

PPG#22 PRODUCTIVITY, 1ST EDITION

Table of Contents

Introduction

Chapter 01: General Productivity Management

- 1. Documenting the Schedule Basis, Edward E. Douglas III, CCC, PSP, AACE Transactions, 2005
- 2. A Conceptual Aspect of Project Management: Point of No Return, Dr. Yash P. Gupta, AACE Transactions, 1981
- 3. A Definition Of Productivity, Marie L. Boyle, Cost Engineering Journal, 1973
- 4. A Productivity Challenge in a Utility's Reliability Construction Program, H. Leon Ellis; Dr. Saied Gouda, PE; Scott Trowbridge, PE, **AACE Transactions**, 1993
- 5. A Program to Improve Productivity of Field Directed Construction Operations, Michael H. Casten, **AACE Transactions**, 1981
- 6. *An Industry Ripe With Paradox Emerges As A Productivity Paradigm,* Xerox Engineering Systems, **Cost Engineering Journal,** 1994
- 7. Can the Mystery of Productivity be Solved?, Ralph P. O'Neal, Jr., CCE, AACE Transactions, 1990
- 8. Construction Performance Benchmarking Measurement, Hans E. Picard, **AACE Transactions**, 2002
- 9. Construction Productivity, James D. Whiteside, II PE, AACE Transactions, 2006
- 10. Construction Productivity and Progress Control, Robert E. Sheffield, CCE, **AACE Transactions**, 1978
- 11. Construction Productivity as a Competitive Edge, Dr. Hans E. Picard, AACE Transactions, 1998
- 12. Construction Productivity Management, R Cardell, Cost Engineering Journal, 1986
- 13. *Construction Productivity: A Survey of Industry Practices,* George F. Jergeas; Mohammad S. Chishty; Marko J. Leitner, **AACE Transactions**, 2000
- 14. *Construction Productivity: An Auditing and Measuring Tool,* George F. Jergeas; Robert McTague, **AACE Transactions,** 2002
- 15. Construction Productivity: Continuous Improvement Is Normal, Dr. Richard E. Larew, PE CCE, AACE Transactions, 1996
- 16. *Productivity... Everybody's Business and It Can Be Controlled!,* Albert B. Lorenzoni, PE CCE, **Cost Engineering Journal,** 1979
- 17. Productivity Defined, Jean-Claude Huot, AACE Transactions, 1981
- 18. Revisiting Lost Productivity: A Primer and Update for the Industry, John J. Ciccarelli, PE CCE PSP; Michael J. Bennink, PE CCE PSP, **AACE Transactions**, 2010
- 19. Understanding the Word "Productivity": What It Means And What Is Behind It, Marjatta Strandell, **AACE Transactions**, 1982
- 20. Increasing Onsite Production, Andrew G. Smith, CCE, AACE Transactions, 1987
- 21. Productivity And Management: The Challenge For Survival, Delmar R. Rediger, Cost Engineering Journal, 1986
- 22. *Productivity--An Updated Concept of Management,* H. Murray Hohns, **AACE Transactions,** 1979
- 23. *Project Performance in a Changing Environment,* Murtala A. Oladapo, **AACE Transactions,** 2000
- 24. *Productivity Issues,* Melanie L. Longmore; Doug Major; Jose L. Maldonado, **AACE Transactions,** 2002
- 25. Productivity Management, Dr. James M. Neil, CCE, AACE Transactions, 1987
- 26. The Megaproject And Productivity, MA Muspratt, Cost Engineering Journal, 1984



- Construction Labor Productivity Changes in Bell Canada, Christopher Beckman, AACE Transactions, 1979
- 28. *Construction Production Factors in International Areas,* Dr. Enno Koehn; Chih-Shing Pan; Jen-Yuan Liu; Rana P. Pingili; Sirichai Tanratanawong, **AACE Transactions,** 1995
- 29. Construction Productivity in Developing Global Regions, Enno Koehn, PE; Sanjay A. Jagushte, **AACE Transactions**, 2005
- 30. International Labor Productivity, JK Yates; S Guhathakurta, Cost Engineering Journal, 1993
- 31. *Labor Productivity in Third World Environments,* Dr. James E. Rowings, Jr.CCE; Hashiem, **AACE Transactions,** 1986
- 32. Labor Productivity for Overseas Construction Projects, E. John Mark, Cost Engineering Journal, 1975
- 33. Incremento En La Productividad De Los Recursos Humanos Para Abatir Los Costos De Construccion (SPANISH), Jorge Boysselle De La Mora, **AACE Transactions**, 1973
- 34. Productivity in the U.K. Construction Industry, Les Ruddock, AACE Transactions, 1991
- 35. Variation in Construction Productivity: Developing Countries, Enno "Ed" Koehn; Sheikh Arif Ahmed; Satyanarayana Jayanti, AACE Transactions, 2000
- 36. A Performance-Based Procurement System Used by the State of Wyoming, Dean T. Kashiwagi, PE; Ziad Al-Sharmani, Cost Engineering Journal, 1997
- 37. Construction Labor Productivity During Nuclear Power Plant Construction, William B. Murray, **AACE Transactions,** 1980

Chapter 02: Estimating and Planning Productivity

- A Review of Methods to Estimate Haul Fleet Production, Douglas D. Gransberg, Cost Engineering Journal, 1998
- Conceptual Estimating Productivity Improvements at Kodak, Joseph A. Lukas, AACE Transactions, 1991
- 3. D-PIPE: A Worker Hour Rates Data Warehouse for Estimating Industrial Pipe Construction, Mohamed Al-Hussein; Aubrey Vanderstar; Rajesh Kandanala, Cost Engineering Journal, 2005
- 4. Estimating and Improving Excavation Performance, Dr. Peter J. Tarkoy, AACE Transactions, 1990
- 5. Estimating Labor Productivity, Joseph A. Brown, CCE, AACE Transactions, 1986
- 6. Estimating Labor Productivity and Its Effect on Construction Costs, Louis Dallavia, AACE Transactions, 1960
- 7. Estimating Manning Levels for Process Plants, W. A. Alkhayat; Dr. A. M. Gerrard, AACE Transactions, 1984
- 8. Forward Pricing Impact on Construction Projects, Brian E. Kasen; Victor C. Oblas, PE, AACE Transactions, 1996
- 9. Productivity Aspects of Capital Cost Estimating, John W. Hackney, AACE Transactions, 1974
- 10. *Up-Front Cost Estimating of Change Orders,* Osama Moselhi; Ihab Assem; Khaled El-Rayes, **AACE Transactions,** 2002
- 11. Utilizing Productivity Adjustment Formulas in Cost Estimating Spreadsheets, Rick Hentschel, AACE Document, 2000
- 12. What is the U.S. Gulf Coast Baseline when Estimating Site Productivity?, Bruce E. Bradley, AACE Transactions, 2008
- 13. Construction Cost Escalation And Labor Productivity What Can We Do About It, Joseph Andrew Brown, **AACE Transactions**, 1971
- 14. *Cost Impact of Constructability Analysis in Mega Projects,* Farshid Gholami; Janaka Y. Ruwanpura; Mahsa Taghi Zadeh, **AACE Transactions**, 2010
- 15. *Crew Synchronization in Construction,* Anamaria I. Popescu; George E. Gibson, Jr., PE; John D. Borcherding, PE, **AACE Transactions**, 1995



- 16. Productivity Study for Hazardous and Toxic Waste Remediation Projects, Andrew G. Reape, CCE, Cost Engineering Journal, 1996
- 17. Significant Elements of Construction Productivity, Dr. Carleton Coulter III; Victor F. Spruill, AACE Transactions, 1983
- 18. TVA's Project-Baselining and Improvement Process, Thomas E. Simpson, CCC; C. Robert Seay Jr, AACE Transactions, 1996
- 19. *Construction Industry Factors Impairing Productivity,* P. Fazio; Don Chutter; G. Bourassa; Dr. Alan D. Russell, **AACE Transactions,** 1984
- 20. Cost Indexes Without Productivity Mean Little, Wilbur L. Nelson, AACE Transactions, 1968
- 21. Rational Basis for Application of Productivity Factors in a DOE/EPCC Construction Cost Estimate, Chris Thomson, PE CCE, Cost Engineering Journal, 2009
- 22. The Use of the Learning Curve, Jack H. Chellew, AACE Transactions, 1974
- 23. Unit Pricing as Index of Productivity, Jorge A. Rebata, PE, AACE Transactions, 1979
- 24. DACE Labor Productivity Norms -- The New "Gulf Coast"?, Martin S. J. van Vliet, AACE Transactions, 2011
- 25. Learning Curves and Work Interruptions in Construction, Vassilios Frantzolas, AACE
 Transactions, 1984
- 26. Learning Curves: Theory And Practice, B. R. Elder, AACE Transactions, 1963
- 27. *Labor Resource Planning for Construction Projects,* Anubhav Bhargava; Balkiz Oztemir; Allan D. Chasey, **AACE Transactions**, 2002
- 28. Resource Loading in a Multiproject Environment, Jim W. Short, CCC, **AACE Transactions**, 1997
- 29. The Productivity Baseline, Ronald Gulezian; Frederick Z. Samelian, AACE Transactions, 2003
- 30. *Production Planning With Nonlinear Cost Considerations*, W Conley, **Cost Engineering Journal**, 1986
- 31. *Cost Estimating of Overseas Construction Projects,* John G. McConville, CCC, **AACE Transactions,** 1994
- 32. *Production Rates for International Projects in Asia*, Dr. Enno (Ed) Koehn, PE; Moin U. Ahmed, **Cost Engineering Journal**, 1999
- 33. Production Rates for Urban/Rural Projects in Developing Areas, Enno Koehn; Faisal Ahmed, AACE Transactions, 2001
- 34. Cost Comparison of Pacific Rim Countries, John G. McConville, CCC, AACE Transactions, 1997
- 35. *Productivity of Construction in Developing Areas: India,* Enno Koehn, PE; V. R. Ganapathiraju, **AACE Transactions,** 1996

Chapter 03: Productivity Measurement and Analyses

- 1. An Estimate-Independent Productivity Measurement System, A. Larry Aaron; Dr. H. Randolph Thomas, **AACE Transactions**, 1990
- 2. Direct Labor Productivity Measurement As Applied in Construction and Major Maintenance Projects, AACE International, **Recommended Practices**, 2004
- 3. A Methodology for Measuring Construction Productivity, Foster M. Burton, AACE Transactions, 1991
- 4. *A More Effective Program to Monitor Productivity,* Fred S. Griggs, Jr., **AACE Transactions,** 1980
- 5. A Proposal for the Evaluation and Measurement of Engineering Performance and Efficiency, Glen W. Moorehouse, **Cost Engineering Journal**, 1971
- 6. An Automated Piping Isometric Pricing and Progress Measuring System, Britton L. Wolf; Marian Walsh, Cost Engineering Journal, 1998
- 7. An Improved Technique of Productivity Measurements, Steven G. Revay, CCC, **AACE Transactions**, 1984



- 8. Assessing Methodologies for Quantifying Lost Productivity, Mark C. Sanders, PE; Mark F. Nagata, **AACE Transactions**, 2003
- 9. Department of Energy/Savannah River Site Productivity Measurement and Continuous Improvement, Richard A. Selg, CCE; Donald C. Thomas, PE, **AACE Transactions**, 2004
- 10. Design Manpower Request Analysis and Performance Measurement, Shawn L. Kildare; George P. Blank, **AACE Transactions**, 2003
- 11. Developments in Firm-Level Productivity Measurement, Jerry L. Hamlin, CCE, AACE Transactions, 1978
- 12. Field Progress Measurement System Direct Hire Job, SD Toth, Cost Engineering Journal, 1983
- 13. Measurement of Engineering Productivity: An Approach, Sharad Dikshit, **AACE Transactions**, 1973
- 14. Measurement of Physical Accomplishments: An Approach, D. Sharad, AACE Transactions, 1974
- 15. Measuring Capital Productivity, Jerry L. Hamlin, CCE, AACE Transactions, 1981
- 16. *Measuring Construction Labor Productivity by Daily Visits,* Dr. Iqbal Noor, PE CCE, **AACE Transactions,** 1998
- 17. Measuring Construction Productivity, LM Chang, Cost Engineering Journal, 1991
- 18. *Measuring Labor Requirements For Different Types of Construction,* Jerome A. Mark; Martin Ziegler, **Cost Engineering Journal,** 1973
- 19. *Methods for Construction Productivity Measurement,* Jeffrey S. Russell; Dr. Luh-Maan Chang, **AACE Transactions,** 1987
- 20. Problems In Measuring Production Efficiency, Lionel J. Emond, Cost Engineering Journal, 1971
- 21. Productivity: Measurement and Management, Vic Alby, PE, CCE, AACE Transactions, 1994
- 22. The Productivity Measurement of Construction Labor Using Work Sampling, Ira B. Gregerman, **AACE Transactions**, 1981
- 23. Tracking and Control of Earthmoving Operations Using Spatial Technologies, Adel Alshibani, Cost Engineering Journal, 2008
- 24. *TVA's Continuous Outage Productivity Measurement/Improvement,* Dr. Hans E. Picard; C. Robert Seay Jr., **AACE Transactions,** 1996
- 25. Work Sampling And Unit Man-hours, Enno Koehn, Cost Engineering Journal, 1983
- 26. Worker Productivity: Characteristics and Measurement, Ira B. Gregerman, AACE Transactions, 1981
- 27. Activity Survey Impact on Construction Productivity, Stephen G. Goranson, AACE Transactions, 1988
- 28. *Craftsman Questionnaire Sampling for Construction Productivity*, Luh-Maan Chang; Dr. John Borcherding, **AACE Transactions**, 1984
- 29. Criteria And Techniques For Meaningful Work Sampling Productivity Studies, James B. Scarfuto, Cost Engineering Journal, 1985
- 30. Productivity Committee Meeting and Productivity Guess It or Measure It, Ralph P. O'Neal, Jr. CCE, **AACE Transactions**, 1989
- 31. Productivity Improvement Through Work Sampling, James L. Jenkins; Daryl L. Orth, Cost Engineering Journal, 2004
- 32. A Case Study: Schedule Forecast Verification With Productivity Assessment, Win G. Li, CCE PSP, Cost Engineering Journal, 2005
- 33. *A Method to Calculate the Productivity Factor,* Juan Fornino Gaeta; Robert R. Ruiz Gomez, **AACE Transactions,** 1993
- 34. A Model for Analyzing Jobsite Productivity, David D. Chitester, PE, AACE Transactions, 1992
- 35. A Repricing Model For Production Rate Or Quantity Revisions, Victor Zaloom, PE, Cost Engineering Journal, 1985
- 36. Analysis of Working Space Congestion from Scheduling Data, Dr. Paviz F. Rad, CCE, AACE Transactions, 1980



- 37. Analytical Techniques to Improve Construction Productivity, LM Chang, **AACE Transactions**, 1988
- 38. Analyzing Construction Productivity, Joseph J. Orczyk, PE, AACE Document, 1999
- 39. Are Any Construction Overtime "Studies" Reliable?, Richard E. Larew, Cost Engineering Journal, 1998
- 40. Assessing Performance Trends on Industrial Construction Mega Projects, Aminah Robinson Fayek; Stephen O. Revay, CCC; Doug Rowan; Donald Mousseau, Cost Engineering Journal, 2006
- 41. Benchmarking Productivity for Electrical Projects, Min-Jae Lee; Awad S. Hanna; Jeffrey S. Russell, **AACE Transactions**, 2002
- 42. Construction Production Forecasting: A Modeling Approach, William Neff Patten, Cost Engineering Journal, 1987
- 43. Economic Analysis and Productivity of Hazardous Waste Landfill Automation, Dr. Amarjit Singh, PE, **AACE Transactions**, 1993
- 44. *Estimating Cost Growth From Schedule Changes: A Regression,* John V. Bielecki; Edward D. White, **Cost Engineering Journal**, 2005
- 45. Labor Productivity and Manpower Forecasting, Forrest D. Clark, CCE, **AACE Transactions**, 1985
- 46. Large Project Dynamics, Jean-Claude Huot; Kenneth G. Cooper, AACE Transactions, 1982
- 47. *Monitoring Productivity with Earned Value Analysis A New Approach,* Aldo D. Mattos; Ricardo Delarue, **AACE Transactions,** 2010
- 48. Monitoring the Adequacy of the Amount and Productivity of Engineering and Construction Manpower, Dwight A. Zink, CCE, **AACE Transactions**, 1980
- 49. *Multiple Improvement Curve Effects Upon Productivity,* Dr. Robert C. Creese; B. P. Madhu Sudhan, **AACE Transactions**, 1991
- 50. Optimization of Production in Earthmoving Works, Jose P. Bendicho, **AACE Transactions**, 1992
- 51. Performance Management: Making It Work, Gary Cokins, AACE Transactions, 2006
- 52. *Performance Measures By Means of Activity Sampling,* Kurt G. R. Heinze, PE CCE, **AACE Transactions,** 1984
- 53. *Power Plant Outage Project Productivity Improvement,* Hans E. Picard; Harley R. Macklin, PE, **AACE Transactions,** 1993
- 54. Predicting Productivity, James M. Neil, CCE; Lee E. Knack, AACE Transactions, 1984
- 55. *Project Productivity Analysis: What Is 1.0?,* Charles P. Woodward, PE CCE, **AACE Transactions, 2003**
- 56. The Cumulative Effect of Change, Bob M. McCally, AACE Transactions, 2006
- 57. Continuous Improvement of Project Productivity, HR Macklin; HE Picard, Cost Engineering Journal, 1992
- 58. Demonstrated Labor Efficiency: An Effective Labor Cost Control and Analytical Tool, Bob M. McCally, **AACE Transactions**, 1998
- 59. Determining Labor Productivity: A Case Study, TG Mendel, Cost Engineering Journal, 1991
- 60. Engineering Performance in the US Industrial Construction Sector, Maged E. Georgy; Luh-Maan Chang; Lei Zhang, Cost Engineering Journal, 2005
- 61. Improving Capital Productivity, Jerry L. Hamlin, PE, CCE, AACE Transactions, 1979
- 62. *Mechanical and General Construction Productivity Results,* Daryl L. Orth; James L. Jenkins, **AACE Transactions,** 2003
- 63. *Mechanical and General Construction Productivity Results,* James L. Jenkins; Daryl L. Orth, **Cost Engineering Journal**, 2004
- 64. Productivity Analysis A Case Study, Charles J. Peles, AACE Transactions, 1977
- 65. Productivity Control on Large Power Projects, Jude P. Laspa, AACE Transactions, 1980
- 66. Productivity in Power Plant Construction, Marjatta Strandell, AACE Transactions, 1976
- 67. *Promoting Power Plant Construction Project Productivity,* Johannes E. Picard; John Hutcheson, **AACE Transactions,** 2008



- The Productivity of U.S. Manufacturing, Paul C. Nystrom; Richard H. Franke, AACE Transactions, 1977
- 69. A Systems Approach to Project Management Measurements of Productivity and Cost Control, Howard M. Sanderson, **AACE Transactions**, 1976
- 70. Labor Productivity Modeling With Neural Networks, Dr. James E. Rowings Jr., PE CCE; Rifat Sonmez, **AACE Transactions**, 1996
- 71. *Modeling Labor Productivity in Steel Fabrication,* Lingguang Song; Simaan M. AbouRizk, P.Eng., **AACE Transactions**, 2006
- 72. Practical EVMS for an EPC Project, Tetsuya Yonezawa, CCE, AACE Transactions, 2005
- 73. System Dynamic Modeling of Delay and Disruption Claims, William Ibbs; Min Liu, Cost Engineering Journal, 2005
- 74. *Understanding Change of Scope Effects on DBB Projects Using Systems Thinking,* Stephen P. Warhoe, PE CCE CFCC; Paul D. Giammalvo, CCE, **AACE Transactions,** 2011

Chapter 04: Productivity in Manufacturing and Industrial Settings

- Increased Productivity Through Inventory & Production Control, Michael J. Beringer, AACE Transactions, 1986
- 2. Industrial Construction Efficiency and Productivity, Hans E. Picard, AACE Transactions, 2000
- 3. Industrial Productivity In The United States, O. T. Zimmerman, AACE Transactions, 1966

Chapter 05: Acceleration and Other Influences on Productivity

- 1. Cause and Effect: How Schedule Acceleration Affects Productivity, Matthew Christopher Baker, CCT, Cost Engineering Journal, 2012
- 2. Constructive Acceleration -- A Global Tour, James G. Zack, Jr., FRICS CFCC, AACE Transactions, 2011
- 3. Constructive Acceleration: Waking the Sleeping Giant, Thomas F. Peters, PE, Cost Engineering Journal, 2005
- 4. Impact of Overtime on Construction, Irwin Bromberg, PE, AACE Transactions, 1988
- 5. *Impact of Overtime on Construction Labor Planning,* Awad S. Hanna, PE; Kenneth T. Sullivan, **Cost Engineering Journal**, 2004
- 6. Overtime In Construction, Weldon McGlaun, Cost Engineering Journal, 1973
- 7. Schedule Acceleration What, Why and How?, Sunu Mohan, PSP EVP, AACE Transactions, 2008
- 8. Schedule Compression for Construction Projects by Interruption in LOB Scheduling, S. Mohammad Amini; Gholamreza Heravi, **AACE Transactions**, 2009
- 9. Scheduled Overtime and Loss of Productivity: Fact or Fiction? A Business Roundtable Report, Robert Seals, PSP; Josette Rodriguez, Cost Engineering Journal, 2006
- 10. The Basics of Constructive Acceleration, James G. Zack Jr., CFCC, Cost Engineering Journal, 2012
- 11. Extended Overtime and Construction Productivity, John Smith, AACE Transactions, 1975
- 12. *Construction Productivity: Major Causes of Impact,* Charles A. Leonard; Dr. Paul Fazio; Dr. Osama Moselhi, **AACE Transactions,** 1988
- 13. Construction Site Utilization: Impact of Material Movement and Storage on Productivity and Cost, Frederick B. Muehlhausen, **AACE Transactions**, 1991
- 14. *Design Phase Influences on Construction Change Order Costs,* John A. Kuprenas, PE, **AACE Transactions,** 2007
- 15. Factors Affecting Productivity, Leon Morrison, AACE Transactions, 1975
- 16. Factors Which Influence Productivity on Large Projects, Dr. John D. Borcherding, **AACE Transactions**, 1978



- 17. Field Conditions Impacting Construction Budgets, John Dinatale, CCE, AACE Transactions, 1987
- Field Factors Affecting Masonry Productivity, Nuntapong Ovararin; Calin M. Popescu, AACE Transactions, 2001
- 19. Human Skills Keys to Effectiveness, Stephen M. Roberts, Cost Engineering Journal, 1992
- 20. Impact: The Real Effect Of Change Orders, Carroll J. Collins, AACE Transactions, 1970
- 21. Impacts And Construction Inefficiency, Dwight A. Zink, Cost Engineering Journal, 1990
- 22. *Impacts of Modifications to the Change Order Process,* G. Steve Gardner, PE; Roy W. Block, **AACE Transactions,** 2004
- 23. Impacts of Project Change Management on Project Cost and Schedule Performances, Yi Zou; Sang-Hoon Lee, **AACE Transactions**, 2006
- 24. *Improving Construction Productivity: The Case for Motivation,* G. Douglas Jenkins, Jr.; Alexander Laufer, **AACE Transactions,** 1982
- 25. Improving Productivity With Short-Interval Scheduling, Walter J. Strutt, **AACE Transactions**, 2001
- 26. Improving Your "Scheduling CAD" Productivity, Philip Perzanowski, CCE, AACE Transactions,
- 27. Influence of Quality on Construction Costs, John A. Kuprenas, PE, AACE Transactions, 2008
- 28. Labor Productivity Factors for Hazardous Waste Sites, Donald J. Cass, CCE, AACE Transactions, 1989
- 29. Labor Productivity Impact of Varying Crew Levels, Donald J. Cass, CCE, **AACE Transactions**, 1992
- 30. *Major Factors Influencing Craft Productivity in Nuclear Power Plant Construction,* John D. Borcherding; Scott J. Sebastian, **AACE Transactions,** 1980
- 31. Management Development Leads to Increased Productivity, Karl W. Haavind, AACE Transactions, 1984
- 32. *Materials Management; Key to Schedule and Productivity,* David M. Harper, **AACE Transactions,** 1982
- 33. *Motivation and Productivity in the Engineering Environment,* Gary L. Leach, **AACE Transactions,** 1981
- 34. *Motivation and Productivity of Craftsmen and Foremen on Large Projects,* John D. Borcherding; Douglas F. Garner, **AACE Transactions,** 1980
- 35. *Motivational Theories and Their Application in Construction,* Hassan Ali Halepota, PE CCE, **Cost Engineering Journal,** 2005
- 36. Organizational Assessment for Construction Productivity Improvement, Kim Yea-Sang, AACE Transactions, 1993
- 37. Productivity Open vs. Closed Shop, John R. Heizelman, AACE Transactions, 1981
- 38. Productivity Improvement Through Communications: C O G, A. Larry Aaron, AACE Transactions, 1989
- 39. *Productivity in Construction With Relation to Union and Nonunion Operation,* John P. Trimmer, **AACE Transactions,** 1974
- 40. *Productivity Incentive Schemes on Engineering Construction Sites,* Don F. Parkinson, **Cost Engineering Journal**, 1979
- 41. *Project Cost Control Behavioral Considerations,* Dr. Carl Wolf, CCE; Dr. Phillip F. Ostwald, **AACE Transactions,** 1980
- 42. *Soft Skill Quantification (SSQ): Human Peformance vs. Metric,* Edward Muzio; Deborah J. Fisher, PE, **Cost Engineering Journal,** 2009
- 43. *Staffing Problems on Large Construction Projects,* Frank F. Moynihan, CCC, **AACE Transactions,** 2004
- 44. The Effect of Hot Weather on Construction Labor Productivity and Costs, Donn E. Hancher; Hesham A. Abd-Elkhalek, Cost Engineering Journal, 1998
- 45. *The Human Factor I: Attracting, Retaining, and Motivating Capable People,* Minnesh Kaliprasad, CCE, **Cost Engineering Journal,** 2006



- 46. *The Human Factor II: Creating a High Performance Culture in an Organization,* Minnesh Kaliprasad, CCE, **Cost Engineering Journal**, 2006
- 47. The Root Causes of Poor Communication, Sue Dyer, Cost Engineering Journal, 2006
- 48. *Using Pay to Motivate Construction Job Performance*, Alexander Laufer; John D. Borcherding, **AACE Transactions**, 1981
- 49. Weather Delays and Impacts, Donald F. McDonald Jr., Cost Engineering Journal, 2000
- 50. Is Your Schedule Late at the Starting Gate?, Abhi Basu, PE, AACE Transactions, 2005
- 51. Counter-Productivity: Its Causes and Cures, Richard E. Westney, AACE Transactions, 1988
- 52. Dollars And Sense Of Productivity, M. R. Goodes, Cost Engineering Journal, 1984
- 53. *Improved Productivity Through Integrating Work Instruction with Progress Control,* Stephen G. Revay, CCE, **AACE Transactions,** 1978
- 54. Increasing the Productivity of System End-Users, Paul J. Brady, AACE Transactions, 1976
- 55. Inefficiency, Zartab Z. Quraishi, PE CCE, AACE Transactions, 2003
- 56. Labor Productivity Impacts: A Case Study, Robert D. Kelly, AACE Transactions, 2000

Chapter 06: When Construction Productivity is Disputed

- 1. Estimating Lost Labor Productivity in Construction Claims, AACE International, Recommended Practices, 2004
- 2. Applying Multimedia Technology to Mitigate Claims, Dr. Liang Y. Liu; John R. Knoke, PE, AACE Transactions, 1995
- 3. Client's Responsibility To Contractor Relative To Labor Usage And Labor Problems, David McIntire, AACE Transactions, 1969
- 4. *Demystifying the Law of Lost Productivity Claims,* Mark A. Sgarlata; Christopher J. Brasco; Christopher M. Anzidei; Adam M. Tuckman, **AACE Transactions,** 2010
- 5. Forensic Estimating and Impact Cost Determination, Robert H. Pratt, AACE Document, 2000
- 6. Loss of Learning in Disruption Claims, David A. Norfleet, CCC, AACE Transactions, 2004
- 7. Pacing Delays -- The Practical Effect, James G. Zack Jr., Cost Engineering Journal, 2000
- 8. *Pacing: An Excuse for Concurrent Delay?*, Ronald J. Rider; Thomas E. Finnegan, **AACE Transactions**, 2005
- 9. *Practical Issues in Loss of Efficiency Claims,* Robert A. Dieterle, CCE; Thomas A. Gaines, CCC, **Cost Engineering Journal**, 2011
- 10. Productivity Claims: Beyond 'Smoke and Mirrors', John Gerard Boyle, **AACE Transactions**, 2007
- 11. Quantifying the Effect of Change Orders on Electrical Construction Labor Efficiency, Dr. Awad S. Hanna, PE; Dr. Jeffrey S. Russell, PE; David Thomack, **Cost Engineering Journal**, 1998
- 12. The Link Between Planning and Programming Practice and the Analysis of Delay and Disruption Claims, Nuhu Braimah; Issaka Ndekugri, **AACE Transactions**, 2006
- 13. The Use of Forensic Animations in Resolving Complex Disruption Claims A Case Study, Keith Pickavance, **AACE Transactions**, 2008
- 14. *Use of Productivity Factors in Construction Claims,* Robert Dieterle, CCE; Alfred DeStephanis, **AACE Transactions,** 1992
- 15. *Productivity Loss for Sewer Pipe Installation,* Ancizar Portilla, CCE PSP, **Cost Engineering Journal**, 2010
- 16. "Measured Mile" Process Project Controls to Support Equitable Recovery of Production Inefficiency Claims, Thomas W. Presnell, CCC, Cost Engineering Journal, 2003
- 17. *Measured Mile Analysis and International Mega-Projects,* Dan Crowley; John C. Livengood, **AACE Transactions,** 2002
- 18. *Measured Mile Labor Analysis,* Timothy T. Calvey, PE; William R. Zollinger III, PE, **AACE Transactions,** 2003
- 19. Statistical Evaluations of Measured Mile Productivity Claims, Michael Ross Finke, Cost Engineering Journal, 1998



- 20. The Measured Mile -- a Better Way of Using an Old Tool, Glen R. Palmer, PSP, AACE Transactions, 2008
- 21. The Measured Mile: Proving Construction Inefficiency Costs, Dwight A. Zink, Cost Engineering Journal, 1986
- 22. "Mathews Curve" A Model for Evaluating Impact, Paul R. Heather, CCE, AACE Transactions, 1989
- 23. Delay Analysis Considering Productivity, Jae-Seob Lee, AACE Transactions, 2006
- 24. *Analyzing the Cumulative Impact of Changes,* David D. Reichard; Cheryl L. Norwood, **AACE Transactions,** 2001
- 25. Dealing With Cumulative Impact Claims, Emelyn W. Martinez, MRICS CCC, AACE Transactions, 2010
- 26. *How to Prove/Disprove "Cumulative Impact" Claims,* Anamaria Popescu, PE; Jeffrey L. Ottesen, PE PSP; Glen R. Palmer, PSP, **AACE Transactions,** 2007
- 27. *Ibbs and Leonard Curves: Comparing the Impact of Cumulative Change on Labor Productivity,* William Ibbs; Gerald McEniry, CFCC PSP, **Cost Engineering Journal,** 2008
- 28. *Is the Theory of Cumulative Impact a Provable Reality?*, Stephen P. Warhoe, PE CCE CFCC, **Cost Engineering Journal**, 2007
- 29. *Labor Productivity, Disruptions, and the Ripple Effect,* Dr. H. Randolph Thomas, PE; Dr. Amr A. Oloufa, PE, **Cost Engineering Journal,** 1995

About the Editor