

Donald R. Holfeld
Director of Training and Field Engineering
ZETA TECH
A Harsco Rail Business Unit

Summary of Qualifications

Over 30 years of experience in Railway Operations, Engineering, Track Design, Maintenance, Inspection and Testing. Track engineering and design, construction and construction management, Initiation and Development of new technologies, and computer systems; Track and Roadbed Engineering; Track and Plant Maintenance.

Expertise in Track Design and Maintenance to include design of track and yards, track maintenance, inspection, rail grinding, wheel and rail profiles, wheel and rail dynamics, track geometry inspection vehicles, rail ultrasonic testing, track maintenance planning and management. Designed and commissioned the CN TEST cars. Developed, implemented, and/or supervised testing programs in track geometry, rail ultrasonic testing, track strength testing, weight-in-motion scales, wheel impact detectors, rail profile measurement systems, etc.

Design and Construction of railway track, yards and facilities including: site preparation, track layout, purchase of material, installation and construction of track. Construction of car repair facilities, yard towers, bridges, and affiliated structures. Subgrade prep design, layout and construction of yard tracks and facilities serving the entire west coast of Canada.

Designed, developed and delivered Engineering (and higher) Level Training courses on railroad engineering, track design, track inspection, track maintenance, CWR installation, maintenance, inspection, and destressing techniques for numerous railways, transits, commuter railways, US Federal Railroad Administration, AREMA, Railway Education Bureau, etc.

Professional History:

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| 1994 – 2007 | ZETA-TECH Associates, Inc., Cherry Hill, New Jersey
September 2007 – Present |
| 2007 to Present | ZETA-TECH an Independent Business Unit of Harsco Track Technologies
<i>Director of Training and Field Engineering</i>
Responsible for the development and implementation of field engineering, inspection, testing and railroad training programs. Training activities including track inspection training, operations training, track safety, maintenance of track and equipment, accident/incident evaluation, bridges and structures, signals and communications, and all aspects of railway and transit operations. Training performed for numerous railways, transits, commuter railways, US Federal Railroad Administration, AREMA, Railway Education Bureau, etc. Responsible for all field engineering activities to include inspection and field evaluation of track, bridges and structures, and derailment investigation. Development of rail and wheel profiles and evaluation for effectiveness of rail grinding and wheel truing activities. |
| 1989 -1994 | CN NORTH AMERICA
<i>System Director, Operations Training</i>
Responsible for the organization and direction of system wide Railway training group. Produced Standards and Methods of development and delivery to meet functional needs, improve morale and reduce learning transfer time. Conceived, |

- created and instructed graduate level courses on Railway Engineering for McGill University. Produced award winning Safety Video for CN Rail, "Funeral for a Friend"
- 1983 – 1989 ***System Engineer - Technology***
Designed, developed, and supervised construction of inspection and evaluation systems for CN. These included: data shuttle measurement system to evaluate bridge condition, three Track (Geometry) Evaluation System (TEST) vehicles, Track Survey Vehicle, Track Loading Fixture, Optical Rail Image Analyzer, and CN's Track Management System Computer Based Analyzer. Introduced to the railway the Wheel Impact Detector, to determine flat/out of round wheel conditions, which could result in broken wheels and rails if left, undetected. These detectors are now used extensively to find and classify wheel aberrations.
- 1982 – 1983 ***Track Research Engineer***
Created and supervised field tests of new equipment/material, and evaluated new maintenance methods. Installed and monitored new track components and produced a computer database to capture information monitored.
- 1981 – 1982 ***Planning Engineer***
Worked with the Bridges Department to develop a computer-aided design program for bridge design and maintenance forecasts. Developed the design for new snowplows. Reviewed and coordinated the installation and application of a computer drafting system for several functions in CN.
- 1980 – 1981 ***Track and Roadway Engineer***
Responsible for all operating railroad and structure maintenance on CN from Jasper, Alberta to Boston Bar, British Columbia, (a total distance of over 800 miles of track) including: rail, right-of-way, bridges and structures, (responsible for the inspection, maintenance and upgrading of all concrete, steel and timber bridges on the division), with a staff exceeding 300 people.
- 1977 – 1980 ***Maintenance Engineer***
Directly in charge of training, safety and maintenance operations.
- 1973 – 1977 ***Field Engineer***
Supervised the construction of a multimillion dollar yard including all trackage, bridges, buildings and services.
- 1965 – 1967 **Department of the Environment of Alberta**
Research Technologist
Initiated methods to analyze pesticides and other organic and inorganic environmental problems. Analyzed air, water, and ground for contaminants.

Education:

Leadership - CN Sponsored course
 Managing Our Business (MOB) - CN Sponsored course
 Developing Operation Management Employees (DOME) - CN Sponsored course
 B.Sc. Civil Engineering - University of Alberta
 Research Chemistry - Northern Alberta Institute of Technology

Professional Activities:

Member - American Railway Engineering and Maintenance of Way Association (served on Committees 2, 5, 32)

MEMBER - ASSOCIATION OF PROFESSIONAL ENGINEERS OF BRITISH COLUMBIA

Member - American Society of Training and Development
 Member - National Society for Performance and Instruction

Published Papers:

1. Holfeld, D. R., "New Technologies for Track Measurement", Proceedings from A Symposium on Automated Track Measurement, American Railway Engineering Association, Committee 2, March 16-17, 1988.
2. Holfeld, D. R. and Izbinsky, G., "Requirements for an On-Board Rail Profile Measurement System", Proceedings from A Symposium on Automated Track Measurement, American Railway Engineering Association, Committee 2, March 16-17, 1988.
3. 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.
4. 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.
5. Holfeld, D. R. and Zarembski A. M., "On the Prediction of the Life of Wood Crossties", Crossties, May/June, 1997.
6. 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.
7. Holfeld, D. R. and Zarembski, A. M., "Knowledge Transfer: Utilizing The New Technologies", International Heavy Haul Association Conference proceedings, 1997.
8. Zarembski, A.M., Holfeld, D.H., "The Importance of Safe and Efficient Railroad Operations for Coal Power Plants," **EnergyPulse**, April 11, 2005.
9. 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.
10. 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