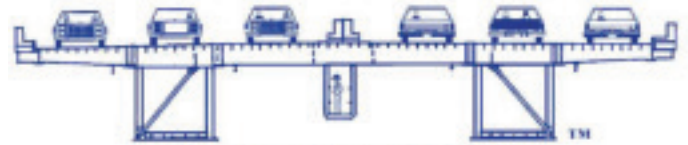


3RD ORTHOTROPIC BRIDGE CONFERENCE

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San Mateo-Hayward Bridge

Hayward/San Mateo OCEA 1968

http://www.asce.org/opal/past_ocea.cfm#1968

TUESDAY - JUNE 25TH — Free FHWA Workshop

Moderator: Duncan Paterson

Manual for Design, Construction, and Maintenance of Orthotropic Steel Deck Bridges

In February 2012, the Federal Highway Administration published the Manual for Design, Construction, and Maintenance of Orthotropic Steel Deck Bridges. The authorship team represents several world leading experts for Orthotropic Decks. The new Manual presents an extensive summary of the current understanding and practical guidelines for application of orthotropic decks in bridge construction. It includes new and updated topics including finite element analysis, fatigue assessment, fabrication, wearing surfaces, inspection, amongst others. The new manual is based on over 40 years of research and experience since the last publication. In this workshop, the authors will present each chapter of the manual including the design examples contained in the final chapter. A question and answer session will provide ample opportunity for discussion with the experts.



US DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

**MANUAL FOR DESIGN, CONSTRUCTION, AND
MAINTENANCE OF ORTHOTROPIC STEEL
DECK BRIDGES**

Publication No. FHWA-IF-12-027
February 2012



Niels Bitsch is the Project Director and Head of Section at COWI A/S, and is a highly experienced designer within steel structures, especially steel superstructures for bridges. In the past 24 years, he has been involved in the design of steel decks for some of the most significant bridges in the world, Great Belt Bridge and Oresund Bridge, plus a number of not yet completed bridges, Messina Strait Bridge and Fehmarn Fixed Link Bridge. The design work has included orthotropic steel decks for both roadway and railway bridges. The design experience has from 2003 been supplemented with thorough knowledge of bridge rehabilitation and operation and maintenance of Fixed Links and in special major cable supported bridges.



Dr. Robert Connor, Associate Professor, School of Civil Eng., Purdue University - Dr. Connor has nearly twenty years of experience in the research and testing of bridges and related structures. He is currently an Associate Professor in the School of Civil Engineering at Purdue University. Prior to joining the faculty at Purdue, he was a Senior Research Engineer and the manager of the Infrastructure Monitoring Program at the ATLSS Engineering Research Center at Lehigh University. Over his career, he has conducted field evaluations of bridges throughout the United States and internationally. He has researched fabrication flaws, fatigue cracking, and failures and developed repair strategies for structures for a variety of agencies including state DOT, rapid transit authorities, construction companies, and structural consultants. He has developed and is currently developing fatigue design specifications for highway bridge structures and bridge expansion joints for NCHRP and state agencies. In addition, he has developed short courses focused on fatigue and fracture design for steel bridge structures geared toward practicing engineers and was the Chairman of the First International Conference on Fatigue and Fracture in the Infrastructure, held in August of 2006.

Prior to entering the academic profession, he worked as a design engineer responsible for the conceptual, preliminary, and final design of numerous bridge design and rehabilitation projects throughout the eastern United States.



Vellore S. Gopalaratnam, P.E. — Dr. Gopalaratnam, Professor of Civil Engineering at the University of Missouri-Columbia and Fellow of the American Concrete Institute is a registered Professional Engineer in Missouri. He has also been active in other professional organizations including the American Society of Civil Engineers, American Academy of Mechanics, Society of Experimental Mechanics and the Materials Research Society. He has previously served as the chair of the ACI Fracture Mechanics Committee and Secretary of the ACI Fiber Reinforced Concrete Committee. His research interest includes experimental mechanics and stress analysis of bridges and other structures and fracture and failure of materials. Dr. Gopalaratnam has completed both laboratory and field research on the fatigue performance of wearing surface systems for steel orthotropic bridges, including the Poplar Street Bridge, MO, Bronx-Whitestone Bridge, NY, and San Mateo-Hayward Bridge, CA. He is the primary author of Chapter 9 on Wearing Surface for the FHWA Manual for Design, Construction, and Maintenance of Orthotropic Steel Deck Bridges



Kevin Irving is the Marketing Manager of the Northern Operations for AZZ Galvanizing Services. He is a Graduate of Harischfeger Institute in Milwaukee, WI and a Dale Carnegie Graduate. Kevin has spent over 20 years in the Hot Dip Galvanizing Industry, and has over 25 years in operations management. He is a certified presenter of the American Galvanizing Association (AGA) for the Galvanize It and Sustainable Development Seminars.

Kevin is a Former Board Member for the American Galvanizing Association, and was the Vice President and General Manager for AAA Galvanizing until they were acquired by AZZ Galvanizing Services in April of 2008. He is a Board Member for (CCAI) Chemical Coaters Association International, and Vice Chair of the NACE Committee on Hot Dip Galvanizing TEG 428X. He has been a speaker for the International Bridge Conference for the last four consecutive years, a speaker at SSPC the last two years, a speaker at NACE 2013, a speaker for the 2012 NACE Western Area Conference, and a speaker at the 2013 Southeast Bridge Preservation Partnership TSP.2. Kevin has been a member of NACE since 2008, and a member of SSPC since 2009.



Brian M. Kozy, Ph.D., P.E. — Dr. Kozy is a Senior Bridge Engineer for Federal Highway Administration, Office of Bridge Technology. He currently leads the federal Steel Bridge Program, which aims to identify, advance, and deploy the latest engineering and construction technologies to improve performance on a national level. He is a former Professional Associate from HDR Engineering, Inc. and Adjunct Lecturer for the University of Pittsburgh Civil Engineering Department. In his current position, Dr. Kozy actively supports TRB and AASHTO steel bridge committees and routinely contributes to advancement in the industry body of knowledge by publishing technical papers and making conference presentations.



Brian J. Leshko is a Vice President, Principal Professional Associate and HDR's Bridges & Structures Inspection, Management and Operations Program Leader based in Pittsburgh, PA. He received his B.S.C.E. from the United States Air Force (USAF) Academy, an M.S. in Structural Engineering from the University of Connecticut, and a Master of Civil Engineering with an emphasis in Structural Dynamics from The Johns Hopkins University. Following his Regular Commissioning in the USAF, Brian served 7 years on Active Duty as a Civil Engineering Officer with assignments as a Design and Construction Engineer, Quality Assurance Evaluator, and Instructor of Civil Engineering at the USAF Academy. He has devoted the last 20 years of his career as a bridge engineer. His experience includes NBIS/Pontis, FCM and in depth bridge condition inspections; new and rehabilitation designs; and ratings by working stress and load factor methods. He is an NHI-Certified Bridge Safety Inspector and a former SPRAT-Certified Level I Rope Access Technician with extensive rope access and structure climbing experience inspecting large and complex structures, including: tunnels; water control structures; pipeline structures; and plate girder, box girder, arch, suspension, cable-stayed, orthotropic, segmental concrete and various truss bridges (highway and railroad). Brian has been a Professional Engineer since 1992, and he is currently registered in 16 states.



Dennis Mertz, Ph.D, Lehigh University, University of Delaware, - Dr. Mertz has received numerous awards and honors, including the Richard S. Fountain Bridge Task Force Award from AISI in 2005, the Richard R. Torrens Award from ASCE in 2003, and the Structural Engineering Institute Certificate of Appreciation from ASCE. He has written specifications and manuals for the Departments of Transportation in many states.



David L. McQuaid is a Welding Consultant with D. L. McQuaid & Associates, Inc. Previously he worked for American Bridge Company and Philip Services Corporation.

In 1964, Mr. McQuaid graduated from West Virginia University with a Bachelor of Science Degree in Civil Engineering. He is a Registered Professional Engineer in the State of West Virginia and Pennsylvania. Upon graduation, he started his work with the American Bridge Division of U. S. Steel Corporation. During his 31 years with American Bridge he has held a number of positions in the Construction Department including Senior Welding Engineer, and Manager of Technical Services. Mr. McQuaid has been involved with Fabricating, Erecting and Welding Orthotropic Bridge Decks since 1978.

To compliment his training and career as a Welding Consulting Engineer, Mr. McQuaid is a member of the American Welding Society, Past Chairman and currently is a member of the AWS D1 Structural Welding Code - Steel, Chairman of the AWS D1.5 Bridge Welding Code and Past Chairman of the AWS Technical Activities Committee. He is Past Chairman and currently a member of the National Research Council Transportation Research Board AFH70 Committee on Fabrication and Inspection of Metal Structures.

Mr. McQuaid is currently a member and Vice President of the AWS Board of Directors.



Dr. Thomas Murphy joined Modjeski and Masters, Inc. in 2000, and is a Senior Associate with the firm. Dr. Murphy's professional experience has included the analysis, design, and detailing of a variety of bridges including cable-stayed, suspension, arch, truss, and girder bridges with special emphasis on seismic analysis and design. Dr. Murphy has been involved in all stages of the bridge design process; from the development of design specifications, to the completion of conceptual studies for specific crossings, preliminary and final design, and construction stage issues. Recent assignments include the Engineer of Record for the design of twin through arches carrying I-74 across the Mississippi River.



Duncan Paterson, Ph.D., P.E. — Dr. Paterson has over twelve years experience working as both a Bridge Engineer and Structural Research Engineer. Dr. Paterson is currently an active member of AREMA Committee 15 – Steel Structures and serves as a subcommittee vice chair and on the Task Force for adoption of high speed rail loads in AREMA. Paterson is active in the technical community having published multiple peer reviewed papers and presentations.

The program is subject to change, but we have laid out the meeting based on the assumption that all participants will be able to present their ideas.