



JOSEPH B. ZICHERMAN, Ph.D., SFPE
Fire Science Engineer

SUMMARY

Dr. Zicherman is a scientist specializing in fire dynamics, the fire performance of materials and systems and selected problem areas relating to polymers, paper and wood. The emphasis in his work has been on the performance of complex systems such as buildings and their environments, and rail transportation vehicles and combustible furnishings and components. His work interests include causes and the growth and spread of fires as well as the performance of materials and sub-systems and systems as part of such projects. Fire related codes and standards are also an area of his specialization. His clients include research organizations, government agencies, manufacturing companies and trade associations. Another significant focus of Dr. Zicherman's work includes investigative work related to retrospective analysis of fire related phenomena.

EDUCATION

Ph.D. University of California, Berkeley, CA (1978)

Major: Wood Science and Technology

Minor: Polymeric Materials/Fire Performance of Materials

MS. - North Carolina State University, (1970)

Major: Wood and Paper Science

Minors: Polymeric Materials/Experimental Statistics

BS. - SUNY College of Forestry (1967)

Major: Wood Products Engineering

PROFESSIONAL EXPERIENCE

May 2015 – present

Senior Fire Science Consultant, Berkeley Engineering And Research, Inc.

1977 – 2015

Founder and Senior Fire Science Consultant, Fire Cause Analysis.

Areas of Dr. Zicherman's expertise include fire science and fire investigation, polymers and paper technology (including aging, coatings and adhesives) with an emphasis on polymer based building products, construction technology and rail passenger vehicle fire performance and Wildland/urban interface fire problems.

January 1981-March 1981 & January 1983- June, 1986

Lecturer, University of California, Berkeley. College of Natural Resources, Forest Products Laboratory.

Lecturer (1/81-3/81 and 1/83-3/83) in Wood Physics. Invited position teaching the graduate course in Wood Physics. Also, Associate Research Wood Technologist dealing with building products technology and the fire performance of wood.

1979-1982

Assistant Research Engineer, U.C. Berkeley, College of Engineering, Civil Engineering Dept., Fire Test Facility. Research position involving fire performance evaluation and research in products and building technology.

1973-1978

Assistant Specialist for coatings and adhesives technology, U.C. Berkeley -Forest Products Laboratory. Basic and applied research in whole and composite wood products and polymers.

1970-1973

Chemist and Section Head, D. P. Joyce Coatings and Resins Research Center, Glidden Coatings and Resins Group, Division SCM Corp., Strongsville, Ohio.

Assignments dealt with manufactured housing, coatings systems including radiation cured and 100% solids finishing systems for a variety of substrates. Section head of the powder coatings group with responsibility for both basic and developmental research in that area. Designed and supervised pilot manufacturing operations and specifications for production facility. Interfaced with equipment and raw materials suppliers as well as customers and licensees. Traveled in Europe doing technology assessment in polymers, coatings and plastics areas.

1967-1970

Research Assistant, North Carolina State University:

Conducted research under Forest Service Grant award for activities related to wood coatings and ash content.

SIGNIFICANT ACTIVITIES

Recipient - with co-authors - of Journal of Failure Analysis and Prevention 2011 “Best Paper Award” for paper entitled Failure Analysis and Prevention of Fires and Explosions with Plastic Gasoline Containers (Volume 11, Page 455-465)

Conducted System-wide Fire Safety Assessment update for the SCRRA Metrolink System. Consistent with 49.CFR238, FCA systematically reviewed fire safety requirements and associated performance of the Southern California Commuter Railroad for the period 2001 to 2011.

Project Manager – 2009-2011 – Project: Predicting Fire, Heat and Smoke Release Rates of Railcars for the SFMTA Central Subway Project – Client AECOM for San Francisco MTA

Developed “Southern California Wildland Urban Interface Data Set” under contract to the US Department of Commerce NIST Building and Fire Research Lab under Grant No. 60ANB7D6151.

Created Fire Management Plans and Vegetation Management Plans for projects in Southern California Wildland and Wildland Urban Interface Areas for the Long Beach School District (Student Camp in the San Gabriel Mountains) and the Chandler School in Pasadena.

Addressing passenger Rail fire safety issues including conducting Fire Safety Analyses of both powered and un-powered rail passenger vehicles. Vehicle fire safety analyses, as well as analyses of maintenance and operating buildings for fire safety. including Recent work includes peer reviews of a new self powered LRV design for Austin, Texas as well as analyses of the anticipated fire performance of a transit station design in East Los Angeles requested by regulators.

Principal Investigator for the office of the California State Fire Marshal conducting an evaluation of proposed technologies to mitigate urban/wildland interface fire problems. This project resulted in two reports and a presentation to GAO panel at National Academy of Sciences, Washington D.C., in August 2004 on Urban/Wildlife Fire problems.

The reports resulting from these activities are available at the following:

- Technical Rpt: <http://osfm.fire.ca.gov/pdf/regulations/UWIRpt1-ALL091004.pdf>
- Cost Benefit Study: <http://osfm.fire.ca.gov/pdf/regulations/UWIC-BRpt091004.pdf>

Consultant to the State of Rhode Island District Attorney task group charged with the investigation of the fire incident at “The Station” nightclub in Warwick RI. Provided testimony to the Statewide Grand Jury investigating the incident - 2005.

Co-Author: “Origin and Cause of Fire,” 2008. in Scientific Evidence in California Criminal Cases, Ch 12, pp. 505 - 590, Published by the California Bar Association – Continuing Education for the Bar (CEB), Oakland, Ca.

Co-author: text section on Post Fire Analysis [“Failure Analysis and Analytical Tools”] in the “Users Manual for NFPA 921 published jointly by the NFPA and the IAAI - 2003 & 2007 editions

Member - Participant – NFPA Research Foundation Phase I and II programs on Sub-lethal Exposure to Fire Smoke. Program addressed ISO initiatives related to “Fire Threat to People and the Environment”

Co-author in HUD funded project "Fire Performance of Archaic Building Materials." Developed a rating system implemented in all of the model US building codes, by Federal agencies and included in various NFPA codes to assess the anticipated fire performance of existing building materials in the field – originally completed 1982; Managed revision and updating program – 1999 under contract to the National Institute of Building Sciences [NIBS], Washington, D.C.

Editor and Contributing Author – Council on Tall Buildings in Urban Habitats (Lehigh University) High Rise Fire Safety Monograph - 1992

Fire-safety contributor to preparation of “Building Safety Assessment Guidebook” and “Building Safety Enhancement Guidebook” by the Council on Tall Buildings in Urban Habitat of Lehigh University. The workbook format of these documents was developed to assist high rise building owners and managers in assessing fire safety levels at their properties following the 9/11 World Trade Center incident - 2001-2002. Presented to the National AIA Meeting, San Diego, Cal – Nov. 2003

Participation in the FRA funded program "Experimental application of fire hazard analysis for US Passenger Train Systems" as Peer Review Committee member and consultant to the Center for Fire Research, NIST – 1996-2000

Consultant to the Volpe Center, US-DOT, Cambridge, Mass. on matters related to fire safety of rail passenger vehicles for the Federal Railway Administration.

Participation in investigations/forensic evaluations of high rise fires including those at the MGM Grand Hotel - Las Vegas, The First Interstate Bank Building fire - Los Angeles, The Cathedral Hill Hotel Fire - San Francisco, the DuPont Plaza Hotel Fire - San Juan Puerto Rico, the One Meridian Plaza fire, Philadelphia.

Activities related to wild land/ urban interface fire problems including acting as a consultant to the City of Oakland conducting post fire assessments following the Oakland Hills conflagration. Significant work in this technical area has also included co-authorship of a report for the East Bay Regional Park District on wild land/urban interface fire mitigation and work on other wild land fires in Southern California and the Rocky Mountains.

Development projects related to exterior durable fire retardants for wood and wild land substrates.

Initial development with the 3M Corporation Technical Ceramics Group of AUTO CAD capable Product selection software systems for use in fire protection features design and specification for construction.

Participation in investigations/forensic evaluations of major industrial facility fires including those at the Stapleton Airport fuel facility - Denver, CO, Mountain Cold Storage - Tacoma, WA., Brewster Heights packing facility, Brewster WA., Dole Foods Facility, Yuma, AZ., Japanese National Telescope Facility, Mauna Kea, HI., Safeway Facility, Richmond, CA., major smoke detector malfunction case, Davenport, IA; KFX Synfuel facility – Gillette Wy., Rombauer Winery Fire, Calistoga, Ca., Tri-City Foods Fire, Washington .

Participation in maritime and aircraft related fires including the DTB - 40 fire Honolulu and the Ricky Nelson Plane Crash., discharge by oxygen cylinders in-transit, Continental Airlines/Federal Express

Design Consultant addressing insulation system configuration and materials utilized at the Keck Observatory, Mauna Kea, HI. Client: joint UC Berkeley/Cal Tech design team.

Principal investigator [1995 through 2009] - Post Earthquake Fire Investigation Program - Sponsor – FEMA as grantor to the Natural Hazards Research Center, University of Colorado, Boulder, CO.

Chairman of ASTM E.5 Subcommittee E.5.17 [1996 thru 2002] addressing fire test standard development for transportation applications. During tenure was responsible for the successful development of a state of the art Fire Hazard Assessment Methodology for Rail Transportation Vehicles [ASTM E-2061–03] as part of ASTM Committee work approved by ASTM E.05 Main Committee in December 1999.

Task group chairman charged with evaluation of the enlargement of scope of the vehicles section of the NFPA 130 [rail passenger and fixed Guideway vehicle] Standard to encompass intercity and commuter rail vehicles in conjunction with the American Public Transit Association and the Federal Railway Administration.

Authorship of guides and manuals reviewed by the model code agencies developed to detail safe means to install plastic pipe, tube and conduit in fire rated construction for trade associations and corporate clients in industry.

Continuing member of International Code Council as well as member and participant in BCMA and ICBO East Bay Chapter working groups that developed the initial building code language governing the installation of plastic pipe tube and conduit in the 1980's.

Dispute resolution contribution related to combustibility issue to the Los Angeles Metro Blue Line Light Rail Project vehicles. Also work on "Combustible Contents" Issues related to the LAMTA Green Line – 1996-1999.

Development of techniques for the application of Rate of Heat Release technology for rail passenger projects in San Juan, PR and Los Angeles, Ca. and Emeryville, CA.

Development of techniques for the application of Rate of Heat Release technology for building applications including atrium applications consistent with requirements of the Uniform Fire Code including the Chiron Headquarters in Emeryville, Ca.

Consultant to US Consumer Products Safety Commission for subjects relating to Omega O-ring sprinkler design issues – 2001.

Principal Investigator – US DOT-FRA mandated Fire Hazard Assessments prepared for commuter rail systems in Chicago, Los Angeles and San Francisco – 2001.

Principal Investigator – US DOT-FRA mandated Fire Hazard Assessments prepared for builders of rail passenger vehicles including commuter cars and engines for push-pull applications – 2001-2003

Project Manager – Conducted Performance Based Hazard Assessment [on a Pro-Bono basis] for the University of California NCAA Champion Intercollegiate Rowing Program to address concerns associated with construction of a new boat house in a remote area – 2002 [*Go Cal Bears!!!!!!*].

SERVICE TO PROFESSIONAL SOCIETIES-TECHNICAL COMMUNITY/MEMBERSHIPS

University of California (Berkeley), Forest Products Laboratory –Technical Advisory Board; member from 1999-2004, Chairman 2000-2001.

United States Consumer Products Safety Commission – SGE (special government employee) dealing on voluntary basis with problems involving fire safety and consumer products at the request of the CPSC technical staff 1992 thru 1996 focusing on furniture related flammability issues. Consultant to CPSC on recall issues regarding problems with o-ring based sprinkler systems 2000-2001.

Editor & Co-Chairman of Committee 8A--Fire; Council on Tall Buildings and Urban Habitat, Lehigh University, Bethlehem, PA – thru 1992

Society of Fire Protection Engineers (SFPE) - Member

Underwriter's Labs – Member - Standards Technical Panel. Fire Tests of Pneumatic Tubing and Plastic Sprinkler Pipe for Flame and Smoke Characteristics, STP 1820

American Society for Testing Materials (ASTM)

Committee E-05-Fire Test Standards – Member at large – Executive Committee;
Member Subcommittees and associated task groups as listed below:

5.22 Surface Burning

5.11-Fire Retention

5.22.02 Mounting Methods for the Steiner Tunnel Test

5.14 External Fire Experiments

5.15 Furnishings and Contents
5.17 Transportation (Former Chairperson thru 2002)
5.44/5.33 Fire Safety Equipment
5.41 International Standards for Fire Ignition and Growth
5.42 Fire Containment
5.43 Fire Threat to people and the Environment
5.91 Planning and review

Committee E-06-Performance of Buildings.

Member Subcommittees and associated task groups as listed below:

6.21 Sprayed on Fire Protective Materials (.01 TG)
6.77 High Rise External Evacuation Devices

Committee ASTM-F15 Consumer Products.

Member Subcommittees and associated task groups as listed below:

F15.10 Studies for Flammable Liquid Containers

Committee ASTM-F8-Sports Equipment and Facilities

American Academy of Forensic Sciences – Member through 2000

American Public Transit Association – Passenger Rail Equipment Safety Standards (APTA-PRESS)
System Safety Committee participant.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, (ASHRAE) -
Associate Member, since 2004-2008.

Journal of the International Association of Arson Investigators - Editorial Board Member, reviewer,
contributor

National Fire Protection Association - General Member

Member of NFPA- 130 Committee on Rail Rapid Transit Fire Safety Issues

Task Group Member - NFPA Fire Test Committee - degrees of combustibility.

Member – Research Advisory Council on Post Fire Analysis of the National Fire Protection
Association Research Foundation 2000-2002.

National Institute of Building Sciences (former member)

Consultative Council Member

Insulation Task Force

Common Building Code Format Committee

National Institute of Standards and Technology (NIST)

Center For Fire Research/Building and Fire Research Laboratory -

Member of Peer Review Committee Study Group related to Fire Safety

Regulations of Passenger Trains - FRA sponsored group (1995-1996)

International Code Council (ICC) – Professional Member

International Conference of Building Officials (ICBO) – Professional Member and

Member -Fire and Life Safety and Fire Risk Assessment

Committees Advisory Panels (1982-1991)

Building Officials & Code Administrators Int'l Inc. (BOCA)- Member

Southern Building Code Congress International (SBCCI)- Member

Board for the Coordination of the Model Codes (BPMC)

Member of Task Group on Non-Combustibility and Degrees of Combustibility (& associated groups)

Member of Task Group on Penetrations and Fire Stopping - 1982-86

International Association of Plumbing & Mechanical Officials (IAPMO) - Member

Society of Plastics Engineers (SPE) – Member (1980-2000)

Forest Products Society - Trustee, Northern California Section - 1982-1986 and 1998-2002; member through 2002.

Society For Wood Science and Technology – Member through 2002.

Sigma Xi – Scientific Honorary – 1978-2000

East Bay Regional Park District - Member - Fire Prevention Committee

International Association of Arson Investigators - Member

California Conference of Arson Investigators – Member

GRANT AND PUBLICATION REVIEWER

United States Dept. of Agriculture Competitive Grants Program - grant reviewer

Journal of Fire & Materials - reviewer

Fire Technology - reviewer

NFPA Fire Journal – reviewer

Journal of the International Association of Arson Investigators - Editorial board member and reviewer

Forest Products Journal - reviewer

Journal of Coatings Technology - reviewer

Wood and Fiber Science - reviewer

USDA Forest Products Laboratory, University of Wisconsin - grant reviewer

Chemical Engineering Magazine - reviewer

PUBLICATIONS, REPORTS

Failure Analysis and Prevention of Fires and Explosions with Plastic Gasoline Containers, 2011.

Journal of Failure Analysis and Prevention: Volume 11, Issue 5 (2011), Page 455-465. Co-authors - Glen Stevick, David Rondinone, and Allan Sagle.

“Portable Plastic Gasoline Container Explosions and Their Prevention” **Society of Forensic Engineers and Scientists**, 2010, with Glen Stevick, David Rondinone, and Allan Sagle.

<<http://www.forensic-society.org/whitepapers.html>>

“SFPE Classic Review Papers(s): Fire performance under Full-scale Test Conditions – A State Transition Model and Coupling Deterministic and Stochastic Modeling to Unwanted Fire.” by Robert Brady Williamson, 2009. J. Fire Protection Engineering.

“Development of a UWI Data Set and Its Uses.” 2009, with Ben S. Autry. Proceedings: Fire and Materials Conference, PP. 181, San Francisco, Calif.

Final Report: Southern California Urban/Wildland Interface Dataset (SCUWI): Scoping and Resolution Study. 2008, Ben S. Autry, co-author. Prepared for the NIST Building and Fire Research Lab; Funding - Cooperative Agreement 60ANB7D6151

“Origin and Cause of Fire,” 2008. In **Scientific Evidence in California Criminal Cases**, Ch 12, pp. 505 - 590, Published by the California Bar Association – Continuing Education for the Bar (CEB), Oakland, Ca.

“Clark County and RJA – Say it isn’t so!” 2008. Letter to the Editor, NFPA Journal, Vol. 102, No. 4., pp 8. July/August.

“Forensic Evaluation of Textile Flammability.” 2009, with M.M. Hirschler and P.Y. Umino. Fire and Materials, 33:345-264.

“Is Pyrolysis Dead?” 2006, with Peter Lynch., Fire & Arson Investigator. Vol. 56, No. 3.

“Is there a time bomb in the sofa?” 2005. Co- author Robin Foster. Trial: Journal of the Association of Trial Lawyers of America. Vol. 41, No. 12.

“Fire at the Urban Wildland Interface: Performance of California Homes.” September 04. California Department of Forestry and Fire Protection.

“Fire at the Urban Wildland Interface; Cost Benefit Evaluation.” September 2004. California Department of Forestry and Fire Protection.

“Plastic Pipe and Fire Safety”, 2004. Fire Protection Engineering, Spring Vol. 22. Society of Fire Protection Engineers, Washington, D.C.

“Unconventional Emergency Evacuation Measures and Procedures” 2003. NFPA Journal, November/December.

“Plastic Pipe and Fire Safety”, 2003. PM Engineers, October 2003. Troy, MI.

”Fire Performance of Foam Plastic Building Insulations”, 2003, Journal of Architectural Engineering, September 2003.

“Fire Performance of Electrical Insulating Materials Used in Fluorescent Lighting Fixtures”, 2003. Journal of the Int’l Assoc of Arson Investigators. Vol. 53 No 3. (Also published in CCAI’s “The Fire-Arson Investigator Newsletter”, August 2004.

“Tall Building Fire Safety–Post 9/11”, 2003. CTBUA Review, Jan-March 2003, Council on Tall Buildings in an Urban Habitat.

“Polymer Products in Rail and Bus Applications” 2003. In Proceedings - Fire & Materials 2003, PP 259. San Francisco, CA.

“*Building Safety Assessment Guidebook*” and “*Building Safety Enhancement Guidebook*,” [contributor], 2002. Post 9/11 workbooks developed by the Council on Tall Buildings in Urban Habitat, CTBUH, Lehigh University, Lehigh, Pa.

Technical Note: The Fire Performance of Electrical Insulating Materials Used in Fluorescent Lighting Fixtures. *Fire and Materials*, 25, 209-213, 2001.

Assistance Needed on Sprinkler Project [relating to Central Sprinkler Company glass bulb sprinkler head performance], 2001. Letter to the Editor – *Fire and Arson Investigator*, 51(4) pp 6-7. With F. Hsu. (Note: Same letter appeared in the July 2001 issue of “*Fire-Arson Investigator*”, published by the California Conference of Arson Investigators).

Paper: Permanence, 2001.(in) *Encyclopedia of Materials: Science and Technology*, F.C. Beal Editor, PP 6678-6682, Elsevier Press, London, England. With R.A. Kundrot

Contributions to Final Environmental Impact Report for CPVC Pipe Use in Potable Water Piping in Residential Buildings, 1998. California Department of Housing and Community Development, State Clearinghouse Number: 970820040. See Section 5. “Hazards in Fire”, pp. 69. [see also State of California Expanded use of Plastic Pipe EIR – Appendix I of HCD-227

Recommendations for Revising the Fire Safety Performance Requirements in Federal Railway Administration Notice of Proposed Rulemaking (NPRM) for Passenger Equipment, September 23, 1997. Prepared for the Volpe National Transportation systems Center, USDOT, 9.98.

Application of Heat Release Technology to the Design of Rail Rapid Transit Vehicles, June, 1998. In Proceedings – Fire Risk and Hazard Assessment Research Application Symposium, National Fire Protection Research Foundation, SF, Cal.

"Finish Ratings of Gypsum Wallboards", 1998. *Fire Technology*, V. 34, No.4 (pp356).

Guest Editorial, 1997. *Jour Int'l Association of Arson Investigators*. V. 48, No. 2 (pp 6).

Letter to the Editor, Re: Combustion Toxicity data Interpretation, *Fire & Materials*, Vol. 16. (1993).

"Fire Safety of PVC Raceways and The Model Building Codes", Carlon Electrical Products, Cleveland, Ohio, First Edition, 1992, second edition, 1993.

"Fire Performance of Fire-Retardant Wood Fiberboard Ceiling Tile", 1992 - *Fire & Materials*, Vol 16 (Co-authored by D. Allard, Ph.D.)

"PC-based Product-selection Systems to Enhance Fire Safety in Construction", *Fire and Materials*, Vol. 16, 53-60, 1992.

"Is PVC Piping Firesafe?", *Building Standards*. September-October, 1992. PP. 12-17.

Editor, "Fire Safety in Tall Buildings", 1992. McGraw-Hill, Inc, NYC, NY.

Forum - *Issues in Science and Technology*, Volume VIII Number 2, Winter 1991-92. "National programs in science and technology".

"Enhancement of Fire Safety in Buildings: Microcomputer Systems for Selecting and Specifying Products". in proc. of Sixteenth International Conference on Fire Safety, Millbrae, CA, January 17, 1991. By Joseph Zicherman, David Frey and Lon Katz, IFT; Richard Licht, Kristen Jensen and Tony Schommer, 3M Company.

"Plastic Pipe in Fire Resistive Construction", The Plastic Pipe and Fittings Association, Glen Ellen, Illinois, first edition, 1985, second edition, 1991.

"Performance of Plastic Plumbing and Electrical Products in Fire Resistive Assemblies", 1992. In Fire Hazard and Fire Risk Assessment, ASTM STP 1150, PP 66-83. Presented at the ASTM Symposium on Fire Hazard and Fire Risk Assessment. San Antonio, TX, December 3, 1990.

"Fire Initiation Propensities of City of Sacramento Compost Materials Used in

Landfill Operations". Prepared for City of Sacramento Department of Public Works Solid Waste Division. December 3, 1990.

"Is PVC Piping Firesafe?", 1990. NFPA Fire Journal, Nov/Dec, 1990 (Vol 84, No. 6).

"Engineering Report on Fire Resistive Floor-ceiling Assemblies with Carlon Tubing and Conduit", 4/90. Submitted to the National Evaluation Service of CABO on behalf of Carlon, Cleveland, Ohio.

"Fire and Wood" - 1989; in: Concise Encyclopedia of Wood & Wood - Based Materials, Editor - Arno P. Schniewind, Pergamon Press, New York.

"Compartment Tests of Polyurethane Foam Seating Assemblies", December 1989-Fire and Arson Investigator (Vol 40, #2) (Co-Authored by D. Allard, Ph.D.)

"When to Call the Scientific Expert". The Function of Experts in Fire/Failure Related Cases-Newsletter of Trial Techniques Committee, Tort and Insurance Practice Section, American Bar Association - Winter, 1988.

Book review: "Plywood & Adhesive Technology" by Terry Seller, Jr. - 1987. Wood and Fiber Science, Jan. 1988 (Vol. 20, No.1).

"Fire Performance of Plastic Pipe, Tube and Conduit" - In Proceedings: Fire Retardant Chemicals Association Fall Conference, "Fire Safety Progress in Regulations, Technology and New Products." October 18-21, 1987, Monterey, CA.

"Compartment Tests of Polyurethane Foam Seating Assemblies", May 1988 - Fire Technology. (Vol. 24, No. 2) (Co-authored by D. Allard, Ph.D.)

"Wood and Fire", 1986; in: ENCYCLOPEDIA OF MATERIALS SCIENCE AND ENGINEERING, M.G. Bever, editor-in-chief, Pergamon Press, New York, (Pages 5377-5382).

"Are Less Sensitive Detectors Available?", 1986. Fire Journal, (8,5 [11]) - Letter To The Editor.

PLASTIC PIPE IN FIRE RESISTIVE CONSTRUCTION, 1st Edition, 1985. Installation manual prepared for the Plastic Pipe and Fittings Association, Glen Ellyn, IL. (2nd edition 1990.)

UNIFORM CODE FOR BUILDING CONSERVATION, 1985. Guideline U.C.B.C. -2 - Fire Ratings of Archaic Building materials, ICBO, Whittier, CA.

CODE FOR EXISTING BUILDINGS, 1984 (1st Ed'n). BOCA Int'l, Country Club Hills, Ill. (Includes "A Guideline for Assessing the Fire Performance of Archaic Building Materials" cited above.)

"Plastic Pipe and Fire Safety", 1985. Report to the Plastic Pipe and Fittings Assoc., Glen Ellen, Ill. [see also California EIR – 1998 – Appendix I of HCD-227].

"Report of the Blue Ribbon Fire Prevention Committee for the East Bay Hill Area Urban-Wild land Interface Zone", East Bay Regional Park District, Oakland, California, February, 1982

Review of Proceedings: 5th International Conference in Organic Coatings Science and Technology", ed. by G.D. Parfitt and A. V. Patsis. Journal Coatings Technology, 1982. 54 (686) 72.

"Fire Testing and Performance of Small Particleboard Panels", 1981. Journal of Fire and Flammability, 13 (240-249) (with R. B. Williamson).

"Microstructure of Wood Char: Part II-Fire Retardant Treated Wood", 1981, Wood Science and Technology, (19-34) (with R. B. Williamson).

"Microstructure of Wood Char: Part I - Whole Wood", 1981. Wood Science and Technology, 15 (237-249) (with R. B. Williamson).

"Fire Endurance of a Particleboard Decked Floor/Ceiling Assembly", 1981. Forest Products Journal, 31 (1) 24.

"A Guideline for Assessing Fire Related Performance of Archaic Construction Materials and Assemblies", Aug. 1979. A Report to the National Institute of Building Sciences, Washington, D. C. (with R.B.Williamson, et. al.).

"Cellulose Based Insulations Studied", San Francisco Examiner, 7/23/78 and 7/30/78 (with F. Fisher).

"Fire Protection Problems Associated with Cellulose Based Insulation Products", Society of Fire Protection Engineers, Technology Report 787, Boston, MA, 1978 (with F. Fisher).

"A Study of Wood Morphology and Microstructure in Relation to its Behavior in Fire Exposure", Ph.D. Dissertation, U. C. Berkeley, 1978. (Available from University Micro films, Ann Arbor, Michigan.)

"SEM X-ray Analysis of Pentachlorophenol in Treated Wood", Wood and Fiber, 7 (2) 110, 1976.

"Urethane Systems for Composite Products", Forest Products Journal, 25 (6) 21, 1975

"Instrumental Approaches to Powder Coatings Characterization", J. Paint Technology, 46 (591), 1974 (with R. M. Holsworth).

"Finishing Southern Yellow Pine", Contributions to Chapter 24, Vol. II of Utilization of the Southern Pines, Editor: P. Koch, Agricultural Handbook No. 420, U.S.D.A. Forest Service, 1971.

"Recycled Paper; Does Everyone Know It's Here?" The Clevelander, 3/72. (Published four times a year by the Greater Cleveland Growth Association.)

"Design of Resin Systems for Powder Coatings" American Paint Journal, 5/1/72. (Also available in reprint form SME, Detroit Michigan.)

"Scanning Electron Microscopy of Coatings on Wood", J. Paint Technology, 44 (570), 1971 (with R. J. Thomas).

"Distribution of Loblolly Pine Ash Residue", TAPPI, 54 (10) 1727, 1971 (with R. J. Thomas).

"Painting of Southern Pine", Forest Products Journal, 19 (4), 1969.

UNIVERSITY OF CALIFORNIA REPORTS

"Polyurethane Adhesives for Hardboard: Review of Literature and Direction for Research". Progress Report No. 1, December 1973. U.C. Forest Prod. Lab - Tech. Report No. 35.01.119 (with B. Collett).

"Polyurethane Adhesives for Hardboard: Preliminary Evaluation and Testing of Candidate Adhesive Systems". Progress Report No. 2, May 1974. U.C. Forest Prod LabTech. Report No. 35.01.119.

"Fire Retardancy of Composite Wood Products: Polybor Dicyandiamide-Melamine Resin System as a Fire Retardant in Flakeboard". Final Report September, 1974. U.C. Forest Prod Lab – Tech. Report No. 35.01.135 (with Tinh Nguyen and K.T. Wu).

"Research in Fire Retardance of Flakeboard Products", Progress Report 1, 2 and 3. (December 1974, February 1975, March 1975) U.C. Forest Prod. Lab - Tech. Report No. 35.01.135.

"Microstructural Examinations of Non-Conventionally Bonded Wood", Internal Report No. 36.01.93. December, 1975. U.C. Forest Products Lab.

"A Study of Wood Morphology and Microstructure in Relation to its Behavior in Fire Exposure", April, 1978. Forest Products Laboratory Report, #FRG 7814, University of California, Berkeley.

"Full-Scale Fire Tests of BART (Bay Area Rapid Transit) Materials, 3/79. ES7578. Service-to-Industry Report No. 793, Fire Test Lab., U.C. Berkeley. Prepared for the Calif. Public Utilities Commission. (with R. B. Williamson and F. Fisher).

"U.L. 790 Class-B Roof Tests of Redwood Decks", July, 1980. Fire Test Lab, University of California, Service-to-Industry Report No. 81-6.

PRESENTATIONS

"Investigating Fires Aboard Passenger and Freight Trains and Railroad Rights of Way." 4/2011, with Dennis Field. Presentation to Wildland Fire Litigation Conference, San Diego, California.

"Development of a UWI Data Set and Its Uses." 2009, with Ben S. Autry. Presentation to the Fire and Materials Conference, San Francisco, Calif. "Forensic Evaluation of Fabric

Flammability." 2006, with M.M. Hirschler and P.Y. Umino. Presentation to the 17th Annual Conference on Fire Retardants, Stamford, Connecticut, 3/06.

Presentation to GAO panel at National Academy of Sciences, Washington D.C., in August 2004 on Urban/Wildlife Fire problems.

Presentation to the Technical Compliance Unit of New York City's Department of Buildings, June 24, 2004 on Plastic Pipe, Fire Safety and the International Building Code.

Experimental study of materials exposed to electrical resistance heating as a potential cause of fire, January 2001. Fire and Materials 2001 Conference, San Francisco. With Kevin Brown and Frank Hsu.

Update on Codes, Standards and Regulations Affecting Fire Performance of Passenger Rail Vehicles, May, 2000. Rail Transportation Section Meeting, NPFA Annual Session, Denver, CO.

Use of Heat Release Information in the Design and Regulation of Rail Passenger Vehicles, December, 1999. ASTM E.05 Research Review, New Orleans, La.

Plastic Pipe in Fire Resistive Construction, Sept 1999. Continuing Education presentation to the International Code Consortium membership meeting St. Louis Mo.

Fire Risk Assessment for Rail Passenger Vehicles, Oct 1999. APTA-Press (American Public Transit Assoc.-Passenger Rail Equipment Standards) Meeting, Wilmington, DE.

Application of Heat Release Technology to the Design of Rail Rapid Transit Vehicles, June, 1997. Fire Risk and Hazard Assessment Research Application Symposium, National Fire Protection Research Foundation, SF, Cal.

"Research on the Use of Polymer Foam Insulation in Construction". Soc. of Fire Protection Engineers (SFPE) Northern CA-NV Section meeting, Berkeley, CA 10/17/97.

"Shipboard Fire! A discussion of Fire Cause and Origin in the Maritime Context with Case Studies". International Association of Defense Counsel (IADC) meeting, Pebble Beach, CA 2/97 (with D. Perkins, CFI).

"Fire Safety Issues Associated with Spray Polyurethane Foam". Society of Plastics Industries - Spray Polyurethane Foam Division meeting, Anaheim, CA 2/97.

"Rail Rapid Transit Vehicle Fire Safety Design Issues". Society of Fire Protection Engineers, N. Calif. Chapter meeting, Berkeley, CA 9/95.

"Jack London's Wolf House Fire". American Academy of Forensic Sciences, Nashville, Tenn, 2/96, with Robert N. Anderson, Ph.D. et al.

"Fire Performance of High Rise Building" presented to the Arizona Structural Engineers Assoc. (ASEA), Phoenix, AZ 1/96.

Guest Instructor: Fire Science Fundamentals and Fire Investigation, Arizona Conference of Arson Investigator's Seminar, Phoenix, AZ 7/95.

"Assessing the Fire Performance of Rail Passenger Vehicles-A Changing Technology". Presented at the NFPA & Rail Transportation Systems Mtg, Denver, CO, May, 1995.

"Fire Performance of Rail Transit Passenger Vehicles". Presented at the Annual NFPA & Rail Transportation Systems Meeting, San Francisco, CA - May, 1994.

"Performance of Structural Systems and Building Sub-Systems to Threats Posed by Fire and Smoke". Presented to the Structural Engineers Association of Oregon, 11/94

Guest Instructor: Teaching Fire Science Fundamentals with State Fire Marshal Personnel. Arson 2A Fire Course, Napa, CA. Nov. 1994.

Two-day seminar presented to the Santa Clara County Arson Task Force on January 4 & 5, 1993. Topic: "Advanced Concepts in Fire Investigation".

Wood Building Research Center of the University of California Forest Products Laboratory, Emeryville, CA; Invited Speaker-Topic: "Fire Performance of Wood". May 4, 1992.

Guest Instructor: Advanced Fire Science Analysis Seminar, [IAAI] - Boise, Idaho; August 14, 1992. International Association of Arson Investigators, Inc. Topic: "Recreating the Fire Scene Through Modeling & Animation".

"Enhancement of Fire Safety in Buildings: Microcomputer Systems for Selecting and Specifying Products". Presented at the Sixteenth International Conference on Fire Safety, Millbrae, CA, 1/17/91. By Joseph Zicherman, David Frey and Lou Katz, IFT; Richard Licht, Kristen Jensen and Tony Schommer, 3M Company.

"Cost Benefit Studies of PVC Pipe Tube and Conduit" Presented at the CSI-Construction Specifics Institute - Annual Meeting, San Diego, CA July, 1990

"Fire Performance of Plastic Pipe, Tube & Conduit" - presented to the Fire Retardant Chemicals Association - Fall Technical Conference, 10/18/87 - Monterey, CA.

"Fire Performance of Contemporary Building Products and Furnishings", East Bay Arson Round Table - CCAI, Berkeley, CA, 10/15/87.

"Fire Performance of Electric Raceways"-Testimony presented to Seattle Electrical Code Adoption Hearing, concerning adoption of the 1987 National Electrical Code, Seattle, WA. 12/87.

"Performance of Plastic Plumbing and Electrical Products in Fire Resistive Assemblies". Prepared for presentation at the ASTM Symposium on Fire Hazard and Fire Risk Assessment. San Antonio, TX, 12/3/90.

"Combining of Modeling, Computer Graphics and Timeline/Witness Data for Consultants": ASTM Committee E.5 Forensic Seminar, San Francisco, CA, 6/90.

"Forensic Fire Investigations"-presented to the East Bay Chapter of ICBO-6/89, Danville, CA.

"Value and Utilization of Experts in Subrogation" - presented to Lawyers Subrogation Seminar hosted by Bolling, Walter & Gawthrop - 6/89 - Sacramento, CA.

"Condominium Construction Defects" - presented to the Mount Diablo Property Association monthly meeting - 3/89.

"What Every Structural Engineer Needs to Know About Fire Protection" - Presented to Structural Engineers Association of N. California (SEAONC), 11/88, San Francisco CA.

"Fire Performance of Plastic Pipe, Tube & Conduit" - presented to the Fire Retardant Chemicals Association - Fall Technical Conference, 10/18/87 - Monterey, CA.

"Fire Performance of Contemporary Building Products and Furnishings", East Bay Arson Round Table - CCAI, Berkeley, CA, 10/15/87.

Comments on plumbing revisions prepared for the Chicago Building Code. Testimony delivered to the Building Code Revision Panel, Chicago, IL. 9/86.

"Fire Hazards of Non-metallic Electric Raceway". Testimony presented to the Sacramento Toxic Hazards Commission, 12/86.

"Fire Performance of Plastic Pipe - An Update", presented to the Arizona State Chapter Meeting of ICBO, Phoenix, AZ, 5/18/85.

Research Society Meeting in St. Louis, MO, June 1984. (Presented by B.W. Gammon, co-authors - A.P. Schniewind and R. White).

"Materials Properties & Fire Investigation" presented to the Fire Investigation Section, Santa Clara Fire Chiefs Association on 10/6/83.

"Use of Fire Performance and Fire Test Data in Fire Investigation", presented to the San Mateo County Fire Investigation Unit, Millbrae, CA, 5/26/85.

"Plastic Pipe & Fire Safety; The Model Building Codes, Fire Test Work & a Historical Perspective". Presented to the ANSI - A-40 Committee, Boston, MA, 10/85.

"Modeling Load-Bearing Stud Wall Fire Endurance" presented to the Fire Protection Research Society Meeting in St. Louis, MO, June-1984. (Presented by B.W. Gammon, co-authors - A.P. Schniewind and R. White).

Moderator - Panel on Manufactured Housing Technology, 6/82. Meeting, Northern California Section - Forest Products Research Society, San Mateo, CA.

Expert Witness - California Legislature Assembly Committee on Governmental Organization, 2/11/81. Testimony on effects of contemporary building materials and contents on high-rise fire safety.

"Research Efforts in Housing Rehabilitation" Forest Product Research Society, Northern California Section Meeting - Fresno, CA 10/80.

"Full Scale Fire Tests of BART Vehicle Materials". Presentation to the N. California section of Society of Fire Protection Engineers, 1/80 (with R.B. Williamson & F. Fisher).

Expert Witness - California State Commission for Housing and Community Development, 10/20/80. Testimony related to fire performance of plastic pipe for residential and commercial structures.

"Fire Related Problems with Contemporary Residential Building Materials" at the California Fire Chiefs Assoc. of Fire Prev. Officers Mtg. 2/23/79.

"Influence of Construction Materials on the BART Fire of January, 1979" presented to the Santa Clara County Chapter of the ASCE, Spring 1979.

"Wood/Char Microstructure in Treated and Untreated Wood." National Meeting Forest Products Research Society, 7/79.

"Fire Performance of Contemporary Plastic Materials". Presentation to the Products Liability Committee of the San Francisco Bar Association, 9/79.

"Fire Protection Problems Associated with Cellulose Insulation Products", 1978. Society of Fire Protection Eng. - Fire Protection Engineering Seminar, Anaheim, California, 5/78.

"Fire Performance of Wood" at ASTM D-7 Committee Meeting on Wood Products, Richmond, California, 10/77 (with R. B. Williamson).

"Instrumental Approaches to Powder Coatings Characterization" at the American Chemical Society National Meeting, Chicago, Illinois, 8/73.

"Powder Coatings for the Container Industry" at the National Metal Decorators Association Convention, Miami Beach, Florida, 10/73.

"Design of Resin Systems for Powder Coatings" at the SME Powder Coatings Conference, Cincinnati, Ohio 3/72.

"Polymer Resins for Powder Coating" at the University of Southern Mississippi Polymer Conference Series, Biloxi, Mississippi, 7/72.

"Painting Southern Pine" presented at the Conference on Southern Pine Utilization Alexandria, Louisiana, 11/6