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CONTRIBUTORS

François Baccelli is Directeur de Recherche in the Performance Evaluation Group at INRIA—Sophia Antipolis, France. **Armand Makowski** is an associate professor in the Electrical Engineering Department at the University of Maryland, where he is also affiliated with the Systems Research Center. Their paper grew out of the desire to compare the relative merits of two stochastic upper bounds on system response time in Fork–Join queues; these bounds were established in a forthcoming paper, “The Fork–Join Queue and Related Synchronization Constraints: Stochastic Orderings and Computable Bounds” (*Appl. Prob. J.*, with Adam Shwartz).

E. G. Coffman, Jr. is a member of the technical staff at AT&T Bell Laboratories, Murray Hill, N.J. His research interests are the analysis of combinatorial and probabilistic models of scheduling and packing problems. He and M. Yannakakis continue to research in the area of their paper. They will report soon on an analysis of lot sizing problems that involves setup times.

Ron S. Dembo is President of Algorithmics Inc. and a professor of operations research in the Faculty of Management at the University of Toronto. His research interests include large-scale optimization and applications of OR in the finance industry. Much of the motivation for this paper came from his work on developing algorithms for nonlinear network optimization and from a consulting relationship with Hidroelectrica Espanola S.A.

Erhan Erkut is a professor in the Department of Finance and Management at the University of Alberta. His research interests include operations management and location theory. **Richard L. Francis** is a professor in the Department of Industrial and Systems Engineering at the University of Florida. His research interests are location theory, facilities planning and applied mathematical programming. **Timothy J. Lowe** is a professor of management in the Krannert School of Management at Purdue University. His teaching and research interests are in operations management and operations research. **Arie Tamir** is a professor in the Department of Statistics at Tel Aviv University, and a visiting professor in the Department of Statistics and Operations Research, Stern School of Business, New York University. His

current research is in the areas of discrete programming, location theory, and algebraic optimization. This paper is an outgrowth of work directed toward gaining a better understanding of network location problems and relating their properties to mathematical programming properties.

George Fishman is professor and chairman of the Department of Operations Research at the University of North Carolina. His main interest is the development of statistical methodology applicable to the analysis of output from discrete event digital simulation models. He is the author of *Concepts and Methods in Discrete Event Simulation* (Wiley, 1978). At present, he is working on variance reducing methods for network reliability estimation and on the influence of concurrent processing on simulation program structure. Professor Fishman is a member of ORSA, TIMS, and the American Statistical Association.

Matteo Fischetti holds a Ph.D. from the University of Bologna. **Silvano Martello** and **Paolo Toth** are associate professor and professor, respectively, of Operations Research and Optimization Methods at the Dipartimento di Elettronica Informatica e Sistemistica, University of Bologna. Professor Toth is president of the Italian Operations Research Society. The current research is related chiefly to combinatorial optimization theory and its applications to transportation. Their article grew out of a project they undertook for the Consiglio Nazionale della Ricerche, and is related to a previous paper (*Opns. Res.* **35**, 849–958, 1987) that addressed the spread-time constraint problem. Both papers are part of Matteo Fischetti’s doctoral dissertation, supervised by Professors Toth and Martello, which was awarded the 1987 Dissertation Prize of the Transportation Science Section of ORSA.

Richard L. Francis, see **Erhan Erkut**.

Cheryl Gaimon is an associate professor and the Area Coordinator for Operations Management in the College of Management, Georgia Institute of Technology. Her research focuses on decision making concerning the optimal mix of resources employed by an organization to meet its long-term output goals or to maximize profit. The impact of examining technology acquisition and its impact on pricing in a competitive

environment was a natural outgrowth of the author's related work for single firms. This research was particularly applicable to strategic planning efforts in the telecommunications industry, culminating in cooperative efforts between the author and Dr. Michael Kostreva, formerly a research scientist at GTE Labs.

Christos Langaris holds the title of Senior Lecturer in the Department of Mathematics at the University of Ioannina, Greece. His current research interests are in the area of queueing networks with finite intermediate space and queueing systems with dependencies between their random processes. This article is the result of the author's attempt to develop and analyze models possessing characteristics from both areas.

Timothy J. Lowe, see **Erhan Erkut**.

Armand M. Makowski, see **François Baccelli**.

Silvano Martello, see **Matteo Fischetti**.

John M. Mulvey's current research involves models and associated algorithms for stochastic optimization problems, with emphasis on large-scale stochastic networks. He is Professor and Director of the Engineering and Management Systems Program at Princeton University. He is also consultant manager for asset allocation at Pacific Financial Companies, Newport Beach, California.

Ardavan Nozari is Vice President of Research at Salomon Brothers Inc., N.Y., where he is involved in the development and analysis of financial models. The present paper (with E. G. Coffman and M. Yannakakis) was written while he was with AT&T Bell Laboratories doing research in improving manufacturing systems. This research was part of such an overall effort by AT&T.

Shmuel S. Oren, see **Stephen G. Powell**.

Stephen G. Powell is an assistant professor of business administration at the Amos Tuck School, Dartmouth College. **Shmuel S. Oren** is Professor and Chairman, Department of Industrial Engineering and Operations Research, University of California, Berkeley. Their article is related to an earlier paper in *Operations Research* ("Optimal Supply of a Depletable Resource with a Backstop Technology: Heal's Theorem Revisited," March–April 1985). The current work is based on Powell's doctoral research at Stanford University, supervised by Professor Oren. Powell's current interests are decision analysis, mathematical modeling, and energy economics. Oren's interests include

the pricing of electric utilities, systems economics and optimization.

Meir J. Rosenblatt is Head of the Industrial Engineering area in the Faculty of Industrial Engineering and Management at Technion-Israel Institute of Technology, and the Thomas C. Witmarsh visiting professor of Operations and Manufacturing Management at the Olin School of Business at Washington University. His main research interests are production and inventory management, facility layout and design, and capital budgeting.

Donald B. Rosenfield is a senior lecturer at the Sloan School of Management at MIT and Program Manager for the MIT Leader's for Manufacturing Program. The work described in the article was motivated by the development of an inventory reduction problem encountered in a consulting assignment. Professor Rosenfield has observed problems of excess inventory in several manufacturing companies. Noting the substantial economic impact of this inventory, he developed some general rules for disposal which served as the basis for the article.

Keith W. Ross is an assistant professor of systems engineering at the University of Pennsylvania. His research interests include performance modeling of telecommunication networks, applied stochastic processes, and Markov decision processes. The research in the paper was motivated by the need to impose delay constraints in dynamic optimization problems for telecommunications networks. This paper is part of a larger body of research on criteria for unichain and multichain Markov decision processes.

Bhaskar Sengupta is a Distinguished Member of the technical staff at AT&T Bell Laboratories, Holmdel, N.J. His research interest is in the area of queueing theory, and he also works on applications to computers, communications and manufacturing systems. The work in this paper was motivated by his consulting experience with the factories of AT&T.

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Lawrence Stone is Senior Vice President at Metron, Inc. His book, *Theory of Optimal Search*, was awarded the 1975 Lanchester Prize. This paper is based on a

talk that he gave at the Washington, D.C., ORSA/TIMS meeting in April 1988 as part of a session of papers reviewing recent developments in Lanchester Prize areas. He continues his work in search theory but with an emphasis on developing interactive, computer systems for search planning and other decision aiding applications. He recently applied his search expertise to assist a private group in the successful search for a ship lost over 100 years.

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a talk given at the 1988 ORSA/TIMS meeting in Washington, D.C., in a session that sought to follow up on the research reported in papers that won the Lanchester Prize. After applying OR to fire department problems in New York City, Dr. Walker used similar tools to analyze the water management problems of The Netherlands. He has spent the last few years helping the Air Force develop a decision support system to manage its enlisted force, and is currently writing a book that deals with building large, model-based multiuser decision support systems.

Mihalis Yannakakis is a member of the technical staff at AT&T Bell Laboratories, Murray Hill, N.J. His research interests are combinatorial algorithms and complexity theory.

Stavros A. Zenios is the Milken Foundation Assistant Professor of Decision Sciences at the Wharton School of the University of Pennsylvania. His research interests are large-scale network optimization and its applications. The motivation for this paper came from his research on parallel optimization and earlier work at the World Bank on the estimation of social accounting matrices.