

JOSEPH W. PALESE, M.C.E., P.E.

Senior Director-Engineering & Technology

ZETA-TECH

900 Kings Highway N.

Cherry Hill NJ 08034

SUMMARY OF QUALIFICATIONS:

Extensive experience in the area of railway track engineering, track maintenance management and planning, and computer modeling of track component degradation, failure, and overall Behavior. Extensive management and project experience. Well versed in all aspects of computing for the railway industry.

PROFESSIONAL HISTORY:

2007 - **ZETA-TECH; A Harsco Track Technologies Business Unit**

Present Senior Director Engineering Analysis & Technology

Maintenance management and planning for railways and transit systems.

Development of numerous software applications for the railway industry, including real time data acquisition, track component behavior modeling, planning and analysis models, database development and several other applications.

Development and implementation of software applications on freight and passenger railways worldwide. Successful implementation of risk-based safety oriented software for ultrasonic testing requirements, rail replacement, track/train dynamics, etc.

1990 - **ZETA-TECH Associates, Incorporated, Cherry Hill, New Jersey**

2007 Vice President Engineering Analysis & Technology

Development of numerous software applications for the railway industry, including real time data acquisition, track component behavior modeling, planning and analysis models, database development and several other applications.

Development and implementation of software applications on freight and passenger railways worldwide. Successful implementation of risk-based safety oriented software for ultrasonic testing requirements, rail replacement, track/train dynamics, etc.

Responsible for software development and implementation group.

1988 - **Graduate Research, University of Delaware**

1990 Advised by Dr. Arnold Kerr

Co-wrote a computer program for the Federal Highway Department on the blow-up of concrete pavements.

Masters thesis, Beams on Viscoelastic Foundations

June 1986 - **Adams Rehmann and Heggan Associates, Hammonton, New Jersey**

Sept. 1988 Civil Engineer

(Summer/Winter)

Performed analysis and design for land subdivision including hydraulic analysis for stormwater management and road design. Estimation of quantities for land development.

EDUCATION:

1998 Master Business Administration

Rowan University

1990 Master of Civil Engineering

University of Delaware

1988 Bachelor of Civil Engineering

University of Delaware

PROFESSIONAL AFFILIATIONS:

Registered Professional Engineer: New Jersey
Member, American Railway Engineering Maintenance-of-Way Association

HONORS AND AWARDS:

Recipient of the Davis Fellowship from University of Delaware
Member of Tau Beta Pi and Chi Epsilon honor societies
Recipient of AAR Fellowship in Railroad Engineering

COMPUTER EXPERIENCE

Operating Systems: Windows 95/98/NT, DOS, OS/2, UNIX
Software Packages: Microsoft Office, MathCad, TurboCad, Databases, Lotus, Corel, Photoshop, Adobe, Origin, and many others
Programming Languages: Visual Basic 5.0, Visual Basic for Applications, Visual C++ 5.0, FORTRAN, Borland C++, third party controls for visual and object oriented programming.

PUBLISHED PAPERS:

- Masters Thesis, "The Analysis of Structures Supported by Visco-Elastic Foundations", September 1990.
- Zarembski, A. M., Palese, J. W., and Marten, J. H. "The Effect of Improved Rail Manufacturing Process on Rail Fatigue Life". **American Railway Engineering Association**, Bulletin 733, Volume 92, December 1991.
- 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.
- 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.
- Zarembski, A. M., Holfeld, D. R., and Palese, J. W., "Derailment of Transit Vehicles in Turnouts", **Transportation Research Board Annual Meeting**, Washington, D.C., Januar, 1997.
- Palese, J.W., "SelecTie II Helps Railroads Make Solid Economic Designs", **Crossties Magazine**, May/June 1997.
- 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**, Accepted for Publication, 1998.
- Palese, Joseph W., "RTA Introduces Tie LifeTM Program", **Crossties Magazine**, May/June 1998.
- Zarembski, A. M., Palese, Joseph, J. W., Katz, Leonidm "Implementation of a Dynamic Rail-Highway Grade Crossing Transition:", **Transportation Research Board Annual Meeting**, Washington, D.C., January 1999.
- Palese, Joseph W., Holfeld, Donald R., "Tie Planning Tools for the Track Inspector", **American Railway Engineering Maintenance Association Track & Structures Annual Conference**, 1999.
- Bonaventura, Clifford S., Palese, Joseph W., Zarembski, A.M., "Intelligent System for Real-Time Prediction of Railway Vehicle Response to the Interaction with Track Geometry", **2000 ASME/IEEE Joint Railroad Conference**, April 2000.
- Palese, Joseph W., Wright, Thomas W., "Application of a Risk Based Ultrasonic Test Frequency Scheduling System on Burlington Northern Santa Fe", **TONE: Volume 5: Nondestructive Testing & Evaluation (NDT&E) for the Railroad Industry**, 2000.

Palese, Joseph W., “Temperature Effects on Welded Rail”, **Live Stream**, September/October 1998.

Palese, Joseph W., Wright Thomas W., “Risk-Based Ultrasonic Rail Test Scheduling on Burlington Northern Santa Fe”, **American Railway Engineering Maintenance Association Annual Technical Conference**, 2000.

Palese, Joseph W., & Zarembski, Allan M., “BNSF Tests Risk-Based Ultrasonic Detection”, published **Railway Track & Structures Magazine**, February 2001.

Zarembski, 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**, September 2001.

Zarembski, A.M., Palese, J.W., Bell, J.G., “Controlling Track Forces during Introduction of New Height Speed Trains”, **International Railway Journal**, October 2001.

Zarembski, A.M., Palese, J.W., & 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.

Palese, Joseph W., Wright Thomas W., “Risk-Based Ultrasonic Rail Test Scheduling on Burlington Northern Santa Fe”, published **The Permanent Way Institution – Journal and Report of Proceedings, 2001 Vol 119, Part 2**

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”, accepted for publication, **American Railway Engineering Maintenance Association Annual Technical Conference**, September 2002.

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.

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.

Grissom, G.T., Palese, J.E., “Field Demonstration of the Use of Track Strength Data to Optimize Tie Replacement Requirements for High Speed Operations”, published **Crossties Magazine**, Nov/Dec 2002.

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)**, Gothenburg, Sweden, June 2003.

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.

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.

Bonaventura, C.S., Palese, J.W., Zarembski, A.M., “Performance of a Track Geometry Car-Real-Time Dynamics Simulator using Multiple Vehicle”, **2003 ASME International Mechanical Engineering Congress and Exposition (IMECE’03)**, Washington, DC, November 16-21, 2003.

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

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.

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.

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.

Zarembski, A.M., Palese, J.P., "Assessing and Managing Risk on the Railway Track", **International Railway Journal**, May 2005.

Zarembski, A.M., Palese, J.P., Euston, T.L., "Monitoring Grinding Effectiveness Using Grinding Quality Indices", **Railway Track & Structures**, June 2005

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

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

Zarembski, A.M., Euston, T.L., Palese, J.W., "Use of Track Component Life Prediction Models in Infrastructure Management", **AusRail Conference and Exhibition**, Sydney, November 2005

Zarembski, A.M., Palese, J.W., "Management of Broken Rail Risk" ("Gestion du risqué de rupture du rail"), **LeRail**, January 2006

Zarembski, A.M., Palese, J.W., Bonaventura, C.S., "Use of Hand Held Computers (PDAs) for Track Inspection and Maintenance" ("Utilisation d'ordinateurs de poche (PDA) pour le contrôle et la maintenance des voies"), **LeRail**, February/March 2006

Zarembski, A.M., Palese, J.W., "Managing Risk on the Railway Infrastructure", **World Congress of Railroad Research**, Montréal, Canada, June 2006

Zarembski, A.M., Bonaventura, C.S., Palese, J.W., "Real Time Analysis of Track Geometry to Control Derailment Risk", **Rail Quarterly/LeRail**, June 2006

Zarembski, A.M., Palese, J.W., Euston, T.L., "Using Real Time Quality Control to Manage Rail Grinding", **interface The Journal of Wheel/Rail Interaction (www.interfacejournal.com/features/07-06)**, July 2006

Zarembski, A.M., Gauntt, J.C., Grissom, G.T., Palese, J.W., "Field Demonstration of the Use of Track Strength Data to Optimize Tie Replacement Requirements", **AREMA 2007 Annual Conference & Exposition**, Chicago, IL, September 2007

Zarembski, A.M., Palese, J.W., "Use of Risk Management in Improving Track Safety", **AREMA 2007 Annual Conference & Exposition**, Chicago, IL, September 2007

Zarembski, A.M., Palese, J.W., "Improving Track Safety with New Generation Risk Management Tools", **Railway Track & Structures**, September 2007

Palese, J.W., Zarembski, A.M., "The Economics Of Heavy Axle Loads:Costs, Benefits, And Engineering Issues", **ExpoRail 2007**, India, October 2007