



BIOGRAPHY – RICHARD E. MORLEY

Richard E. Morley (Dick) is a member on the Board of Directors of various companies across the United States and has been in high technology since the beginning of solid-state electronics. Mr. Morley was Chairman of the Board of NCMS (National Center for Manufacturing Sciences) from January 2003 until April 2009. He has a track record of consistent success in the founding of high-technology companies for which he provides initial product concept and continuing technological presence and has been used as an expert witness in several court cases.

A nationally recognized expert in the field of computer design, artificial intelligence, automation and an authority on the factory of the future, Mr. Morley is an engineer, consultant and inventor; his inventions include the PLC (Programmable Logic Controller), now standing in the Smithsonian Institute. He holds more than twenty United States and foreign patents.

Mr. Morley is well known as a lecturer, has written extensively for such publications as *Manufacturing Systems* magazine and has published many works of his own. To date, his feature articles appear in *Manufacturing Automation* magazine. His latest book, *Out of the Barn*, was published in October 2002 and another book, *The Technology Machine*, was published in September 1999.

As founder of the angel investment group the Breakfast Club, Mr. Morley is currently an active member with this group of investors, having participated in more than 100 startup companies in the New Hampshire area.

He was former Director of Advanced Technologies for Gould, Inc., is a Gould Fellow of Science and Engineering, a Fellow of SME, Bios LP and ICS. In addition, he was awarded the 1990 Entrepreneur of the Year by *Inc.* magazine, Merrill Lynch and Ernst & Young. He is a 1991 recipient of The Franklin Institute's Howard N. Potts Medal, and holds the Prometheus Medal placing him into the Automation Hall of Fame. His work with the PLC ranked him third by the International IEN as the "Top 100 Most Significant Industrial Products of the 20th Century." In October 1999, ISA (the Instrumentation, Systems and Automation Society) honored him with the "Life Achievement Award" and *Fortune* magazine awarded him their "Heroes of Manufacturing Award" in March 2000.

Recognized as one of the giants in the field by the Engineering Society of Detroit, he has extensive experience in high-tech consulting. Mr. Morley is involved in new product development at the highest management levels. He can be reached at morley@barn.org.

PUBLICATIONS – Partial List

Number of Books: 2

Papers:

Articles:

Title	Publication	Publisher	Dates
<i>Networking Multiple Processors Increases Computing Speed</i> (paper – author)	I&CS		9/1990
<i>A Technological & Corporate Strategy for Addressing the Control Needs of the '90s</i> (paper – co-author)	Generic Control for Batch Manufacturing	Purdue Research Foundation	9/1990
<i>Sneak Previews of the 1990s</i> (paper – author)	Manufacturing Systems	Hitchcock	4/1990
<i>New Technology Solves Large Automation Problems</i> (paper – author)		Geithner/McGowan	4/1990
<i>Neural Nets for Industry</i> (paper – author)	Industrial Computing		3–4/1990
<i>Neural Networks at a Glance</i> (paper – editor)		Graeme Publishing	1989
<i>Operating System Musts and Corporate Thrusts</i> (paper – author)	Automation Products & Technology Magazine		1989
<i>20th Anniversary of PCs MODICON's Perspective</i> (paper – author)	ESD Technology		3/1989
<i>We Want and Need Real Time</i> (paper – author)	Industrial Computing		3/1989
<i>CIM & Communications</i> (paper – author)	Computer Integrated Mfg. Handbook	McGraw-Hill	1987
<i>Demystifying Artificial Intelligence</i> (author)		Graeme Publishing	1986
<i>Sourcebook on Artificial Intelligence</i> (editor)		Graeme Publishing	1986
<i>The Technology Machine</i> (co-author)		Simon & Schuster	9/1999
<i>Out of the Barn</i> (author)		ISA / Self	10/2002

PATENTS

Number of U.S. and Foreign Patents: Approx. 20

Partial List of Significant Patents:

Patents	Year	Relationship	Significance
Andover Controls	1976	Inventor of building control unit	Andover
Hand-held Terminals	1970	Termiflex	New Technology
Programmable Controls	1968	Father of the PLC	Major Business
Magnetic Thin Film	1960	Scientist	

MEMBERSHIPS & ACTIVITIES IN SOCIETIES AND/OR TRADE ASSOCIATIONS

Society/Association	From	To	Committee	Position
ISA	4/1990	Present		Executive Member/ Consultant
ASHRAE	1987	6/1990	SPC 135p Control Systems Message Protocol	Member
AIAA	1988			Past Member
IEEE	Student			Past Member
NCMS	1990	1999	Strategic Technology Board	Member
ICS	6/1991	Founder		Member
SME	9/1994	Present		Fellow/Member
MIT Club of NH	1997	Present		Member

HONORARY SOCIETIES, CITATIONS, AWARDS

Award	Organization/Sponsor	Year
Fellow-Science & Engineering	Gould Inc.	1981
New England Entrepreneur of the Year (Breakfast Club)	Ernst & Young, Inc. Magazine & Merrill Lynch	1990
National Entrepreneur of the Year (runner-up)	Ernst & Young, Inc. Magazine & Merrill Lynch	1990
Howard N. Potts Medal	Franklin Institute	May 1991
Engineer of the Year	Engineering Society of Detroit	1981
Albert M. Sargent Progress Award	Society of Manufacturing Engineers (SME)	May 1994
Fellow-Society of Manufacturing Engineers	Society of Manufacturing Engineers	1995
Fellow-Industrial Computing Society	Industrial Computing Society	1995
Automation Hall of Fame	Chicago Institute of Science & Technology	
Prometheus Medal	International Award	March 1996
Fellow-Bios Group LP	Bios Group LP	1997
100 Most Significant Products of the 20th Century (Top 10)	Industrial Equipment News	January 1999
Life Achievement Award	ISA	September 1999

PROFESSIONAL EXPERIENCE (Partial List)

From	To	Employer	Title	Business/Duties
2003	Present	GE Fanuc Intellution	Member	Lead User Council
2003	2009	NCMS	Chairman of the Board	
2002	Present	SME	Board of Directors	
1999	2002	Taylor Manufacturing	Board of Directors	Consulting
1999	2002	Prædictus Corporation	Board of Directors	Senior Advisor
1997	Present	BIOS LP	Advisory Board	
1997	1998	Ernst & Young	Consultant	Development
1997	Present	Pyramid Composites	Adv. Bd./Consul.	Technical Development
1996	Present	Pangaea	Consultant	Development
1996	1997	Sensor Pulse	Consultant	Development R & D
1994	Present	PIM CORP-Korea	Consultant	Development
1993	2002	Yaskawa Electric Corporation	Consultant	Advanced Development
1990	1998	Andover Controls	Consultant	Advanced Development
1989	2001	Schneider Automation	Consultant	Advanced Development
1987	Present	Breakfast Club	Co-Founder	Angel
1986	1996	Club of Detroit	Founder	Charter/Member
1992	1995	Bangkok Oriental Cuisine, Inc.	Co-owner	Thai Food Restaurant
1985	2006	Flavors Technology, Inc.	CEO/Founder	Management/Technical
1989	1991	Lights Synch, Inc.	Board Directors	Intelligent Lighting Control Systems
1983	Present	R. Morley Inc.	President	Engineering Consultant
1983	1990	Graeme Publishing Corp.	President/Founder	Management
1983	1988	Eloquent Systems Corp.	VP & Founder	Technical Development
1980	1987	Gould, Inc.	Director Adv. Tech.	Advanced Development
1976	1998	Andover Controls Corp.	Board/Founder	Advanced Development
1973	1975	Termiflex Corporation	Board/Founder/Pres.	Technical Development
1968	2002	Modicon	Board/Founder	Development
1964	1971	Bedford Associates	Founder	Consulting
1976	1988	Functional Automation	Founder/President	Consulting
1960	1964	LFE (Laboratory for Electronics)	Founder/President	Defense
1971	1972	REMtech	Founder/President	Consulting
1975	1975	Phoenix YM	President	Technology

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Date of Birth: 12/1/32

Place of Birth: Clinton, MA – U.S. Citizen – Raised in Clinton, MA and Long Island, NY

Spouse: Shirley Anne Morley [49 years]

Description of Self: Live and work in the woods • humorist • futurist
 skier • biker [Harleys] • foster dad

EDUCATION

Institution	Course	Date
Highland Park	College	1947–1950
MIT	Physics	1950–1954
Northeastern U	Engineering	1965
MIT	Artificial Intelligence	1981

PRESENT AND PAST ACCOMPLISHMENTS (a partial list includes):

Lecturer for

Daniel Webster College:

- MBA program

Worcester Polytechnic Institute in:

- Artificial Intelligence
- Factory of the Future
- Microprocessors
- Many other professional groups

Writer in the field of

- Control
- Materials & Metallurgy
- Management/Entrepreneurship
- Artificial Intelligence
- Poetry

Patents (approximately 20)

- Computers
- Control
- Communication
- Magnetics

Entrepreneur

- High-Speed Real-Time Systems (Flavors Technology, Inc.)
- Programmable Controllers (Modicon/AEG)
- HVAC (Andover Controls)
- Shaft Encoders (Trump-Ross)
- Portable Terminals (Termiflex)
- Consulting (RMI and Bedford Associates)
- Communications (Plexus)
- Media (Channel 62, Boston)
- Artificial Intelligence (Eloquent Systems Corp. & Flavors Technology, Inc.)
- Publishing (Graeme Corporation)
- Venture Capital (Lunar Properties)
- Point-of-Sales Terminals (Fasfax)
- Bangkok (Good Thai Food)
- Machine Control via the Web (JavaHoe)
- Loosely Coupled Sets (Invisitech)

Consulting (approximately 200 projects) including:

- U.S. Dept. of Health & Human Services
- Digital Equipment Corporation
- Textron
- Hitchiner
- T.A. Associates
- 3i Ventures Corporation
- Modicon/AEG
- MODCOMP
- Eli Lilly
- M&M Mars
- Philip Morris
- Phillips Plastic
- Proctor & Gamble

Many magazine and newspapers (U.S. and overseas) have published comments, quotes and feature articles. A partial list includes:

American Machines	ESD Technology	Mini / Micro Systems
Appliance Manufacturer	Evolving Enterprise	Modern Materials Handling
Assembly Engineering	Fast Company	Packaging Digest
Automotive Industries	IEEE Spectrum	Paper Age
Automotive News	Inc. Magazine	Paper Design
Metal Working News	Industrial Computing	Paper Trade Journal
Boston Sunday Globe	Industrial Engineering	Pharmaceutical Engineering
Business Week	Industry Week	Plant Services
Chemical Engineering	Instruments & Control Systems	Power Transmission Design
Computer-Aided Engineering	Intech	Production
Control Engineering	Iron Age	Production Engineering
Datamation	Machine Design	Programmable Controls
Detroit Engineer	Manufacturing Engineering	Reflector (IEEE), The
Digital Design	Manufacturing Systems	Robotics Today
Electrical Marketing	Metal Producing	Target
Electronic Business	Manufacturing Automation	Technology Update
Electronic Design	Milwaukee Journal, The	Tooling & Production
Electronic News	Milwaukee Sentinel	Ward's Automotive World

Corporate Clients (partial list)

AEG-Germany	Johnson Controls, Inc.	Ross Designers & Manufacturers
AEG-Canada	IBM	of Minnesota (RDM)
AMRResearch	Invensys	Schneider Automation, Inc.
Andover Controls	Modicon	Sensorpulse/Total Control
Arthur Andersen LLP	NCMS (National Center for	Tark, Inc.
BIOS LP	Manufacturing Science)	Taylor Manufacturing
Ernst & Young	PIMCorp-Korea	Termiflex
Flavors Technology	Praedictus Corporation (ATA)	Total Control Products, Inc.
General Electric	Pyramid Composites	Yaskawa Electric Corporation – Japan
Gould Engineering		