

Allan M. Zarembski, Ph.D., P.E., FASME

Dr. Zarembski is an internationally recognized authority in the fields of track and vehicle/track system analysis, railway component failure analysis, track strength, track safety, and maintenance planning. Dr. Zarembski is president of ZETA-TECH Associates, Inc., a technical consulting and applied technology company, which he established in 1984. Prior to that he served as Director of R&D for Pandrol Inc., Director of R&D for Speno Rail Services Co. and Manager, Track Research for the Association of American Railroads.

Dr. Zarembski has served as a consultant to all of the major railroad systems in the US and Canada, the US Federal Railroad Administration, US Department of Energy, World Bank, United Nations, and railways in Europe, Asia, Australia, Africa and South America. He has also worked extensively on rail transit systems to include heavy rail and light rail systems in North America and worldwide.

Dr. Zarembski has a PhD and M.A. in Civil Engineering from Princeton University, an M.S. in Engineering Mechanics and a B.S. in Aeronautics and Astronautics from New York University. He is a registered Professional Engineer in five states.

Dr. Zarembski is a member of AREMA, ASCE and a fellow of ASME. He has been an Adjunct Assistant Professor at Illinois Institute of Technology and an Instructor at numerous Railroad Engineering short courses throughout the US. He served as Deputy Director of the Track Train Dynamics Program and was the recipient of the American Society of Mechanical Engineer's Rail Transportation Award in 1992 and the US Federal Railroad Administration's Special Act Award in 2001.

Dr. Zarembski has authored or co-authored over 120 technical papers, over 130 technical articles, and two books; "Tracking R&D" and "The Art and Science of Rail Grinding" both published by Simmons Boardman Books.

DR. ALLAN M. ZAREMBSKI

BOOKS

1. Zarembski, A.M., Tracking R&D, Research & Development, **Simmons-Boardman Books, Inc.**, Omaha, NE, March 1993
2. Zarembski, A.M., The Art and Science of Rail Grinding, **Simmons-Boardman Books, Inc.**, Omaha, NE, August 2005

PUBLICATIONS

1. Zarembski, A. M., "Rail Rollover - The State of the Art", **Bulletin of the American Railway Engineering Association, Bulletin 664, Volume 79**, September - October 1977.
2. Zarembski, A. M., "Freight Car Environment Characterization for Fatigue Life Analysis", **Track/Train Dynamics and Design, Advanced Techniques**, Pergamon Press, N.Y., 1978.
3. Garg, V. K., Prasad, B., & Zarembski, A. M., "Structural Dynamic Analysis & Fatigue Life Prediction of a Flat Car", **977 Technical Proceedings 14th Annual Railroad Engineering Conference**, Pueblo, CO, March 1978.
4. Abbott, R. A., & Zarembski, A. M., "On the Prediction of the Fatigue Life of Rails", **Bulletin of the American Railway Engineering Association**, Bulletin 666, Volume 79, January - February 1978, p.p. 191-203.
5. Zarembski, A. M., & Abbott, R. A., "Fatigue Analysis of Rail Subject to Traffic and Temperature Loading", **Heavy Hauls Railways Conference**, Perth, Western Australia, September 1978.
6. Zarembski, A. M., "On the Nondestructive In Track Measuring the Longitudinal Force", **Conference on Nondestructive Techniques for Measuring the Longitudinal Force in Rails**, Washington, D.C., February 1979.
7. Zarembski, A. M., "Effect of Rail Section and Traffic on Rail Fatigue Life", **American Railway Engineering Association, 78th Annual Technical Conference**, Chicago, IL, March 1979.
8. McConnell, D. P., Zarembski, A. M., & Lovelace, W. S., "Track Strength Characterization Program an Overview", **American Railway Engineering Association, 78th Annual Technical Conference**, Chicago, IL, March 1979.

9. Darien, N. J., & Zarembski, A. M., "Railroad Freight Equipment Load Environment Testing", **25th International Instrumentation Symposium**, Anaheim, CA, May 1979.
10. Torkamani, M. A. M., Bhatti, M. H., & Zarembski, A. M., "Dynamic Rail Overturning: Modeling and Application", **Third ASCE/EMD Specialty Conference**, Austin, TX, September 1979.
11. Zarembski, A. M., & Rassasian, M., "Track Gage Widening A Model Study", **Transportation Engineering Journal**, American Society of Civil Engineers, November 1979.
12. Choros, J., & Zarembski, A. M., "Track Strength Vehicle Testing on High Curvature Mainline Track", **Rail International**, July 1982.
13. Abbott, R. A., & Zarembski, A. M., "Longer Rail Life is Goal", **Modern Railroads**, December 1978.
14. Torkamani, M. A. M., Bhatti, M. H., & Zarembski, A. M., "Dynamic Rail Overturning: Modeling", **Rail International**, September 1980.
15. Torkamani, M. A. M., Bhatti, M. H., & Zarembski, A. M., "Dynamic Rail Overturning: Application", **Rail International**, October 1980.
16. Zarembski, A. M., "On the Feasibility of Continuous Measurement of Track Gauge Restraint", **Rail International**, July - August 1980.
17. Zarembski, A. M., "Rail Research: Meeting the Challenge of Modern Traffic Loading", Annual Meeting of the **Transportation Research Board**, January 1980. (Transportation Research Record 744).
18. Halcomb, S., & Zarembski, A. M., "Freight Car Fatigue Analysis: Guidelines and Application", **Track Train Dynamics Conference**, Chicago, IL, November 1979.
19. Lovelace, W. S., & Zarembski, A. M., "Future Directions in Track Evaluation and Inspection", **Track Train Dynamics Conference**, Chicago, IL, November 1979.
20. Zarembski, A. M., & Choros, J., "On the Measurement and Calculation of Vertical Track Modulus", **Bulletin of the American Railway Engineering Association**, Bulletin 675, Volume 81, November - December 1979.
21. Zarembski, A. M., & Choros, J., "Laboratory Investigation of Track Gauge Widening", **Bulletin of the American Railway Engineering Association**, Bulletin 676, Volume 81, January-February 1980.
22. Zarembski, A. M., McConnell, D. P., & Lovelace, W. S., "New Car for Measurement and Evaluation of Gage-Widening Resistance of Track", **American Railway Engineering**

- Association, 79th Annual Technical Conference**, Chicago, IL, March 1980. (Bulletin 678, Volume 81, June - July 1980).
23. Kerr, A. D., & Zarembski, A. M., "The Response Equations for a Cross-tie Track", **ACTA Mechanical**, 40, 253-276, 1981.
 24. Zarembski, A. M., & Choros, J., "Field Evaluation of Mainline Quality Track Using a Track Strength Test Vehicle", **Bulletin of the American Railway Engineering Association**, Bulletin 680, Volume 82, November - December 1980.
 25. Zarembski, A. M., "The Track Modulus", **Roadmasters' and Maintenance of Way Association of America, Ninety-Third Annual Conference**, Chicago, IL, September 1981.
 26. Zarembski, A. M., "The Direct Inspection of Track", **Railway Track and Structures**, November 1980.
 27. Bhateja, R., & Zarembski, A. M., "Determination of Track Gage Widening Parameters", **International Conference on Computing in Civil Engineering**, New York, N. Y., May 1981.
 28. Zarembski, A. M., & Magee, G., "An Investigation of Railroad Maintenance Practices to Prevent Track Buckling", **American Railway Engineering Association 80th Annual Technical Conference**, Chicago, IL, March 1981.
 29. Webb, H. G., Wells, T., & Zarembski, A. M., "Track Maintenance Research Program: An Overview", **American Railway Engineering Association 80th Annual Technical Conference**, Chicago, IL, March 1981.
 30. Zarembski, A. M., "Effect of Increasing Axle Loads on Rail Fatigue Life", **Bulletin of the American Railway Engineering Association**, Bulletin 685, Volume 83, November - December 1981.
 31. Zarembski, A. M., et al, "The Effect of Increasing Axle Loads on Rail Fatigue Life", **Rail Technology: Proceedings of the Joint BR/AAR Seminar**, Frederick and Round, Nottingham, England, 1983.
 32. Armstrong, Wells, Stone, & Zarembski, "Impact of Car Loads on Rail Defect Occurrences", **Second International Heavy Haul Railway Conference**, Colorado Springs, CO, September 1982.
 33. Zarembski, A. M., "Performance Characteristics for Concrete Tie Fasteners", **Concrete Tie Systems for the 1980's**, Skokie, IL, November 1983.
 34. Manos, Scott, Choros, & Zarembski, "Development of an Improved Vehicular Loading Characterization Associated with the Gage Strength of Track", **Bulletin of the American Railway Engineering Association**, Bulletin 686, Volume 83, January - February 1982.

35. Zarembski, A. M., "Performance Characteristics for Wood Tie Fasteners", **Bulletin of the American Railway Engineering Association**, Bulletin 697, Volume 85, October 1984, p.p. 341-369.
36. Zarembski, A. M., "The Impact of Rail Surface Defects", **Railway Track and Structures**, November 1984.
37. Zarembski, A. M., "The Economics of Rail Grinding and Rail Surface Maintenance", **Third International Heavy Haul Railway Conference**, Vancouver, British Columbia, October 1986.
38. Lamson, S. T., Zarembski, A. M., & Taylor, E. H., "Profile Grinding on CP Rail", **Joint British Rail/Association of American Railroads Seminar on Vehicle Track Interaction**, Princeton, NJ, April 1984.
39. Kerr, A. D., & Zarembski, A. M., "On the New Equations for the Cross-Tie Track Response in the Lateral Plane", **Rail International**, Number 6, 1986.
40. Zarembski, A. M., "Performance Characteristics for Concrete Tie Fasteners", **Rail International**, March 1987.
41. Zarembski, A. M., "The Relationship Between Rail Grinding and Rail Lubrication", **Second International Symposium on Wheel/ Rail Lubrication**, Memphis, TN, June 1987.
42. Zarembski, A. M., Izbinsky, G., Handal, S. N., & Worthington, W. M., "Corrugation Behavior in the Freight Railroad Environment", **American Railway Engineering Association (presented at the March 1987 Annual Conference, Chicago)**, Bulletin 712, Vol. 88, October 1987.
43. Zarembski, A. M., "The Evolution and Application of Rail Profile Grinding", **Bulletin of the American Railway Engineering Association**, Bulletin 718, Volume 89, December 1988.
44. Zarembski, A. M., "Track Maintenance Planning Using Forecasting Software", **Railway Technology International**, 1988.
45. Zarembski, A. M., & Masih, J. T. A., "On the Development of Computer Model for the Economic Analysis of Alternate Tie/Fastener Configuration", **American Railway Engineering Association (presented at the March 1989 Annual Conference, Chicago)**.
46. Newman, R. R., Zarembski, A. M., Resor, R. R., "Burlington Northern's Assessment of the Economics of High Capacity/Heavy Axle Load Cars", **Bulletin of the American Railway Engineering Association**, Bulletin 726, Volume 91, May 1990.
47. Newman, R. R., Zarembski, A. M., & Resor, R. R., "The Effect of Increased Axle Loads on Maintenance of Way and Train Operations at Burlington Northern", **International Heavy**

- Haul Association /Transportation Research Board Workshop**, Vancouver, B.C., June 1991.
48. Zarembski, A. M., "Forecasting of Track Component Lives and its Use in Track Maintenance Planning", **International Heavy Haul Association/Transportation Research Board Workshop, Vancouver, B.C., June 1991.**
 49. Zarembski, A. M., "Track Maintenance Planning For Short Lines, Regionals", **Modern Railroads Short Lines and Regionals**, October 1988.
 50. Zarembski, A. M., Palese, J. W., & Martens, J. H., " The Effect of Improved Rail Manufacturing Process on Rail Fatigue Life", **American Railway Engineering Association**, Bulletin 733, Volume 92, December 1991.
 51. Newman, R. R., Zarembski, A. M., & Resor, R. R., "Economic Implications of Heavy Axle Loads on Equipment Design Operations and Maintenance", **American Society of Mechanical Engineering**, WAM, RTD-Volume 4, Rail Transportation, December 1991.
 52. Zarembski, A. M., "Wood Tie Fastener Performance Requirements: The User's Points of View", **Symposium on Elastic Track Fasteners, American Railway Engineering Association**, Omaha, NE, June 1992.
 53. Resor, R. R., & Zarembski, A. M., "Development of Track Maintenance Planning Models for Rail Rapid Transit Systems", **Computers in Railways III, Proceedings of the Third International conference (COMPRAIL 92)**, Vol. I: Management (Computational Mechanics Publications, Boston, 1992).
 54. Zarembski, A. M., "Rail Life Analysis and its Use in Planning Track Maintenance", **Railway Technology International**, 1993.
 55. Zarembski, A. M., "Determining the Cost of Track Maintenance", **Railway Track and Structures**, April 1993.
 56. Zarembski, A. M., "Transit Rail Wear Standards", **American Public Transit Association**, Miami, June 1993.
 57. Zarembski, A. M., & Palese, J. W., "Rail Maintenance Planning Using Computerized Rail Forecasting Models", **Conference on Track Maintenance Practices on Suburban and Mass Transit Railways**, Hong Kong, June 1993.
 58. Zarembski, A. M., "Forecasting of Future Tie Requirements by Computer Modeling", **Crossties**, July/August 1993.
 59. Zarembski, A. M., & Bohara, A. P., "Controlling Rail and Wheel Wear on Commuter Operations", **American Railway Engineering Association**, Bulletin 742, Volume 94, October 1993.

60. Zarembski, A. M., & McCarthy, W. T., "Development of Non-Conventional Tie and Track Structure Inspection Systems", **Workshop on Innovations in Maintenance of Way Work Equipment, Cosponsored by Transportation Research Board and Roadmasters and Maintenance of Way Association**, Denver, CO, September 1993. Also published in "Transportation Research Record No. 1489: Rail", Railroad Transportation Research, Transportation Research Board, National Research Council, Washington, DC, 1995.
61. Zarembski, A. M., & McCarthy, W. T., "Testing Track Strength and Wood-tie Condition", **Railway Track and Structures**, September 1993.
62. Zarembski, A. M., "Track Maintenance Costing: Alternative Approaches", **Conference on Maintaining Railway Track; Determining Cost and Allocating Resources**, Arlington, VA, October 1993.
63. Zarembski, A. M., "Concrete vs. Wood Ties: Making the Economic Choice", **Conference on Maintaining Railway Track; Determining Cost and Allocating Resources**, Arlington, VA, October 1993.
64. Zarembski, A. M., "Incremental Costs Incurred for Track Maintenance", **Conference on High Speed Trains on Freight Railroads**, Washington, D.C., November 1994.
65. Zarembski, A. M., "Computerized Maintenance Planning and Reporting Systems", **Rail Transit '95: Design, Construction and Maintenance of Transit Track and Structures**, New York, NY, June 1995.
66. Zarembski, A. M., "Development of Rail Gage Face Angle Standards to Prevent Wheel Climb Derailments", **American Railway Engineering Association Annual Technical Conference**, Chicago, IL, March 1996.
67. Zarembski, A. M., "On the Use of Timber Sleepers in Main Tracks", **World Railway Equipment and Technology Update 1996/1997**, Kensington Publications Ltd., London, England, 1996.
68. Zarembski, A. M., "On the Benefits of Rail Maintenance Grinding", **American Railway Engineering Association Annual Technical Conference**, Bulletin 760, Volume 98, Chicago, IL, March 1997.
69. Zarembski, A. M., Holfeld, D. R., and Palese, J. W., "On the Derailment of Rail Vehicles Through Turnouts; A Review of Derailment Causes and Mechanisms", **American Railway Engineering Association Turnout Symposium**, Chicago, IL, August 1996.
70. Zarembski, A. M., "Track Inspection: Knowing What is Out There", **Railway Track and Structures 1997 Track Buyers Guide**, Chicago, IL, 1997.
71. Zarembski, A. M., "Modern Rail Grinding Techniques: Selecting the Proper Grinding Approach", **Railway Gazette International**, London, England, February 1997.

72. Zarembski, A. M., Holfeld, D. R., and Palese, J. W., "Derailment of Transit Vehicles in Turnouts", **Transportation Research Board Annual Meeting**, Washington, DC, January, 1997.
73. Zarembski, A. M., "Recent Developments in Maintenance Planning Systems", **Railway Track and Structures**, Chicago, IL, February 1997.
74. Zarembski, A. M. and Holfeld, D. R., "On the Prediction of the Life of Wood Crossties", **American Woodtie Preservers Association Conference**, Pittsburgh, PA, April 1997.
75. Zarembski, A. M. and Holfeld, D. R., "On the Prediction of the Life of Wood Crossties", **Crossties Magazine**, May/June and July/August, 1997.
76. Holfeld, D. R., and Zarembski, A. M., "Knowledge Transfer: Utilizing New Technologies" **Sixth International Heavy Haul Railway Conference**, Capetown, South Africa, April 1997.
77. Zarembski, A. M., "Development and Implementation of Integrated Maintenance Planning Systems", **Transportation Research Board Annual Meeting**, Washington, DC, January, 1998.
78. Zarembski, A.M., and Gauntt, J.C., "Evaluation of Life Cycle Costs of Alternate Tie (Sleeper)/Fastener Systems and Their Use in Defining Maintenance Policy and Practice", **WCRR Conference**, Florence, Italy, November 1997.
79. Zarembski, A.M, "The Economics of Increasing Axle Loads", **European Railway Review**, London, England, June 1998.
80. Zarembski, A.M., "Enhanced Tie Condition Inspection Using Hand Held Recording Systems", **Crossties Magazine**, August 1998.
81. Zarembski, A.M., Thornton, D., Palese, J.W., Forte, N., "Development and Implementation of RailGraph; A Field Deployable Rail Maintenance Management Tool", **American Railway Engineering Maintenance Association Annual Technical Conference**, 1998.
82. Zarembski, A.M., and Paulsson, Bjorn, "Introduction of Heavy Axle Loads in Europe: Economics of 30 Tonne Axle Load Operations on the Malmbanan", **European Railway Review**, 1998
83. Zarembski, A.M, Palese, Joseph W., and Katz, Leonid "Implementation of a Dynamic Rail-Highway Grade Crossing Transition", **Transportation Research Board Annual Meeting**, Washington, DC, January, 1999.
84. Zarembski, A.M, "Determination of Future Crosstie Requirements from Gage Strength Measurements", **Crossties Magazine**, March/April 1999.

85. Zaremski, A.M. Chiddick, A.S. "Application of New Lubricant Formulations For The Reduction of Wheel Squeal Noise Under Freight and Passenger Service", **American Society of Mechanical Engineers Joint Technical Conference with AREMA**, September 1999
86. Zaremski, A.M., "Use of Track Strength Data in the Determination of Future Crosstie Requirements", **American Railway Engineering Maintenance Association Annual Technical Conference**, September 1999
87. Zaremski, A.M, & Palese, Joseph W., "Application of Maintenance of Way Information Systems to Enhance Operations and Safety". **Passenger Transport, American Public Transit Association**, October 1999.
88. Bonaventura, Clifford S., Palese, Joseph W. & Zaremski, A.M., "Intelligent System for Real-Time Prediction of Railway Response to the Interaction with Track Geometry". **American Society of Mechanical Engineers, 2000 Spring ASME/IEEE Joint Rail Conference**, April 2000.
89. Gauntt, J.C., & Zaremski, A.M., "Analysis of Wood Cross-Tie Price Sensitivities". **American Railway Engineering Maintenance Association Annual Technical Conference**, September 2000.
90. Zaremski, A.M., "The Implications of Heavy Axle Load Operations for Track Maintenance on Short Lines". **American Railway Engineering Maintenance Association Annual Technical Conference**, September 2000.
91. Zaremski, A.M., & Blaze, J., "Small Roads and Heavy Loads". **Railway Age Magazine**, April 2000.
92. Zaremski, A.M., & Kondapalli, Sunil K., "Ballast Shoulder Cleaning: Issues and Economics", submitted for publication **Railway Age Magazine**, June 2000.
93. Resor, R.R., Zaremski, A.M., & Patel, P.K., "An Estimation of the Investment in Track and Structures Needed to Handle 286,000 lb. Rail Cars on Short Line Railroads", **Transportation Research Board**, 2000.
94. Palese, J.W., & Zaremski, A.M., "BNSF Tests Risk-Based Ultrasonic Detection", published **Railway Track & Structures Magazine**, February 2001.
95. Zaremski, A.M., Palese, J.W., & Bell, J.G., "Limiting High Speed Dynamic Forces on the Track Structure; The Amtrak Acela Case", **American Railway Engineering Maintenance Association Annual Technical Conference**, Sept 2001.
96. Redden, J.W.P., Selig, E.T. & Zaremski, A.M., "Design Considerations in Stiff Track Modulus Environments", **Railway Track & Structures Magazine**. February 2002

97. Zarembski, A.M, Palese, Joseph W., and Katz, Leonid “Reduction of Dynamic Wheel/Rail Impact Forces at Grade Crossings Using Stiffness Transitions”, **American Society of Mechanical Engineers, 2001 ImechE Congress**, New York, NY, November 2001
98. Zarembski, A.M., Palese, J.W., Bell, J.G., “Controlling Track Forces during Introduction of New High Speed Trains”, **International Railway Journal**, October 2001
99. Zarembski, A.M., Turner, F., “Funding Infrastructure Upgrade Needs on Short Lines”, **Railway Age Magazine**, December 2001.
100. Turner, R., Zarembski, A.M., “Helping Shortlines Meet the Challenges of HAL”, published **Railway Track & Structures Magazine**, November 2001.
101. Lee, T., Zarembski, A.M., Weisgerber, J., “Use of New Generation Maintenance of Way Information System on Toronto Transit”, **Railway Track & Structures Magazine**, May 2002.
102. Zarembski, A.M., Parker, L.A., Palese, J.W., Bonaventura, C., “Computerized Tie Condition Inspection and Use of Tie Condition Data in Cross-Tie Maintenance Planning”, **International Heavy Haul Conference**, May 2003.
103. Zarembski, A.M., Parker, L.A., Palese, J.W., “Use of Comprehensive Tie Condition Data in Cross-Tie Maintenance Planning and Management on the BNSF”, **American Railway Engineering Maintenance Association Annual Technical Conference**, September 2002.
104. Zarembski, A.M., Gauntt, J.C., “Development of a Tie Usage Index for Matching Wood Performance and Operating Conditions”, **American Railway Engineering Maintenance Association Annual Technical Conference**, September 2002.
105. Zarembski, A.M., Bell, J.G., “Limiting the Effects of High-Speed Dynamic Forces on Track Structure”, published **TR News**, September-October 2002
106. Bonaventura, C.S., Palese, J.W., Zarembski, A.M., “Real-Time Prediction of Railway Vehicle Response to the Interaction with Track Geometry”, **International Heavy Haul Conference**, May 2003.
107. Zarembski, A.M., Blaze, J., “The Economics of Heavy Axle Loads: Costs and Benefits”, published at the **Heavy Haul: The Solution for Europe’s Future**, Paris, March 2003.
108. Zarembski, A.M., Blaze, J., “The Economics of Heavy Axle Loads: Costs and Benefits”, **International Railway Journal**, April 2003.
109. Zarembski, A.M., Palese, J.W., “Risk Based Ultrasonic Rail Test Scheduling: Practical Applications in Europe and North America, **Conference Contact Mechanics and Wear of Rail/Wheel Systems (CM2003)**, Gothenberg, Sweden, June 2003.

110. Zarembski, A.M., Resor, R. R., Patel, P, “Economics of Wayside Inspection Systems”, **2003 ASME International Mechanical Engineering Congress and Exposition (IMECE’03)**, Washington, DC, November 16-21, 2003.
111. Zarembski, A.M., Weisgerber, J., “Implementation of a New Generation of Maintenance of Way Information Systems for Transits”, **AREMA 2003 Annual Conference & Exposition**, Chicago, IL, October 5-8, 2003.
112. Bonaventura, C.S., Palese, J.W., Zarembski, A. M., “Field Evaluation and Deployment of a Track Geometry Car Based Real-Time Dynamics Simulator”, **AREMA 2003 Annual Conference & Exposition**, Chicago, IL, October 5-8, 2003.
113. Bonaventura, C.S., Zarembski, A.M., Palese, J.W., Holfeld, D.R., “Increasing Speeds through the Diverging Route of a Turnout without Increasing Lead Length”, **83rd TRB Annual Meeting**, Washington, DC, January 11-15, 2004.
114. Resor, R.R., Zarembski, A.M., Patel, P., “Factors Determining the Economics of Wayside Defect Detectors”, **83rd TRB Annual Meeting**, Washington, DC, January 11-15, 2004.
115. Bonaventura, C.S., Palese, J.W., Zarembski, A.M., “Performance of a Track Geometry Car-Based Real-Time Dynamics Simulator using Multiple Vehicle Types, **2003 ASME International Mechanical Engineering Congress and Exposition (IMECE’03)**, Washington, DC, November 16-21, 2003.
116. Blaze, J., Zarembski, A.M., “Lessons from the North American Rail/Intermodal Experience: Integrating Technical Engineering with Strategic Business Planning”, *IRCA Rail International – Schienen der Welt*, May 2004.
117. Zarembski, A.M., “Engineering of Railway Tracks”, **Kerr Symposium on Engineering Mechanics**, University of Delaware College of Engineering, Newark, DE, April 29-30, 2004.
118. Zarembski, A.M., Grissom, G.T., Henry M. Lees, “Development of Track Buckling Risk Analysis Methodology”, **AREMA 2004 Annual Conference & Exposition**, Nashville, TN, September 19-22, 2004.
119. Bonaventura, C.S., Zarembski, A.M., Palese, J.W., Holfeld, D.R., “Increasing Speeds through the Diverging Route of a Turnout Without Increasing Lead Length, **Railway Track & Structures**, July 2004
120. Palese, J.W., Euston, T. L., Zarembski, A.M., “Use of Profile Indices for Quality Control Grinding”, **AREMA 2004 Annual Conference & Exposition**, Nashville, TN, September 19-22, 2004.
121. Zarembski, A.M., Grissom, G.T., Lees, H.M., “Assessing the Risk of Track Buckling”, **Railway Track & Structures Magazine**, February, 2005.

122. Bonaventura, C.S., Zarembski, A. M., Palese, J.W., "TrackSafe: A Track Geometry Car Based Real-Time Dynamics Simulator", **ASME 2005 Joint Rail Conference**, Pueblo, CO, March 16-18, 2005.
123. Palese, J.W., Zarembski, A.M., "Practical Applications of Risk Based Ultrasonic Rail Test Scheduling in Europe and North America, **Asset Management for Railway Infrastructure Asia 2005**, Singapore, February 23-24, 2005.
124. Zarembski, A.M., Holfeld, D.H., "The Importance of Safe and Efficient Railroad Operations for Coal Power Plants," **EnergyPulse**, April 11, 2005.
125. Zarembski, A.M., Palese, J.P., "Assessing and Managing Risk on the Railway Track", **International Railway Journal**, May 2005.
126. Zarembski, A.M., Palese, J.P., Euston, T.L., "Monitoring Grinding Effectiveness Using Grinding Quality Indices", **Railway Track & Structures**, June 2005
127. Gauntt, J.C., Zarembski, A.M., "On the Use of 6" x 8" Timber Cross-Ties in Low Density Heavy Axle Load Operations", **2005 AREMA Annual Conference**, Chicago, IL, September 25-28, 2005
128. Zarembski, A.M., Palese, J.P., "Characterization of Broken Rail Risk for Freight and Passenger Railway Operations", **2005 AREMA Annual Conference**, Chicago, IL, September 25-28, 2005
129. Bonaventura, C.S., Holfeld, D.R., Zarembski, A.M., Palese, J.P., "Test Results of a Modified Turnout Designed to Increase Diverging Route Speeds Without Increasing Lead Length", **2005 AREMA Annual Conference**, Chicago, IL, September 25-28, 2005
130. Zarembski, A.M., Euston, T.L., Palese, J.W., "Use of Track Component Life Prediction Models in Infrastructure Management", Submitted for publication, **AusRail Conference and Exhibition**, Sydney, November 2005