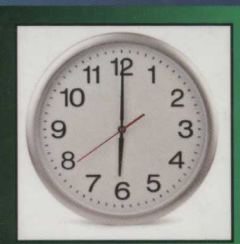
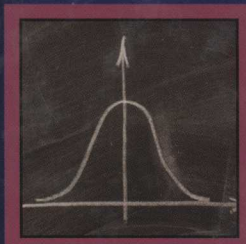
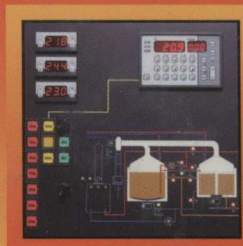


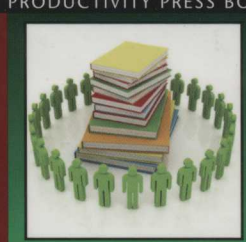
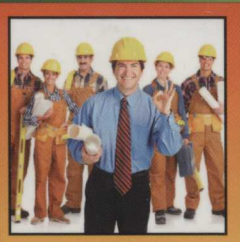
# The 12 Principles of Manufacturing Excellence

A Leader's Guide to Achieving and Sustaining Excellence

LARRY E. FAST



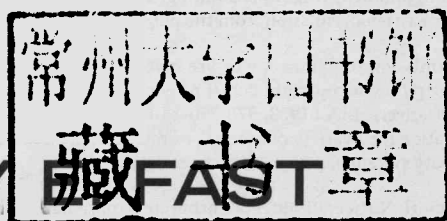
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# **The 12 Principles of Manufacturing Excellence**

A Leader's Guide to Achieving  
and Sustaining Excellence

*To my parents, Marge and "Rebel," and to my children,  
Jennifer and Scott, who have been the inspiration for  
most of the good things I've done in my life.*



---

# Preface

---

My leadership experience really started in fourth grade when I was elected class president. That was the first time I realized that others looked to me to provide direction, to organize and lead the implementation of important work, and to show the initiative and the passion to make things better. That first project was to plan a fund-raiser for the CARE organization. (That's where the expression "sending a care package" came from.) Our mission was to help starving children in Africa. My recollection is that we raised the handsome sum of \$25.00. It was 1957.

Over the next 50 years I would be called on to lead in many other venues: more elected offices in school; chair of various committees for the Student Foundation or the Fraternity; board member and president of not-for-profit organizations such as Toastmasters International and Junior Achievement; commissioned officer in the U.S. Air Force; coach of my daughter's and son's Little League baseball teams; member of advisory boards at three different universities; various supervisory and management positions in the wire and cable industry for 10 years before devoting the next 25 years in the industry as a senior executive for two different wire and cable companies.

Over this period of time I had the good fortune to work for some excellent mentors and some very supportive senior management teams. You can learn a lot by just being in the same conference room or on the same airplane with other good leaders. You can also learn a lot from those in other walks of life who also participate on advisory and nonprofit boards and in leadership seminars. And you can learn a lot from the best and brightest on your staffs as well. I know that I have. Being observant is an important trait for anyone who aspires to leadership roles. After all, aren't we all just a composite of the people and styles we've experienced our entire lives?

As I sit down to begin the book I've been thinking about for the last 15 years, I just had to reflect on some of the people who have helped shape me and have taught me how to really think about my profession as a manufacturing leader. Each of these family members, former teachers, coaches, and coworkers stands out in my mind as an important influence on development of the style that has helped me be successful. (I know that doing

this puts me at risk of forgetting someone who has been especially helpful in my development. I can only hope that if I forget to name someone that I'll be forgiven for the inadvertent oversight.)

**Clarence Fast**—My father, "Rebel" as he was known, who showed me by his example every day the importance of hard work and inner drive to get the most out of limited God-given abilities.

**Marjorie Fast**—My mother, who taught me persistence and tenacity to achieve my goals.

**Mrs. Moore**—My fourth grade teacher, who gave me the encouragement and the confidence to step to the front.

**Duane "Cricket" Lee**—My Little League baseball coach, who taught me about anticipation and about being in the right place at the right time—without being told.

**Mr. Nesbitt**—My eighth grade track coach, who taught me to find alternative ways for success. (When you aren't quite fast enough for the dashes, take up broad-jumping and low hurdles instead.)

**Joe McPartland**—My first boss, the manager of the local IGA grocery store. As a sophomore in high school I learned a lot about customer service, working efficiently and seizing opportunities to learn new things, all for \$.65 per hour.

**Archie Durham**—My boss when I worked summers at the mold factory where Dad was a supervisor. I learned three important lessons: (1) just because your dad works here doesn't mean you don't have to do your job and make the rates; (2) if the crew gets behind it's OK for the boss to roll up his sleeves and help out; (3) if you are the supervisor of competent workers who produce quality product with a good work pace, leave them alone; just make sure they have what they need to get the job done.

**Colonel Crowley**—U.S. Air Force, who taught me you can be a tough-minded person but still have a good heart and recognize important achievements. For example, he took the time to write a personal note to my parents to tell them that I had been selected the Junior Officer of the Year in 1970 at Francis E. Warren Air Force Base in Wyoming. He didn't have to do that; very few knew what he did, but he did it anyway.

**Dottie Clemens**—Director of Special Services, my boss at 15th Air Force, March Air Force Base in California, who taught me the importance of great planning and discipline.

**John Consolino and Don Platt**—My first boss at Belden Wire & Cable (John) and the personnel manager (Don), who brought me into the

company and into their management training program right out of the military. These were two seasoned veterans who knew the business well, took the importance of employee relations very seriously, and taught me the significance of involving associates in decisions that affect them in a factory. They also emphasized to me that management should be visible and accessible. They sought to have a personal relationship with everyone in a factory that employed 1,600 people when I started there in 1972.

**Lloyd Shaw**—My boss, who trusted me to navigate the plant through the severe material allocations and shortages caused by the oil shock in 1973–1974. He then demonstrated complete confidence and support in my guiding the plant through the most severe capacity changes in the 50-year history of the plant as we rode out a severe recession in 1975–1976.

**Roland Miracle**—The first plant manager to whom I reported, who taught me a lot about mentoring by exposing me to the thinking behind important processes and then involving me in the implementation to cement the learning. For example, he instilled in me the science of job evaluation and how the Hay System of salary administration works. He also communicated the important linkages of the human resource systems such as position descriptions, writing meaningful personal objectives, development plans, making succession plans, and creating and administering salary plans. He became my model of how to mentor high-potential folks who have worked for me over the years.

**Nish Teshoian**—The president of Belden Wire & Cable, who coached me on the importance of focus on the significant few and a no-excuses accountability for performance. He also taught me how to close a factory the right way—that is, make the tough-minded business decision to close the plant with your head but implement it with your heart relative to the people and community issues. Unfortunately, these are skills I had to use far too often in my career.

**Greg Kenny**—President and chief executive officer of General Cable Corporation, who actively demonstrated his complete support for my manufacturing excellence initiative during a time when I was a lone voice in the wilderness. He gave me full latitude in causing a manufacturing revolution in the company, knowing that it would be actively resisted early on by significant numbers of long-time plant managers and staffs who did not want to change. He made it clear



that this would not become a “flavor of the month” and that folks in the field and the office could get onboard or else were welcome to work somewhere else. This strong support led to having several plants soar to numerous awards for manufacturing excellence and the rest of the plants to greatly improve by taking better care of customers, shareholders, and associates. It ultimately was the root of a major culture change company-wide as the support for our initiative grew throughout the company. Greg was simply the best boss I ever had.

Finally, there are countless plant managers and staff managers who have had a positive effect on my thinking over the years. Most of them now share much of my same thinking around manufacturing excellence, and all have been successful in their chosen fields. Some have stayed in wire and cable. Others have stayed in manufacturing in different industries. Still others have excelled in completely new fields such as education, private enterprise, and service businesses. This is where the biggest risk is that I’ll forget important contributors, but here’s my best attempt to recognize the especially influential and helpful people along the way:

Joe Antal, Ray Bellinger, Betty Blunk, Frank Brown, Joe Consolino, Bill Darby, Dick Frist, Ray Funke, Bill Garibay, Ray Helton, Doug Hitchon, Dan Jessop, Mike Kelley, Dick Kirschner, Cindy LaBoiteaux, Jack Lawless, Lisa Lawson, Kathy Lucid, Dan Marascalchi, Joyce McDonald, Ron McNew, Steve Messenger, Mike Monti, Lee Moorman, Mike Murphy, Harry Nelson, Jim Norrick, Peter Olmsted, Jim Page, Jim Porter, Ernie Reynolds, Luis Rosete, Harry Ryan, Mike Sgro, Tedd Simmons, Bob “Cousin” Speed, Glen Starbuck, Tim Tanner, Mark Thackeray, Bob Vokurka, Lou Weber, Rick Wells, Bill Wilson, Buck Wright, Bill Yankovich, Art Yaroach, German Zavala, Jerry Zurovchak.

Again, I apologize to those I may have forgotten at the time of this writing, but thank you so much to all those who have tolerated my persistence, tenacity, passion, unreasonable expectations at times, and all my other frailties. We’ve all learned a lot together and accomplished important results for all those customers, shareholders, and associates who have depended on our leadership and performance to keep the big wheels turning.

This book is written on behalf of all of the aforementioned people as well as the thousands of hourly associates and hundreds of salaried staff over

the years who bought into the vision, used the toolset, and have or are now executing their quest for manufacturing excellence.

Finally, I'd like to provide special recognition and thanks to Greg Kenny, Mark Thackeray, Bob Siverd, Lisa Lawson, and the incredible team at General Cable Corporation. They have provided generous support of this endeavor from the very beginning. They have also allowed me to use pictures, audits, and other forms developed during my time with them. This will make the book especially useful to the hands-on practitioners of these processes. Without General Cable's help this book would not have been possible in its current form.

**Larry E. Fast**

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# Introduction

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This, my first book, is intended to share my learning from a 35-year career in manufacturing leadership positions. My hope is that the experience and the thinking behind these words will help others who share my passion for excellence and that their learning curves will be accelerated. If just one reader is inspired to step up and lead the manufacturing revolution in his company then this labor of love will have been worth it. If this book causes one experienced leader to gel his thinking around a manufacturing excellence strategy and to pursue it with passion, confidence, and urgency then I will be very gratified.

Here are a few points I'd like to make up front for clarification:

- For the convenience of both the reader and the writer, the male pronoun will always be used to avoid the clumsiness of the “he/she” and “his/her” kind of thing. Please know that I have promoted and worked with some excellent female plant managers throughout my career.
- The words *associates* and *employees* are used interchangeably throughout the book, as are the terms *purchasing* and *sourcing*.
- Since pictures used in the text of this book are shown in black and white, you are invited to refer to the CD inside the back cover of the book. Therein are copies of the pictures in color so that you can see the power of the visual management being used in these examples.
- You'll also find on the CD three complete Excel files: a sample Manufacturing Excellence Audit, a sample Communications Plan, and a sample Training Plan. I encourage you to customize these for your own use.

Best wishes for your success in achieving and sustaining manufacturing excellence.

Larry E. Fast

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## The Author

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Larry E. Fast is a veteran of 35 years in the wire and cable industry and held senior management roles for the last 27 of those years. At Belden, where he spent his first 25 years, he was one of the youngest plant managers to ever take the helm at their flagship plant in Richmond, Indiana. At that time the plant employed over 1,200 people in a building of nearly 800,000 square feet. In 1982 he became the senior manufacturing leader of the Electronic Division, a position that he held for 12 years. During that time he conceived and implemented a strategy for manufacturing excellence that substantially improved manufacturing quality, service, and cost. He is regarded by some as “the father of manufacturing cells” in bulk cable operations in the industry. Prior to 1987, the only known application of cell technology had been in assembly operations such as cord sets and harnesses. He later started up a new cord set division for Belden and served as the general manager for 4 years. This experience helped to round him into a stronger manufacturing leader, where his passion for excellence continued with a strong customer bias.

In 1997, he joined General Cable Corporation to lead North American operations as a member of the corporate leadership team. At that time General Cable was known more as a “marketing company” that was frequently handicapped by a grossly underperforming group of manufacturing plants. After 2 years learning his new company’s culture, people, product groups, and systems, he was named senior vice president of operations. After a 1999 acquisition 28 plants as well as corporate sourcing, quality, manufacturing systems, and advanced manufacturing engineering reported to him. Later, as plants were consolidated to less than 20, he was given expanded responsibility for the North American supply chain. This included the addition of supply chain planning and logistics and three regional distribution centers in addition to the 18 manufacturing facilities in the United States, Canada, and Mexico. These plants produce a diverse range of energy, communications, industrial, and specialty wire and cable products.

His vision solidified with a strategy for manufacturing excellence that was embraced by General Cable’s leadership team and board of directors in 1999. By 2001 the first General Cable plant (Malvern, Arkansas) won Top 25

recognition as an *Industry Week* magazine's finalist for Best Plants in North America. By 2009, General Cable manufacturing plants had been recognized for 21 awards honoring nine plants, six of which were named winners of the 10 Best Plants in North America. Fast's plants were the first to achieve three Top 25 awards in consecutive years and only the second company to have twice had three Top 25 winners the same year in the 20-year history of the award. As evidence of the sustainability of the process, in 2009 there were three General Cable plants in the Top 20 for the third time. Also, the very first winner, in Altoona, Pennsylvania, in 2003, came back in their first year of eligibility to compete and win for a second time. The six Best Plant winners represent the successful execution of the strategy in various cultures, union and nonunion plants, and all three countries. The winners are as follows: Altoona, Pennsylvania, in 2003; Moose Jaw, Saskatchewan, Canada, in 2005; Tetla, Tlaxcala, Mexico, in 2006; and Indianapolis, Indiana, in 2007. Manchester, New Hampshire, joined this distinguished list in 2008. Altoona, Pennsylvania, won for the second time in 2009, and Piedras Negras, Mexico, joined the list of winners after having been a finalist in two prior attempts. The 2010 Best Plants competition resulted in two plants being named to the Top 20 finalists list. They are Franklin, Massachusetts, for the second time and Lawrenceburg, Kentucky, for the first time. In December 2010, the Franklin, Massachusetts, plant was named the seventh General Cable plant to be named one of the 10 Best Plants in North America—more evidence of the sustainability of the strategy and the execution of it by the current team at General Cable Corporation.

Fast holds a bachelor of science in management and administration from Indiana University and is a graduate from Earlham College's Institute for Executive Growth. He also completed the 13-week Program for Management Development at the Harvard University School of Business in 1986.

Fast is a long-time member of the Association for Manufacturing Excellence (AME) and the Wire Association and is a former member of the American Production and Inventory Control Society and the American Society for Quality. He also has served as a Section Chair for the National Electrical Manufacturer's Association (NEMA). He has served on university advisory boards including Indiana University/Purdue at the I.U. East campus in Richmond, Indiana, and the School of Applied Sciences at Miami University in Oxford, Ohio. From 2001 to 2007, he served on the industry advisory board for the Tauber Manufacturing Institute at the University of Michigan in Ann Arbor. In 2009 he joined the board



of directors of the southeast region of AME. Since his retirement he has also joined the team of judges for *Industry Week* magazine's Best Plants in North America competition.

Fast has spoken at various manufacturing excellence events such as *Industry Week's* Best Plant's Conference, Manufacturer "Live," AME Champions meeting, and the international conference on Lean manufacturing sponsored by Reliability World. He has also been published in *National Productivity Review* magazine for the turnaround story at Belden Wire & Cable and was featured in two October 2006 articles in *The Manufacturer* and in *Mexico Watch* for the outstanding track record leading change at General Cable Corporation. Fast is now founder and president of Pathways to Manufacturing Excellence, LLC, a consulting company based in Gainesville, Georgia.

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