

CURRICULUM VITAE

DAVID DUERR, P.E.

Years Experience

President, 2DM Associates, Inc., since 1986
With other firms, 12 years

Education

Bachelor of Architectural Engineering
Pratt Institute, New York, 1975

Master of Science in Civil Engineering
University of Houston, 1985

Professional Registration

Alabama	Illinois	Missouri	South Carolina
Alaska	Louisiana	New Mexico	Texas
California	Michigan	Ohio	Virginia
Florida	Mississippi	Pennsylvania	Washington

Professional Affiliations

American Council of Engineering Companies	Society of Automotive Engineers
American Society of Civil Engineers	Specialized Carriers & Rigging
American Society of Mechanical Engineers	Association

Biographical Listings

Marquis Who's Who in America (since 1997)
Marquis Who's Who in Science and Engineering (since 1996-97)
Marquis Who's Who in the World (since 1996)
Marquis Who's Who in the South and Southwest (since 1995-96)
Marquis Who's Who in Finance and Industry (1998-1999, 2000-01)

Committee Service

ASME BTH Standards Committee, Design of Below-the-Hook Lifting Devices (chair)
ASME B30 Safety Standards Committee (alternate)
ASME B30.1 Subcommittee - Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries
ASME B30.20 Subcommittee - Below-the-Hook Lifting Devices
SC&RA Telescopic Hydraulic Gantry Task Force

Experience Summary

Over thirty-six years experience in design engineering and heavy construction. Extensive background in the conceptual development and design of specialized lifting, rigging, and hauling equipment and in crane and rigging operations and applications. Design and/or analysis experience on cranes and derricks, hydraulic gantry systems, below-the-hook lifting devices, hauling equipment, concrete and steel bridges, and marine structures. Strong knowledge of the naval architectural requirements for the transportation of heavy-lift cargo. Job site experience on nuclear, fossil, and hydroelectric power plants, refineries, shipping facilities, manufacturing plants, and offshore platforms. Service as an expert witness in the investigation of lifting, rigging, and specialized transportation accidents. Authored or coauthored forty-one papers and articles on structural engineering, heavy lifting, and heavy hauling methods. Regular lecturer at construction industry conferences.

Areas of Specialization - David Duerr, P.E.

Lifting Equipment Design and Analysis

Extensive experience in the design of specialized lifting equipment, including derricks; tower systems utilizing either reeved load falls or strand jacks; overhead cranes using drums and reeving, strand jacks, or chain hoists; lifting systems integrated into existing building structures; and lifting appurtenances including lifting beams, spreader bars, and other below-the-hook lifting devices. Particular expertise in the design and analysis of telescopic hydraulic gantries. Conversant with the applicable design standards for the general construction industry and for nuclear construction, maintenance, and decommissioning.

Lift Planning and Engineering

Planning and review of lifting operations using cranes, derricks, and other conventional lifting equipment. Calculation of support reactions for truck and crawler cranes and design of special supports; analysis of guy derrick and gin pole/gallows frame guy system loads and foundation and deadman design; and inspection and analysis of existing lifting and rigging equipment for capacity verification and/or upgrade. Design of header beams, track beams, and supports for lifts using telescopic hydraulic gantry systems. Design and analysis of below-the-hook rigging systems.

Barge Transportation

Complete engineering of barge shipments of heavy and specialized cargo, including development of stowage plans; hydrostatic, dynamic, and intact and damaged stability analyses of the laden barge; design of sea-fastenings; structural analysis of the barge under the effects of loading and unloading the cargo and sea-fastening reactions; and loading and unloading plans for grounded, partially grounded, and floating barges. Design and analysis of mobile crane and hydraulic gantry system installations on barges. Strong knowledge of the requirements for barge transportation of irradiated cargo (ANSI N14.24-1985).

Accident Investigation

Investigation of accidents and failures involving cranes, rigging, and specialized lifting and transportation equipment. Special expertise in hydraulic gantry systems, mobile crane support, and below-the-hook lifting devices. Analysis of structural and mechanical capacities of equipment. Review of lifting and rigging field operations. Expert witness services for litigation support for contractors, insurance companies, and attorneys.

Publications List - David Duerr, P.E.

Professional Journals

“Pin Clearance Effect on Pinned Connection Strength” (with G. Pincus), *Journal of Structural Engineering*, Vol. 112, No. 7, American Society of Civil Engineers, New York, 1986.

“Deformation Behavior of Pinned Connections with Large Pin Clearance” (with G. Pincus), *Journal of Structural Engineering*, Vol. 114, No. 12, American Society of Civil Engineers, New York, NY, 1988.

“Variation of Lift Load Distribution Due to Sling Length Tolerance,” *Engineering Journal*, Vol. 26, No. 3, American Institute of Steel Construction, Inc., Chicago, 1989.

“Lift of Shippingport Reactor Pressure Vessel,” *Journal of Construction Engineering and Management*, Vol. 116, No. 1, American Society of Civil Engineers, New York, 1990.

“Transportation of Shippingport Reactor Pressure Vessel,” *Journal of Construction Engineering and Management*, Vol. 117, No. 3, American Society of Civil Engineers, New York, 1991.

“Beam Web Strength under Pairs of Concentrated Compression Loads,” *Practice Periodical on Structural Design and Construction*, Vol. 8, No. 1, American Society of Civil Engineers, Reston, VA, 2003.

“Pinned Connection Strength and Behavior,” *Journal of Structural Engineering*, Vol. 132, No. 2, American Society of Civil Engineers, Reston, VA, 2006.

“New Standard for Design of Below-the-Hook Lifting Devices,” *Practice Periodical on Structural Design and Construction*, Vol. 12, No. 3, American Society of Civil Engineers, Reston, VA, 2007.

“Design Category and Service Class Selection for Below-the-Hook Lifting Devices,” *Practice Periodical on Structural Design and Construction*, Vol. 13, No. 2, American Society of Civil Engineers, Reston, VA, 2008.

“Design Factors for Fabricated Steel Below-the-Hook Lifting Devices,” *Practice Periodical on Structural Design and Construction*, Vol. 13, No. 2, American Society of Civil Engineers, Reston, VA, 2008.

“ASME BTH-1 Pinned Connection Design Provisions,” *Practice Periodical on Structural Design and Construction*, Vol. 13, No. 2, American Society of Civil Engineers, Reston, VA, 2008.

“Design of Stiffened Plate Lifting Beams,” *Practice Periodical on Structural Design and Construction*, Vol. 13, No. 2, American Society of Civil Engineers, Reston, VA, 2008.

University Publications

“Experimental Investigation of Pin Plates” (with G. Pincus), Report No. UHCE 85-3, University of Houston, 1985.

“Experimental and Finite Element Studies of Pin Plate Behavior,” Master of Science Thesis, University of Houston, 1985.

Conference Papers

“Overland Transportation of Heavy-Lift Cargo,” *SAE Technical Paper Series*, presented at the International Off-Highway Meeting & Exposition, Milwaukee, WI, Society of Automotive Engineers, Inc., Warrendale, PA, 1982.

Publications List - David Duerr, P.E. (con't.)

Conference Papers (con't.)

“Moving Loads On and Off Barges,” presented at the Crane & Rigging Workshop, Lexington, KY, Specialized Carriers & Rigging Association, Fairfax, VA, 1993.

“Design of Vertical Hydraulic Telescopic Lifting Booms,” *SAE Technical Paper Series*, presented at the International Off-Highway & Powerplant Congress & Exposition, Milwaukee, WI, Society of Automotive Engineers, Inc., Warrendale, PA, 1994.

“Rigging With Gantries,” presented at the Crane & Rigging Workshop, Fort Worth, TX, Specialized Carriers & Rigging Association, Fairfax, VA, 1994.

“Considerations for Multi-Crane Lifts,” presented at the Crane & Rigging Workshop, San Francisco, CA, Specialized Carriers & Rigging Association, Fairfax, VA, 1995.

“Transportation of Spent Nuclear Fuel,” presented at the 1997 Spring Meeting, Houston, TX, American Institute of Chemical Engineers, New York, NY, 1997.

“Engineering Principles for Rigging Design,” presented at the Crane & Rigging Workshop, Myrtle Beach, SC, Specialized Carriers & Rigging Association, Fairfax, VA, 1997.

“Lifting and Rigging on Barges,” presented at the Crane & Rigging Workshop, Milwaukee, WI, Specialized Carriers & Rigging Association, Fairfax, VA, 1998.

“Status Report – ASME BTH Standards Committee,” presented at the Crane & Rigging Workshop, Pittsburgh, PA, Specialized Carriers & Rigging Association, Fairfax, VA, 2000.

“Mobile Cranes on Barges,” presented at the Crane & Rigging Workshop, Denver, CO, Specialized Carriers & Rigging Association, Fairfax, VA, 2002.

“Lifting with Hydraulic Gantries,” presented at the Crane & Hoist Conference & Exhibition, Rosemont, IL, Zweig White Information Services, LLC, Chicago, IL, 2004.

“Planning of Multi-Crane Lifts,” presented at the Crane & Hoist Conference & Exhibition, Houston, TX, Milo Media, LLC, Barrington, IL, 2006.

“Below-the-Hook Lifting Device Standards,” presented at the Crane & Rigging Conference, Houston, TX, Maximum Capacity Media, LLC, Fort Dodge, IA, 2010.

“Effective Bearing Length of Crane Mats,” presented at the Crane & Rigging Conference, Houston, TX, Maximum Capacity Media, LLC, Fort Dodge, IA, 2010.

Lectures (without papers)

“Experimental and Finite Element Studies of Pin Plate Behavior,” given at the Cullen College of Engineering, University of Houston, February 18, 1986.

“Shippingport Atomic Power Station - Removal and Burial of the Reactor Pressure Vessel,” given at the Cullen College of Engineering, University of Houston, October 17, 1989.

“Effective Below-the-Hook Rigging,” given at the Crane & Rigging Workshop, Pittsburgh, PA, Specialized Carriers & Rigging Association, Fairfax, VA, September 21, 1991.

Publications List - David Duerr, P.E. (con't.)

Lectures (without papers) (con't.)

“Hydraulic Gantries in Industrial Construction,” given at the Cullen College of Engineering, University of Houston, January 31, 1996.

“Bridge Analysis - Practices and Procedures - Special Approach for Superloads,” given at the Oversize/Overweight Transportation Symposium, Mobile, AL, Specialized Carriers & Rigging Association, Fairfax, VA, March 6, 1997.

“Gantry Safety,” given at the 1999 Rigging Workshop, Millwright Apprenticeship School, Cleveland, OH, March 6, 1999.

“Barge-Mounted Mobile Crane Operations,” given at the short course Managing Crane and Rigging Operations to Improve Safety and Eliminate Accidents, University of Wisconsin-Madison, February 12, 2002; January 29, 2003.

“Mobile Cranes on Barges,” given at the Construction Safety Conference & Exposition, Construction Safety Council, Rosemont, IL, February 11, 2003; CHC Lifting Conference, Las Vegas, NV, Milo Media, LLC, Barrington, IL, December 3, 2008.

“Considerations for Multi-Crane Lifts,” given at the Crane & Hoist Conference & Exhibition, Rosemont, IL, Zweig White Information Services, LLC, Chicago, IL, October 20, 2004.

“Lifting with Gantries,” given at the Crane & Rigging Workshop, Houston, TX, Specialized Carriers & Rigging Association, Fairfax, VA, November 11, 2005.

“Lifting with Hydraulic Gantries,” given at the Crane & Hoist Conference & Exhibition, Houston, TX, Milo Media, LLC, Barrington, IL, October 4, 2006; Crane & Hoist Conference & Exhibition, Las Vegas, NV, Milo Media, LLC, Barrington, IL, December 4, 2007.

“Engineering Principles for Lifting and Rigging,” given at the Crane & Hoist Conference & Exhibition, Houston, TX, Milo Media, LLC, Barrington, IL, October 6, 2006.

“Supporting the Mobile Crane: Loads, Mats, and Soil,” given at the Crane & Hoist Conference & Exhibition, Las Vegas, NV, Milo Media, LLC, Barrington, IL, December 4, 2007; Crane & Rigging Workshop, Toronto, Specialized Carriers & Rigging Association, Fairfax, VA, September 18, 2008.

“Preparing for Tandem Picks,” given at the Crane & Rigging Workshop, Toronto, Specialized Carriers & Rigging Association, Fairfax, VA, September 20, 2008.

“Understanding and Using ASME B30.20 and BTH-1,” given at the CHC Lifting Conference, Las Vegas, Nevada, Milo Media, LLC, Barrington, IL, December 3, 2008.

“Alternative Lifting Methods: Not Just Cranes Anymore,” given at the Crane & Rigging Workshop, Milwaukee, WI, Specialized Carriers & Rigging Association, Fairfax, VA, September 18, 2009.

“Telescopic Hydraulic Gantries – Regulations and Standards,” given at the Industrial Crane & Hoist Conference, Houston, TX, Maximum Capacity Media, LLC, Fort Dodge, IA, July 20, 2011.

“Developing Lift Plans That Work,” given at the Crane & Rigging Workshop, Philadelphia, PA, Specialized Carriers & Rigging Association, Fairfax, VA, September 22, 2011.

Publications List - David Duerr, P.E. (con't.)

Periodical Articles

“Williams-Bragg Joint Venture Removes Reactor Vessel From First U.S. Nuclear Power Plant,” *Lifting & Transportation International*, Vol. 38, No. 8, Specialized Carriers & Rigging Association, Fairfax, VA, 1991.

“Heavy Lifting Using Hydraulic Gantries,” *Lifting & Transportation International*, Vol. 41, No. 6, Specialized Carriers & Rigging Association, Fairfax, VA, 1994.

“Lift Engineering for Hydraulic Gantries,” *Lifting & Transportation International*, Vol. 41, No. 7, Specialized Carriers & Rigging Association, Fairfax, VA, 1994.

“Renaissance Rigging,” *Lift Equipment*, April-May, 1995, Group III Communications, Independence, MO.

“Multi-Crane Lifts - 10 Planning Pointers,” *Lifting & Transportation International*, Vol. 42, No. 7, Specialized Carriers & Rigging Association, Fairfax, VA, 1995.

“Multiple Crane Lifts,” *International Cranes*, Vol. 4, No. 8, KHL International Ltd., Wadhurst, East Sussex, England, 1996.

“Railroad Grade Crossing Safety,” *Lifting & Transportation International*, Vol. 43, No. 6, Specialized Carriers & Rigging Association, Fairfax, VA, 1996.

“Licensed Professional Engineer - Just What Does It Mean?” (with H.I. Shapiro), *Lifting & Transportation International*, Vol. 44, No. 8, Specialized Carriers & Rigging Association, Fairfax, VA, 1997.

“Rigging Considerations for Barge Loading and Unloading,” *Lifting & Transportation International*, Vol. 45, No. 7, Specialized Carriers & Rigging Association, Fairfax, VA, 1998.

“A Brief History of Lifting Gantries,” *Cranes Today*, Issue 312, Wilmington Publishing Ltd., Wilmington, Dartford, England, November, 2000.

“Barge-Mounted Mobiles,” *Cranes Today*, Issue 333, Wilmington Publishing Ltd., Wilmington, Dartford, England, September, 2002.

“Lifting Solutions,” *American Cranes & Transport*, Vol. 1, No. 5, KHL Group, Wadhurst, East Sussex, England, 2005.

“Designing a Floating Crane Installation,” *Cranes Today*, Issue 374, Wilmington Publishing Ltd., Wilmington, Dartford, England, February, 2006.

Accident Investigations; Expert Witness Services - David Duerr, P.E.

Subject/Year	Report	Deposition	Courtroom Testimony	Attorney/Client	Representing (P = Plaintiff; D = Defendant)
Hauling accident during the movement of a 140-ton cold box/1993	X			Richard H. Albert, Esq. In-house council	Air Products & Chemicals, Inc. (P) Allentown, Pennsylvania
Guy derrick failure while lifting a 327-ton process reactor vessel/1993	X			Curtis P. Cheyney, III, Esq. Swartz, Campbell & Detweiler Philadelphia, Pennsylvania	Williams Crane & Rigging, Inc. (D) Richmond, Virginia
Hydraulic crane boom failure while lifting an 18-ton press/1993-1995	X			Theodore C. Flick, Esq. Houston, Texas	Reliance Insurance Company (P) Philadelphia, Pennsylvania
Collision between truck and train during hauling of an 82-ton turbine generator/1994-1996	X	X	X	Luther P. House, Jr., Esq. Smith Currie & Hancock Atlanta, Georgia and James M. Warden, Esq. Blackwell Sanders Peper Martin LLP Overland Park, Kansas	Black & Veatch (D) Kansas City, Missouri
Collapse of a hydraulic gantry system during lift of a 195-ton generator/1995	X		X	David J. Preller, Jr., Esq. Preller and Preller Towson, Maryland	American Heavy Rigging & Hauling Co., Inc. (D) Richmond, Virginia
Collapse of American 9310 Sky-Horse crane while lifting a 29-ton jack unit/1996	X			Richard Rossi V.P. of Administration	Anthony Crane Rental, L.P. (D) West Mifflin, Pennsylvania
Collapse of American 8460 crane while lifting a building truss/1996-2000	X			William F. O'Rourke, Esq. Filteau, Sullivan & O'Rourke, P.C. Houston, Texas	Anthony Crane Rental, L.P. (D) West Mifflin, Pennsylvania
Two-block-type accident while handling a fiberglass tank/1997	X	X		P.J. Murphey Harmon, Esq. Kroll & Tract LLP Houston, Texas	Consolidated Crane Co., Inc. (D) San Antonio, Texas
Collapse of Manitowoc 4000W crane while unloading a ship/1997-2000	X			John Nelson Managing Director	Van Seumeren USA Inc. (P) Houston, Texas
Rigging failure during lift of a mill housing/1997-1998	X			Thomas J. Duffy, Esq. Duffy and Quinn Philadelphia, Pennsylvania	George Young Company (D) Philadelphia, Pennsylvania

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Subject/Year	Report	Deposition	Courtroom Testimony	Attorney/Client	Representing (P = Plaintiff; D = Defendant)
Crate/rigging failure during lift of a diesel generator set/1998	X			Dana K. Martin, Esq. Hill Rivkins & Hayden, LLP Houston, Texas	Schering-Plough Corporation (P) Madison, New Jersey
Rigging accident while lifting a crated generator set/1998-1999	X			Alan T. O'Brien Capt. Trevor O'Brien & Assoc., Inc. Houston, Texas	Alstom USA, Inc. (P) Hawthorne, New York
Overturing of a Lorain LRT 445 crane/1999	X			Thomas J. Shorall, Esq. Shorall & Stevens Phoenix, Arizona	Anthony Crane Rental, L.P. (P) Phoenix, Arizona
Transportation damage during shipment of a 99-ton transformer/1999	X			Glenn J. Fahl, Esq. Fahl & Takeuchi, P.C. Houston, Texas	Barnhart Crane & Rigging Co. (D) Memphis, Tennessee
Collapse of a hydraulic gantry system during the lift of a 95-tonne press/2000	X		X	Chris Hough, Esq. Fenwick Elliott, Solicitors London, England	4-Point Lift Systems, Inc. (D) Moline, Illinois
Crane boom failure during the handling of a cement silo/2000-2001		X		Thomas J. Shorall, Esq. Shorall & Stevens Phoenix, Arizona	Anthony Crane Rental, L.P. (P) Phoenix, Arizona
Outrigger failure on a Lorain LRT 445 crane/2001-2003	X	X	X	William F. O'Rourke, Esq. Klitsas & Vercher, P.C. Houston, Texas	Anthony Crane Rental, L.P. (D) Houston, Texas
Injury during the operation of a telescopic mast rig/2002-2003	X			Lipscomb Norvell, Jr., Esq. Benckenstein, Norvell & Nathan, LLP Beaumont, Texas	SIE, Inc. (D) Benbrook, Texas
Injury due to a sea-fastening failure on an anchor handling vessel/2003		X		Kurt Micklow, Esq. Banning Micklow Bull & Lopez, LLP San Francisco, California	Vito Giglio (P) San Diego, California
Electrocution due to mobile crane power line contact/2004-2005	X	X		Robert L. Craig, Jr. Esq. Craig, Terrill, Hale & Grantham LLP Lubbock, Texas	Trumble Crane & Rigging, Inc. (D) Lubbock, Texas
Barge-mounted mobile crane accident during bridge demolition/2004	X			James E. Moye, Esq. Moye, O'Brien, O'Rourke, Pickert & Martin, LLP Maitland, Florida	Balfour Beatty Construction, Inc. (D) Atlanta, Georgia

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Rigging failure during handling of trench box/2004-2007	X	X		Kenneth R. Nix, Esq. Nolan Law Group Chicago, Illinois	Carlos Galindo (P) McAllen, Texas
Structural failure of a coke loader boom/2005	X			Curtis D. Collette, Esq. Ramsey & Murray, LLC Houston, Texas	Phillips Crane & Rigging, Inc. (D) Houston, Texas
Accident while unloading a crawler crane from a trailer/2006	X			R. Kenny McCullough, Esq. Barber, McCaskill, Jones & Hale, P.A. Little Rock, Arkansas	Southern Mat Manufacturing, Inc. (D) Hattiesburg, Mississippi
Collapse of drilling rig winterizing panel during assembly/2007	X			Jeffery J. Oven, Esq. Crowley Fleck PLLP Billings, Montana	Black Hills Trucking, Inc. (D) Casper, Wyoming
Collapse of building framing during erection/2007	X			James K. Campbell, Esq. Johnson Robinson Fifield, P.C. Dallas, Texas	TWS Construction Services (D) Pittsburgh, Texas
Accident during steel erection at a school building/2008	X			James K. Campbell, Esq. Johnson Robinson Fifield, P.C. Dallas, Texas	DMG Masonry Construction, Ltd. (D) Arlington, Texas
Wedge socket failure while erecting a large crawler crane/2008	X			Debra McDavid Occupational Safety and Health Administration Fort Worth, Texas	
Drop of a transformer during rail car loading/2008	X			John C. Hart, Esq. Brown, Dean, Wiseman, Proctor, Hart & Howell, LLP Fort Worth, Texas	Oncor Electric Delivery, LLC (P) Dallas, Texas
Rigging failure during rail car unloading/2009		X		Joseph J. Miroballi, Esq. Miroballi, Durkin & Rudin Chicago, Illinois	Roberto Chavez (P) Chicago, Illinois
Utility truck boom pin failure/2009	X			Russell Ramsey, Esq. Ramsey & Murray Houston, Texas	Utility Truck Equipment Mfr., LLC (D) Hewitt, Texas
Sling failure during overhead bridge crane installation/2009	X			Diane L. Lynch, Esq. Law Offices of Mark J. Beachy Richmond, Virginia	American Equipment, Inc. (D) Salt Lake City, Utah

Accident Investigations; Expert Witness Services - David Duerr, P.E. (con't.)

Subject/Year	Report	Deposition	Courtroom Testimony	Attorney/Client	Representing (P = Plaintiff; D = Defendant)
Load shift while upending a transformer with a hydraulic gantry system/2010	X			William J. Cooper, Jr., Esq. Ackerson & Yann, PLLC Louisville, Kentucky	Edwards Moving & Rigging, Inc. (P) Shelbyville, Kentucky
Collapse of a load during transport on dual SPMTs/2010	X	X		James J. Bigoness, Esq. Clausen Miller P.C. Chicago, Illinois	US Steel Corporation (P) Gary, Indiana
Crane overturning while installing an air conditioner unit/2010	X			Alfred R. Valdez, Esq. Houston, Texas	East A Development, L.P. (P) Houston, Texas
Dropped slings during drilling rig assembly/2011	X	X	X	Scott E. Ortiz, Esq. Williams, Porter, Day & Neville P.C. Casper, Wyoming	Black Hills Trucking, Inc. (D) Casper, Wyoming
Sling failure during offloading of laser cutting machine/2011-2012	X	X		Tony R. Krall, Esq. Hanson Lulac & Krall, LLC Minneapolis, Minnesota	United Fire & Casualty Company/ J&D Manufacturing, Inc. (P) Eau Claire, Wisconsin