board ends its transitory one-year term of office this month. The members shall elect the new Board of Directors for a regular two-year term during the Annual Meeting on Wednesday, 23 March 1988 to be held at the Development Academy of the Philippines Building in Pasig, Metro Manila. The Elections Committee is headed by Board Secretary Nida Africa.

Mr. Berba is now the President of the Philippine Electric Corporation. Before this, he has held key positions, including the following: President, Westinghouse Asia Controls Corporation and concurrently Senior Westinghouse Executive for the Philippines (1979-1987); President and/or Board Member in a dozen or so companies of the Herdis Group, Inc. (1975-1979); Vice-President for Manufacturing and Logistics Services Division of United Laboratories, Inc. (1973-1975) and

Suggested readings on the future of OR

1. Gass, S. I. "The Perspective on the Future of Operations Research" Operations Research, Vol. 35, No. 2, March - April, 1987.
2. Pierskalla, W. P. "Creating Growth in OR/MS" Operations Research, Vol. 35, No. 1, Jan-Feb., 1987.
3. Muller-Merbach, Heiner, "Interdisciplinarity in Operational Research - in Past and in the Future," J. Operat. Res. Soc., 35(2), 83-89 (1984).
4. Render, B., "Operations Management in the Underdeveloped World", Operations Management Review, 1 (4), 37-41 (1983).

BOARD OF DIRECTORS AND OFFICERS

1987



MS. ELISE A. DEL ROSARIO
SAN MIGUEL CORPORATION
Vice-President



DR. WILLIAM T. TORRES
NATIONAL COMPUTER CENTER
President

1988



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DE LA SALLE UNIVERSITY
Secretary



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Treasurer



MR. DIOSDADO C. ENGBINO
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RENGO CONSULTANTS PHILS., INC.
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DR. ROLANDO A. DANA
UNIVERSITY OF THE PHILIPPINES
DILIMAN
Board Member

DR. NORBERTO R. NAVARRETE, JR.
UNIVERSITY OF THE PHILIPPINES
at LOS BANOS
Board Member

President's Report

This is a brief account of the ORSP's Board of Directors activities during its first term of office.

From April 1987 to March 1988, the Board focused its efforts on organization, membership drive, and planning and initiating the various programs for the year under the five committees-the "action units" of our organization.

The Membership Committee, headed by Board Secretary Nida Africa, has achieved the goal set by the Board to attract at least 100 members.

The ORSP was represented in the MS/OR Regional Symposium in Kuala Lumpur, Malaysia in October, 1987 during which three of our members (Dr. Rao, Mr. Uy and Mr. Engbino) presented technical papers. This major event, together with the initial contacts made with

various international OR organizations, was mainly due to the efforts of the External Affairs Committee, headed by Vice-President Elise del Rosario. By the way, Elise also read a paper at the International Conference on Optimization: Techniques and Applications, held in Singapore last April.

The Programs Committee is headed by Board Member Lem Miravalles. Following our Inauguration where we had our first Symposium on OR/MS Applications in the Philippines and induction of officers last June, the Board concentrated on the drive to attract more members and prepare for our participation in the KL Symposium in October. Thus, there were no technical activities organized towards the end of the year. On December 9, about two dozens of us celebrated the first ORSP Christmas Party.

This year Elise and Nida participated in a Trainers Training Program on OR held

on February 16 at the De La Salle University and on February 18, Lem, Nida, Elise, Dado and I participated in a symposium on OR Career Opportunities at the UP National Engineering Center.

Board Members, Bert Navarrete and Rolly Danao jointly coordinated our Research and Publications Committee. Despite funding difficulties we came out with three issues of the ORSP Newsletter including this special issue.

The Finance Committee, headed by Board Member Art de Guia, tried very hard to generate revenues mainly from membership fees to fund our activities. It should also be indicated that the Board succeeded in conserving our small (but growing) bank account for the future.

Perhaps the past year's activities may have not met each member's expectations, but considering that this is only our first year of existence, we in the Board hope that our organization has made a good start towards having OR/MS make an impact in our society.

The marriage problem: An application of the optimal assignment model

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OR started as a scientific method for developing strategies in battle during the Second World War. Since then it has proved its versatility in other less terrifying but equally challenging problems of man (and woman). Close on the heels of Valentine's Day on a leap year, we thought it might be appropriate for OR analysts to review the marriage problem which has applications to job assignments.

"A pioneering colony of 10 bachelors is joined by 10 prospective brides. After a short period of courting, it is decided to have an immediate ceremony. Each bride is given a list of ten names on which she is to list her preferences

in a scale of 10, e.g., she may assign her first choice the number 10, her second choice the number 9, etc. She may also cross out names unacceptable to her. We assume that the sum of the assigned numbers constitutes a valid measure

of the anticipated "happiness" of the colony in marital bliss."

Find an assignment which gives the greatest total "happiness", where the rating of the j th bachelor by the i th bride is given below:

	Joseph	Alex	Butch	Dante	Art	Bill	Vic	Ben	Noel	Ernie
Villa	9	6	3	x	2	8	7	4	1	5
Linda	3	7	8	2	1	x	5	4	x	6
Gwen	4	2	1	6	x	8	3	9	7	5
Nory	6	3	5	7	9	x	1	4	2	8
Susan	7	5	6	9	1	8	3	x	2	4
Dory	1	10	8	4	5	3	6	9	2	7
Baby	6	8	10	9	4	3	5	1	7	2
Fely	7	8	4	3	2	6	1	9	5	x
Ruth	3	9	4	2	5	6	7	x	8	1
Medy	9	3	1	8	x	4	2	7	6	5

Book Review

by: Elise A. del Rosario

OR FOR DEVELOPING COUNTRIES

A Monograph edited by N.K. Jaiswal published by the Operational Research Society of India

OR For Developing Countries, a monograph edited by N.K. Jaiswal contains five articles on OR for developing countries in general, three articles on the experiences of India, Brazil and Nepal with regard to OR applications, and three OR projects undertaken in the Indian and Bangladesh settings.

All of the articles stress the importance of OR in developing countries. Problems involving voluminous investments in money and human resources such as those concerning building internationally competitive industries with high productivity, or improving infrastructure, education, and health care systems, have been pinpointed as ever present in developing countries and with huge latent demand for good OR.

However, authors are one in pinpointing several factors which deter acceptance of OR in less developed countries. These are:

- (i) Nature of problems in less developed countries:

Problems are generally ill-defined, ill-structured, fraught with uncertainties, concerns and ethical questions such as on the livelihood of people.

- (ii) Conditions prevailing in less developed countries:

Nepotism at all levels of corruption, value judgment, lack of trust of specialists, limitations in technical sup-

port and back up services, bureaucracies deeply caught in web of procedures and rules to move fast enough, cost control constrained by poor accounting systems, unavailable or unreliable data.

- (iii) Lack of know-how and expertise:

Modeler's failure to understand manager's working environment, gap in communication between manager and analyst, assumptions rarely found in real world, analyst's inability to adapt techniques to particular situations being analyzed.

All authors nevertheless have suggestions towards a successful implementation of OR:

- (1) Reiner Muller-Merbach in his article "Education in Operational Research for Developing Countries" makes a pitch for SOR (Social OR) which deals with the messes of realities as against TOR (Technical OR) which treats OR as a subset of mathematics. This suggestion though is valid for both developing and developed country settings.

- (2) B.P. Banerjee in his article "OR in Less-Than Developed Countries" suggests that OR training should be suitably reoriented and redesigned for developing countries. He further suggests that problem-solving must start with smaller non-industrial problems which are critical, significant and yet in need of systematic analysis and urgent solution.

- (3) Michael Luck and Monir Tayeb in "OR as Organizational Intervention" first stated that OR works for

and through people. They then showed through experiments that organizational behavior is influenced by cultures and attitudes. With these as given, they concluded that in developing countries, as much effort should be put into understanding the concrete processes by which OR intervenes in an organization as that being put into refining the abstractions of OR models.

The article, however does not go into detail as to how this effort should be carried out.

- (4) G. Walsham in "Information Technology and the Third World - A Role for OR?" agrees with Banerjee when he suggests starting implementation of small models which address the basic needs of poor people. He suggests that since no information revolution could happen in the third world, advancement of OR can best be carried out through the micro-computer. He asserts that this is a highly relevant tool because of its low cost, ease of use, attractiveness of presentation and reliability.

- (5) N.K. Jaiswal, R. Gupta and R. K. Jain in their article "OR in Defense for Developing Countries" suggest starting with small models - those which are simple and do not require an actual war to test model validity. These small models may be studies on equipment, procurement, reliability. They also suggest reduced duration of studies through closer interaction between user and analyst, or if this is not possible, setting up an institution for military OR.

They also cite support of the top most echelon of defense decision makers as vital.

(6) Y. Kathawala in "The State of the Art of Operations Research with Special Reference to India" focuses on how the OR analyst can successfully carry out an OR project, that is, have his work implemented. The author suggests that the OR analyst must gain the manager's trust through involvement in the implementation phase, must present not one optimal solution but several alternative courses of action from which the manager can choose, must consider resources and environment in which the particular problem will be solved during problem formulation.

(7) L.F.A. Rocha and C. Bornstein in "Operations Research in Brazil" agree in the 'small is beautiful' approach of Banerjee, Walsham and Jaiswal when they recommend that the analyst could formulate a small problem and using established techniques, generate quick results. The problem could then grow in size and complexity as people get used to it and become amenable to change.

(8) B. Render, S.H. Robbins & C.H. Paksoy in "The Issue of Implementing Management Science in Nepal" incorporate a lot of the above suggestions when they issued the following guidelines:

- a. Models should be simple and practical at least at first.
- b. Project team should in-

clude an influential local member.

- c. Users must be actively involved.
- d. Once in place, the system needs to be constantly monitored, adjusted and utilized.

In the application portion, S. Roy, G. Roy, K. Sen Gupta and B.P. Banerjee in the article "Choice of Locations and Selections of Capacities for the LPG Bottling" showed how a model could be simplified to adapt to the computing facilities available. The simplification can, however, be applied only to the specific situation without affecting optimality.

M.A. Quaddus and A.G. Holzman showed in "Interactive Approach to Macroeconomic Planning with Multiple Objectives: Results of an Experiment", the potential of an interactive multiobjective method in analyzing macroeconomic planning problems.

S.C. Bhatnaga, T. Madhavan and N.R. Patel deal with "Measuring the Socio-Economic Impact of Rural Roads" as a post investment study attempting to assess the impact of rural roads through quantitative analysis. It presents a methodology to draw statistically sound inferences from data.

From the point of view of an OR practitioner from the private sector, this monograph is enlightening and depressing at the same time. One is made to realize that the greatest contribution can be made by tackling national problems. However, one is also made equally aware that gigantic efforts towards change are needed in the system for OR to be able to make a significant national impact.

Issues dealt with are on the public sector although through the LPG article, an industrial application in a third world setting is tackled.

On the overall, the monograph achieves the objective it set out to do in the first place: help in creating an awareness of the usefulness and limitations of OR for providing impetus to the social and economic growth of the developing countries.

The ORSP should soon publish a similar monograph with emphasis on OR applications in the Philippines.

ANNOUNCEMENTS

ANNUAL MEMBERSHIP FEE

The annual membership fee, which is for the fiscal year from April to March, is P200.00. However, a new member who joins ORSP during the second half (October to March) of the fiscal year may pay only P100.00 for his/her initial membership fee for that year. Kindly update your account(s) promptly.

ATTENDANCE AT THE ANNUAL MEETING

To cover the costs of food and venue during the annual meeting on 23 March 1988 the ORSP shall collect P50.00 per attendee.



Constitution and BY-LAWS of the Operations Research Society of the Philippines

PREAMBLE

The Operations Research practitioners, specialists and enthusiasts in the Philippines, bound together by the common goal of contributing to the betterment of society through scientific means of handling complex problems and a deep sense of commitment to the advancement of Operations Research/Management Science as a vital discipline in the Philippines, do hereby adopt this Constitution and By-Laws.

Article I.

NAME AND DOMICILE

Section 1. The organization shall be known as the Operations Research Society of the Philippines, hereinafter referred to as ORSP. This society is a non-stock, non-profit, non-sectarian and non-partisan organization.

Section 2. The domicile of the ORSP shall be in Metro Manila, Philippines.

Article II.

OBJECTIVES

Section 1. The general objective of the ORSP is to advance the development and practice of OR/MS in the Philippines.

Section 2. Towards the attainment of the stated general objective, the ORSP shall:

(a) Promote the application of appropriate OR/MS approaches and tools for analyzing and/or solving problems

that contribute to the development of the country;

(b) Promote and support the education and training of potential and existing practitioners of OR/MS in the country;

(c) Establish linkages and cooperate with other professional organizations, both locally and internationally, with similar or related goals as those of ORSP;

(d) Tap local and international resources in support of the ORSP's undertakings; and

(e) Provide a venue for purposeful interaction among its members.

Article III.

MEMBERSHIP

Section 1. The members of the Society are classified as Regular, Associate, Honorary, and Institutional.

(a) Regular Members shall be those who are involved in the practice of Operations Research/Management Science in companies, industries, schools or in the government. This also includes those who are teaching Operations Research/Management Science and/or allied areas in Universities and Colleges. Those nominated for regular membership by the Membership Committee are elected by a majority vote of the Board of Directors. To remain in good standing, regular members should be active in interest/work groups recognized by the society. A regular member who is inactive for two years may not hold office. Only Regular Members

have the right to vote and hold office.

(b) Associate Members shall be those who fulfill the usual criteria for regular membership but cannot be active in a specific interest/work group within the society, or students of OR who are at least in their junior year in college. Where Student Chapters have been formed, the student associate member shall be classified into one of these chapters. The mechanics of admission for Regular Members shall equally apply for Associate Members.

(c) Honorary Members are those who, by virtue of their contribution to the attainment of the society's objectives, have been recommended by the Board of Directors and have been voted for admission by the general membership.

(d) Institutional Members are companies, associations or institutions which support the goals of the society and are elected for membership by the Board of Directors.

Article IV.

BOARD OF DIRECTORS AND OFFICERS

Section 1. The Board of Directors shall consist of seven (7) Regular Members who are elected by written ballot by Regular Members of good standing. The Board of Directors shall be the governing body of the ORSP and shall manage its affairs and business.

Section 2. The members of the Board shall hold office for a

period of two (2) years and shall serve until their successors shall have been duly elected. No member of the Board may serve for more than two successive terms.

Section 3. The officers of the ORSP shall consist of the President, Vice-President, Secretary, Treasurer, and Auditor. The Board of Directors shall elect from among themselves the President, Vice-President, Secretary, and Treasurer of the ORSP. The Auditor shall be elected at large by the General Assembly. These officers shall serve for a one year term. No officer may serve in the same capacity for more than two successive years.

Section 4. Election for new members of the Board shall be held during the Society's General Assembly. An official ballot shall be sent to each Regular Member by the Secretary of the Society at least thirty (30) days before elections. Filled official ballots may be mailed but must be received by the Secretary before or submitted during the General Assembly meeting.

Article V.

DUTIES OF OFFICERS

Section 1. The President shall preside all meetings of the Board of Directors and the General Assembly. It is the duty of the President to submit to the General Assembly during its annual meeting a written report of the activities of the Society during the preceding year.

Section 2. The Vice-President shall perform such duties as may be delegated to him by the President. He shall assume the duties of the President in case of incapacity or disqualification of the President.

Section 3. The Secretary shall keep the minutes of all meetings of the General Assembly and of the Board of Directors. He shall coordinate the various activities of the Society and perform other functions which the President may assign him from time to time.

Section 4. The Treasurer shall collect the dues of members and other accounts of the ORSP. He shall deposit the collections in a bank designated by the Board. He shall disburse the funds of the society with the authorization of the Board of Directors. He shall keep record of the accounts of the Society, including inventories of all its properties. He shall submit an annual financial report to the General Assembly and such other reports the Board may require.

Section 5. The Auditor shall audit the books of accounts of the Society and shall report his findings to the Board in writing.

Article VI.

COMMITTEES

Section 1. The ORSP shall form the following standing committees: Membership, Finance, Research and Publications, Programs, and External Affairs. The committee members either volunteer for membership in specific committees or are appointed by the President. Each Committee shall be composed of five (5) Regular Members who are representatives of business and industry, government, and the academe.

Section 2. The description of each committee shall be as follows:

(a) The Membership Com-

mittee shall have as its main function the nomination of new members to the Board of Directors. It shall be headed by the Secretary.

(b) The Finance Committee shall have as its main function recommending ways and means of generating funds to support the Society's activities. It shall be headed by the Treasurer.

(c) The Research and Publications Committee shall be responsible for the Society's publications and press releases and shall see to it that all Regular Members receive copies of the Society's publications. The five members shall elect from among themselves the Editor-in-Chief and the rest shall act as Associate Editors.

(d) The Programs Committee shall be responsible for planning and organizing the Society's activities including seminars, conferences, and the General Assembly meetings.

(e) The External Affairs Committee shall be responsible for coordinating with related external organizations, both local and foreign, such programs and activities that may contribute to the attainment of the Society's objectives. It shall be headed by the Vice-President.

Section 3. The President may create ad-hoc committees and appoint its members when deemed necessary.

Article VII.

GENERAL ASSEMBLY AND MEETINGS

Section 1. The General Assembly shall be composed of all the members of good standing of the Society. The General Assembly shall formulate the general policies of the Society.

Section 2. The General Assembly shall elect new members of the Board by secret ballot during an annual meeting. The annual meetings of the General Assembly shall be held in March of each year.

Section 3. Plenary sessions and scientific paper sessions with invited guests and personalities in OR shall also take place during this annual meeting.

Section 4. The Board of Directors shall meet in regular sessions once every month.

Section 5. Special Meetings of the General Assembly may be called by the Board of Directors or special meetings of the Board may be called by the President as may be deemed necessary.

Section 6. A quorum shall consist of 50% + 1 of total Regular Membership.

Article VIII.

PUBLICATIONS

Section 1. The Society shall publish its annual proceedings and other publications needed to carry out the objectives of the Society.

Section 2. Regular and Institutional Members shall be entitled to copies of the publications free of charge.

Article IX.

DONATIONS AND FINANCES

Section 1. Membership dues shall be determined by the Board of Directors.

Section 2. All donations in cash or in kind such as real property, books, journals, pamphlets, documents, manuscripts and other items which are of

value in the field of Operations Research/Management Science shall be officially acknowledged and recorded as property of the Society.

Article X.

AMENDMENTS

Section 1. Any provision of the Constitution and By-Laws may be amended or repealed by two-thirds (2/3) votes of the Regular Members of good standing as of the date of a regular or special meeting called for the purpose.

Article XI.

TRANSITORY PROVISIONS

Section 1. The organizers of the ORSP and those who are invited to join the Society and attend the 1st General Assembly shall be considered as Regular members.

Section 2. The first Board of Directors of the ORSP shall be elected during the first General Assembly. The members of this Board shall have a term of office of one (1) year.

Section 3. The Membership Committee and an ad-hoc Elections Committee shall be created prior to the first General Assembly. The committee members shall be elected by and from among the organizers; The Elections Committee shall take charge of the nominations for membership to the Board of Directors and the election proceedings during the first General Assembly.

Section 4. This Constitution and By-Laws shall take effect immediately upon ratification by a majority vote of Regular Members.

Drafted by:

Dr. Rolando Danao
Dr. Arthur de Guia
Ms. Elise del Rosario
Mr. Diosdado Engbino
Dr. Roberto Padua
Dr. William Torres

The marriage...

In connection with this problem, George Dantzig, tells the following story:

In 1955, at the summer meeting of the Operations Research Society in Los Angeles, I was interviewed by the press. The reporter turned out to be the brother of my small daughter's piano teacher, and so we became quite friendly. I explained to him that linear programming models originated in the Air Force, and I described their growing applications to industrial problems. It became obvious that this veteran Hollywood reporter was having a hard time seeing how to make the material into exciting news copy. In desperation I suggested, "How about something with sex appeal?" "Now you're talking," he said. "Well," I continued, "an interesting by-product of our work with linear programming models is a mathematical proof that of all the possible forms of marriage (monogamy, bigamy, polygamy, etc.), monogamy is the best." "You say that monogamy is the best of all possible relations?" he queried. "Yes," I replied. "Man," he said, shaking his head in the negative, "you've been working with the wrong kind of models."

From Dantzig, George B.
Linear Programming and
Extensions
Princeton University Press
Princeton, New Jersey
(1963)

Suggested readings... FROM PAGE 1

5. Geoffrion, A. M., "Can MS/OR Evolve Fast Enough," *Interfaces* 13(1), 10-25 (1983).
6. Sagasti, F. R. "Thoughts on the Use (and Abuse) of OR/MS in the Planning and Management of Development." (Or can OR/MS Help in the Planning and Management of Revolutions?)" in *Selected Readings in Operational Research for Developing Countries* (eds.) Luck, G.M. and Walsham, G., The Operational Research Society, U.K. (1982).
7. Cyert, R.M. "The Future of Operations Research" in *Operational Research 81, Proceedings of the Ninth IFORS International Conference on Operational Research* (ed.) Broas, J.P., North-Holland, Amsterdam (1981).
8. Lesourne, J., "From Operations Research to Systems Analysis: A Change in Vocabulary or a New Conceptual Framework?" in *Operational Research 81 Proceedings of the Ninth IFORS International Conference on Operational Research* (ed.) Brans, J.P., North-Holland, Amsterdam (1981).
9. Kemball-Cook, D. and Wright, D. J., "The Search for Appropriate OR: A Review of Operational Research for Developing Countries," *J. Operat. Res. Soc.* 32, 1021-1037 (1981).
10. Ransser, G. C. Just, R. E., Zilberman, D., "Prospects and Limitations of Operations Research Applications in Agriculture and Agricultural Policy," in Yaron, D. and Tapiero, C.S. (eds.), *Operations Research in Agriculture and Water Resources*, North-Holland (1980).
11. Clayson, James E., "How Relevant is Operational Research to Development? The Case of Kenyan Industry," *J. Operat. Res. Soc.* 31, 293-299 (1980).
12. Ackoff, Russell, L. "The Future of Operational Research is Past," *J. Operat. Res. Soc.* 30(2), 93-104 (1979).
13. -----, "Resurrecting the Future of Operational Research," *J. Operat. Res. Soc.* 30(3) 189-199 (1979).

Happy

First

Anniversary

FAVILA, RIZALINO
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Coca Cola Bottlers Phil. Inc.
Otis, Pandocon, MM

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