CERTIFIED WELDING SUPERVISOR MANUAL for QUALITY and PRODUCTIVITY IMPROVEMENT

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Dedication

Several years ago on the Gulf Coast, a group of dedicated men in the shipbuilding industry were concerned about the lack of well-trained welding supervisors. If welding supervisors did not have the appropriate knowledge and skill levels, how then could the welders being supervised achieve improved quality and productivity levels? To this end, those dedicated men became the catalyst that advanced the Certified Welding Supervisor Program to where it is today. Most likely, this manual would not have become a reality when it did without their support, their initial efforts as a Beta Test Site, and their feedback during program development. For that reason, this manual is dedicated to Ron Pierce of Welding Engineering Services Company and Tom Bender, Jackie Morris, and Lavon Mills of Bender Shipbuilding & Repair Company.

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Preface

In 2000, the American Welding Society (AWS) initiated the establishment of a Certification Program for Welding Supervisors. First, an AWS committee drafted the B5.9:2000, *Specification for the Qualification of Welding Supervisors*, which was followed by the AWS QC-13, *AWS Standard for the Certification of Welding Supervisors*. This groundwork was done by AWS, which recognized that the position of welding supervisor was one of the most under-trained positions in all of manufacturing, construction, and fabrication—particularly in the area of optimizing the quality and productivity of personnel under the supervisor's direction. AWS saw an industry need and responded.

Welding supervisors are found in every industry that uses welding as a core process in the manufacture, construction, or fabrication of their products. The role they play is often one of organizing production paperwork and ensuring that parts are available to the welders. In many cases, welding supervisors have little or no welding experience, knowledge of welding science, or training in how to support their welders. This situation has resulted in years of missed opportunities in many companies to improve welding quality while also increasing productivity.

Significant improvements can be made through the efforts of a well-trained welding supervisor, who knows what factors influence welding quality, and how monitoring welders can achieve that quality. At the same time, through training, a welding supervisor can understand all of the complimentary factors in welding operations that lead to maximized productivity.

This manual takes a comprehensive approach to present the welding supervisor, planner, engineer, or other management personnel with the most useful technical welding information combined with the most effective management principles, concepts, and techniques to apply this welding knowledge.

Sample questions are included in each section of this manual to help students gauge their understanding and confidence level. When this program is completed, the welding supervisor will have the working knowledge to direct, support, and instruct welders to improve both quality for the customer and productivity for the company.

This manual has been developed by AWS to support welding supervisors in one of the most challenging and rewarding careers in industry. Those candidates who successfully complete this program will be prepared to take the AWS Certification Test. More importantly, they will be better prepared to make one of the most important contributions that any employee can offer—helping their company to be more competitive in the global marketplace by improving manufacturing performance. This is a challenge that all companies now face.

Acknowledgments for Course Materials

The material for this Certified Welding Supervisor's Manual for Productivity and Quality Improvement was developed for AWS by Barckhoff Welding Management Corporation, a thirty-year-old welding management consulting firm.

The authors of this manual include:

Jack R, Barckhoff, P.E. is the founder and CEO of Barckhoff Welding Management and a member of the 2004 Class of Counselors of the American Welding Society. Jack is a management consultant whose career spans over half a century. He has devoted his life's work to helping companies apply his philosophy of Total Welding Management© to become more competitive and profitable through effective management of their entire welding operations. Jack is an industry recognized expert on welding management. He is the author of *Total Welding Management*, which was published by AWS in 2005, has published many articles, and lectured to thousands over his long career on the management of welding. He is a member of the Board of Trustees for the AWS Foundation, established the "Jack R Barckhoff Welding Management Scholarship," which is awarded to college students pursing a career in Welding Engineering, has received the AWS District Meritorious Award; served as AWS Section Chair, and is a lifetime member of AWS. Jack studied Mechanical Engineering and Business Administration at The Ohio State University.

Don L. Lynn, P.E. has over thirty years of diversified experience in all aspects of welding. His technical welding experience spans shipbuilding, nuclear, sheet metal, pressure vessel, piping, and power generation in a variety of roles from engineering design and supervision to quality assurance. He holds a B.S. Degree in Welding Engineering from The Ohio State University as well as a Masters Degree in Business Administration from Northern Kentucky University. Don is an AWS Certified Welding Engineer and a Certified Welding Inspector, and also holds a diploma in International Welding Engineering. He is an active member of AWS, serving on several committees, and is also a member of the Society of Manufacturing Engineers and the American Society of Metals. He has written technical welding articles, has contributed to the AWS Welding Handbook Chapter Committees, and has served as a technical welding expert in litigation regarding welding issues. For the past 14 years Don has worked as a consultant and project manager for Barckhoff Welding Management.

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