

Lee A. Swanger, Ph.D., P.E.
Principal Engineer

Professional Profile

Dr. Lee A. Swanger is the Director of Exponent's Miami, Florida, office and investigates issues related to failure analysis of materials and mechanical systems, accident reconstruction, physical and mechanical metallurgy, and thermodynamics, as well as analyzing devices and procedures with respect to patent infringement and patent validity. More specifically, his focus includes analysis of machinery dynamics and kinetics, welding and weldments, powder metallurgy, electrochemistry and corrosion, sleeve bearing design, materials testing, fatigue, and fracture. Additionally Dr. Swanger investigates equipment and process issues in applications including manufacturing facilities, fossil and nuclear power plants, transportation systems, and dry cleaning establishments. His research also includes work in the areas of internal combustion engines and compressor component design and testing, and he received a U.S. Patent for his engine bearing material and fabrication process.

Academic Credentials and Professional Honors

Ph.D., Materials Science and Engineering, Stanford University (*with distinction*), 1972
M.B.A., Marketing/Finance, Cleveland State University, 1982
M.S., Materials Science and Engineering, Stanford University, 1969
B.S., Metallurgy, Case Institute of Technology (*with highest honors*), 1968

Hertz Foundation Graduate Fellowship, 1970–1972

Licenses and Certifications

Licensed Professional Engineer, Alabama, #29848-E
Licensed Professional Mechanical Engineer, California, #M23275
Licensed Professional Engineer, Florida, #37207
Licensed Professional Engineer, Georgia, #PE036205
Licensed Metallurgical Engineer, Louisiana, #34064
Licensed Professional Metallurgical Engineer, Ohio, #44024
Licensed Professional Engineer, Virginia, #15492
Licensed Mechanical Engineer, Wyoming, #11899

Patents

Patent 4,333,215: Bearing Material and Method of Making, issued June 8, 1982.

Publications

Rogers G, Swanger L, Wells C. The Role of testing programs in verifying structural integrity of medium speed diesel generator components. Institute for Electrical and Electronics Engineers Transaction on Nuclear Science 1985 Feb; NS-32(1).

Swanger L. Inhomogeneous thermodynamics and spinodal decomposition. Ph.D. Dissertation, Stanford University, August 1972.

Swanger L, Rhines W. On the necessary conditions for homogeneous nucleation of gas bubbles in liquids. Journal of Crystal Growth 1972; 12:323–326.

Barnett D, Swanger L. The elastic energy of a straight dislocation in an infinite anisotropic elastic medium. Physica Status Solidi (B) 1971; 48:419–428, 1971.

Swanger L, Cooper A, Gupta P. Computer simulation of one-dimensional spinodal decomposition. Acta Metallurgica 1970; 18:9–14.

Presentations

Swanger L. Expert witnesses in patent infringement litigation. Presented to Cleveland Ad-Hoc Patent Litigators Council, Cleveland, OH, December 2004.

Swanger L. Early assessment of product liability claims, the role of the engineering consultant. Presented to TriMas Litigation Conference, Detroit, MI, June 2002.

Swanger L. How to solve your bearings' problems. Presented at Joint Emergency Diesel Generator Owners Group Conference, Chicago, IL, June 1997.

Swanger L, Vogler M, Rau S. Investigation of the reliability of solid aluminum main bearings in emergency diesel generators. 9th International Conference on Structural Mechanics in Reactor Technology, Volume D, Lausanne, Switzerland, August 1987.

Johnston P, Shusto L, Swanger L. Analysis of diesel engine crankshaft torsional vibrations. 9th International Conference on Structural Mechanics in Reactor Technology, Volume D, Lausanne, Switzerland, August 1987.

Swanger L. Advanced techniques of accident investigation. Presented at Occupational Safety and Health Administration Training Institute, Des Plaines, IL, March, June, and September 1986.

Swanger L, Harris D, Johnston P, Derbalian G. Advanced methods for diesel component life prediction. Society for Automotive Engineers Paper 860885, Marine Propulsion Technology Conference, Washington, DC, May 1986.

McCarthy R, McCarthy G, Swanger L. Reliability and service life of steel truck wheels. Annual Reliability and Maintainability Symposium, Las Vegas, NV, January 1986.

Rogers G, Wells C, Swanger L. Design analysis of emergency diesel generator components to establish reliability under operating conditions. 8th International Conference on Structural Mechanics in Reactor Technology, Brussels, Belgium, August 1985.

Swanger L. Bearing materials update. Presented to Society of Automotive Engineers Off-Highway Conference, Milwaukee, WI, September 1981.

Swanger L. Developments in bearings and pistons. Presented at O Motor no Futuro (The Engine of the Future), Sao Paulo, Brazil, September 1980.

Swanger L. Selection of crankshaft materials for optimum bearing performance. Presented to Society of Manufacturing Engineers Conference, CM80-392, Los Angeles, CA, June 1980.

Swanger L. Heavy duty bearings: Materials and process. Presented at Carnegie-Mellon University, Pittsburgh, PA, March 1980.

Reports

Swanger L. Rule 26 Report of Lee A. Swanger In the Matter of Darrell W. Hartman v. Caterpillar Inc., et. al., May 28, 2010.

Swanger L. Rule 26 Report of Lee A. Swanger In the Matter of Innovative Fuel Products, LLC vs. BP Products North America Inc., December 23, 2010.

Swanger L. Report of Lee A. Swanger In the Matter of Questar Gas Management Co. v. Waukesha and Stewart & Stevenson, March 13, 2009.

Swanger L. Expert Report of Lee A. Swanger, Ph.D. P.E. Regarding Invalidity of U.S. Patent No. 6,979,117 and U.S. Patent No. 7, 281,842, K-TEC, Inc. vs. Vita-Mix Corporation, January 15, 2010.

Swanger L. Expert Report on Patent Infringement Pursuant to Rule 26(A)(2)(B) by Lee A. Swanger, Ph.D., P.E., Vita-Mix Corporation vs. Basic Holding, Inc., Focus Products Group, LLC, Focus Electrics, LLC, and West Bend Housewares, LLC, December 17, 2007.

Swanger L. Expert Report on Rebuttal of “Expert Report of Majid Rashidi, Ph.D., P.E.” Dec. 17, 2007 Regarding the Invalidity of U.S. Patent No. 5,302,021 and “Expert Report of Thomas F. Smegal, Jr.” Dec. 13, 2007 Regarding Inequitable Conduct During Prosecution of U. S. Patent No. 5,302,021, Pursuant To Rule 26(A)(2)(B) by Lee A. Swanger, Ph.D., P.E., Vita-Mix Corporation vs. Basic Holding, Inc. f/k/a Back to Basics Products, Inc., Focus Products Group, LLC, Focus Electrics, LLC, and West Bend Housewares, LLC, January 7, 2008.

Swanger L. Rule 26 Report of Lee A. Swanger In the Matter of Horton, Inc. v. NSK Corporation, Inc., American Arbitration Association Case No. 65 181 Y 00320 05, October 9, 2006.

Swanger L. Report of Lee A. Swanger In the Matter of Lloyd Cunningham v. Henry Repeating Arms Co. et.al. pursuant to Federal Rule 26, July 28, 2006.

Swanger L. Expert Report on Patent Infringement Pursuant To Rule 26(A)(2)(B) by Lee A. Swanger, Ph.D., P.E., Fellowes, Inc. vs. Michilin Prosperity Company Ltd. & Intek America, Inc., January 26, 2007.

Swanger L. Expert Report on Rebuttal of January 26, 2007 “Expert Report of Elliot L. Stern, Ph.D., On The Invalidity of U.S. Patent Nos. 6,260,780 And 7,040,559” Pursuant To Rule 26(A)(2)(B) by Lee A. Swanger, Ph.D., P.E., Fellowes, Inc. vs. Michilin Prosperity Company Ltd. & Intek America, Inc., February 26, 2007.

Swanger L. Report of Lee A. Swanger Responsive to Judge Tarnow’s Order of June 5, 2006, James W. Jaikins v. Caterpillar, Inc., Case No. 04-73404, December 3, 2006.

Swanger L. Bearing and Valve Investigation, Wartsila 18V46 – DG-02, Central Electrica Talnique, El Salvador, Prepared for: Inversiones Energéticas S.A. de C.V., September 22, 2009.

Swanger L. Hydrodynamic Crankshaft Bearings in Nordberg Emergency Diesel Generators, Prepared for Engineering Staff, Brunswick Nuclear Plant, Progress Energy, Southport, NC, February 17, 2011.

Swanger L. Rule 26 Report of Lee A. Swanger In the Matter of Douglas P. DeMasi v. United States of America, Case No. 3:09-cv-868-J-32JRK, October 14, 2010.

Swanger L. Response to Expert Report of Michael Thuma Pursuant to Rule 26(A)(2)(B) By Lee A. Swanger, Ph.D., P.E., Sunbeam Products, Inc. d/b/a Jarden Consumer Solutions vs. Homeland Housewares, LLC, et al., Case No. 3:09-CV-00791 REP, October 18, 2010.

Swanger L, McDaniel D. Nordberg ductile iron piston evaluation. Prepared for Progress Energy Brunswick Nuclear Station, January 5, 2006.

Swanger L. Report of Lee A. Swanger, Ph.D., P.E. In the Matter of Verve L.L.C. v Crane Cams, et. al. Reference U.S. Patent 4,850,315, January 24, 2005.

Swanger L. Report of Lee A. Swanger In the Matter of Vine Street, L.L.C. v. James R. Keeling et. al. Rule 26 report regarding Perchloroethylene Dry Cleaning machine function, Eastern District of Texas, September 10, 2004.

Swanger L. Declaration of Lee A. Swanger, Ph.D., P.E. re: U.S. Patent 6,071,062. PODS, Inc. v. Porta Stor, Inc. et. al., September 9, 2004.

Swanger L. Declaration of Lee A. Swanger, Ph.D., P.E. in Opposition to Plaintiffs' Motion for Preliminary Injunction. Honeywell International Inc., et. al. v. ABB Inc., et. al., reference U.S. Patent 5,193,989, May 19, 2003.

Swanger L. Report of Lee A. Swanger, Ph.D., P.E. In the Matter of Air Turbine Technology v. Atlas Copco. Reference U.S. Patent 5,439,346, November 21, 2002.

Swanger L. Report of Lee A. Swanger, Ph.D., P.E. In the Matter of Marshalltown Trowel v. Lowe's re U.S. Patent 5,615,445. March 20, 2001.

Swanger L. Declaration of Lee A. Swanger, Ph.D., P.E. In the Matter of Monte J. Solazzi, et. al. v. Premier Lab Supply, Inc. et. al. Reference U.S. Patents 5,451,375 and 5.630,989, July 20, 2000.

Swanger L, Davy R, Eberly P, Waters L. Teledyne continental camshaft and lifter performance: The influence of lubricating oil on surface conditions. Technical Report to Special Masters in *Gross v. Mobil*, November 1996.

Johnston P, Shusto L, Swanger L. Evaluation of diesel generator Number 1 at Brunswick Nuclear Plant. Failure Analysis Associates, Inc., Technical Report, January 1993.

Swanger L. Investigation of repeated Number 5 main bearing degradation by flashing, Fairbanks Morse opposed piston auxiliary diesel on the *Emory S. Land*. Failure Analysis Associates, Inc., Technical Report, January 1992.

Scheibe R, Kadlec R, Swanger L, Littmann W, Clark R, Johnston P, Hayes D. Generator Bearing condition assessment: Unit DG-1, WPPSS WNP-2. Failure Analysis Associates, Inc., Technical Report, June 1991.

Swanger L, Mercaldi D, Bisbee L, Booth A, Vetter J. DC Motor Control Center 2PB-1 Fire at Fermi II Nuclear Plant. Failure Analysis Associates, Inc., Technical Report, March 1987.

Swanger L, Webb W, Bisbee, L. Failure Investigation of North Hot Reheat Line, Detroit Edison Monroe Unit #1. Failure Analysis Associates, Inc., Technical Report, September 1986.

Swanger L, Vogler M. Investigation of surface scoring of main bearings: Fairbanks Morse 38TD8-1/8 diesels at Fermi II Power Plant. Failure Analysis Associates, Inc., Technical Report, June 1986.

Swanger L. Design review of connecting rod bearing shells for Transamerica Delaval Enterprise Engines. Failure Analysis Associates, Inc., Technical Report, March 1984.

Swanger L, Bisbee L, Webb W. Evaluation of piston and bearing from the Baltimore Gas and Electric Hunt Valley Inn cogeneration system. Failure Analysis Associates, Inc., Technical Report, June 1992.

Swanger L. Review of performance problems, Occidental Chemical M/V Julius Hammer and M/V Frances Hammer, Colt-Pielstick, PC 2.5 diesel engines. Failure Analysis Associates Report, April 1986.

Academic Appointments

Adjunct Professor, Mechanical and Metallurgical Engineering, University of Miami

Prior Experience

Director of Research and Development, Engine Parts Division, Imperial Clevite, 1979–1983

Lecturer, Mechanical Engineering Department, Cleveland State University, 1978–1982

Project Manager, Gould Labs for Materials Research, Gould Inc., 1975–1979

Associate Sr. Research Metallurgist, General Motors Research Labs, 1973–1975