

AUTOFACT 3

Conference Proceedings



Conference Proceedings

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PROCEEDINGS

AUTOFACT III

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PREFACE

Economic, social and technological forces have spurred the development of computer-integrated-manufacturing (CIM), also known as the automatic factory. Manufacturers in several countries are already implementing the automatic, integrated factory. As stated by one of industries leading manufacturing research scientists, Dr. M. Eugene Merchant: "Systems integration is, for many companies, the key to survival in the next decade." CIM technology is currently being utilized by many companies whose goals are to improve productivity; upgrade product quality and material usage; lower production, labor and energy costs, and improve their performance in the marketplace.

The technologies of CIM cover a wide range of computer-based systems and methods including: *CAD/CAM, robotics, group technology, automatic assembly, predictive maintenance, flexible manufacturing, automated testing & inspection, materials handling and flow, interactive graphics, cellular manufacturing, engineering data base, facilities engineering, process planning*, and much more.

As the primary sponsor of **Autofact III**, the Computer and Automated Systems Association of the Society of Manufacturing Engineers (CASA/SME) has received cooperative support from Robotics International (RI/SME), the Robot Institute of America (RIA), the Material Handling Institute (MHI) and the Electronics Division of the American Society of Quality Control (ASQC) in the development of this conference.

The proceedings for **Autofact III** offer a comprehensive update of today's technological advancements with insight into tomorrow's developments when highly-automated, computer integrated factories will be commonplace.



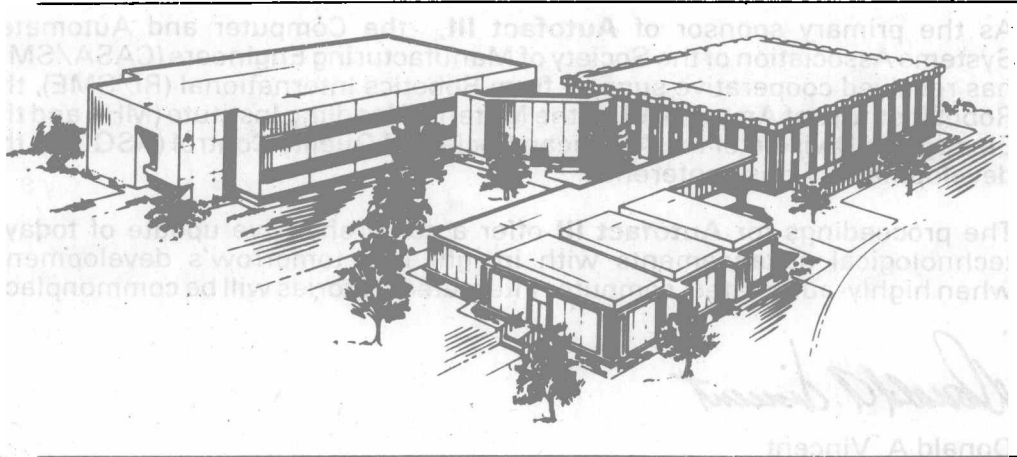
Donald A. Vincent
Executive Director
Computer and Automated Systems Association of SME

about CASA/SME

The Computer and Automated Systems Association of the Society of Manufacturing Engineers (CASA/SME) was founded in 1975 to provide comprehensive and integrated coverage of the field of computers and automation for the advancement of manufacturing.

As an educational and scientific association, CASA/SME has become "home" for engineers, managers and other professionals involved in computer-based technologies and automated systems. CASA/SME is applications oriented and addresses all phases of research, design, installation, operation and maintenance of the total manufacturing enterprise. AUTOFACT III is one example of its wide-ranging activities.

Specific CASA/SME goals are to: (1) provide professionals with a focus for the many aspects of manufacturing which utilize computer systems automation, (2) provide liaison among industry, government and education in identifying areas for further technology development, and (3) encourage the development of the totally integrated manufacturing facility.



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CHAPTER 1

PLENARY SESSION

Why American Industry Has Lagged In Productivity and Technical Innovation—A View from the Board Room

John K. Castle
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Abstract

Over the last decade, John K. Castle, President of Donaldson, Lufkin & Jenrette, Inc., has been a director of a dozen U.S. corporations - some large, some small. In his presentation, he will discuss what he considers to be the key factors influencing why senior managers and directors of major American corporations have been negligent in promoting technology and productivity in their enterprises. He will note the disincentives in the current American system that detract from productivity improvement and technical innovation, and discuss changes in national policy that can accelerate these areas which are so important to our Nation's competitive edge. Mr. Castle's view is that U.S. corporate leaders have overlooked productivity improvement, but with proper motivation can again establish U.S. industry to its position of world leadership.

Regaining the Lead in Productivity Growth

Herbert E. Striner
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Abstract

Productivity is one of the more complicated economic and management problems confronting society. It must be dealt with by the private sector as well as by various components of the public sector. Though the problem is seen as economic, it is one which can only be understood by virtue of a complex set of factors which must be seen as a form of a simultaneous equation in concept. There are 12 critical factors involved in affecting productivity, either at the industry level or the national level. These factors are: 1. Research and Development; 2. Promotion and Innovation; 3. Institutional Relationships and Values; 4. Business Savings and Investment; 5. Personal Saving and Investment; 6. Natural Resources Development and Substitution; 7. Government; 8. Worker Quality and Skills; 9. Production Techniques and Systems; 10. Management Techniques and Philosophy; 11. Performance Information; 12. Knowledge Transfer.