2010

A guide to the Howard W. Emmons papers

Worcester Polytechnic Institute

Howard W. Emmons Papers

04/08/2010

Howard W. Emmons Papers

MS 06

Personal Papers

ABSTRACT

Howard Emmons, a professor of Mechanical Engineering at Harvard University for forty years, was a leader in fire research and fire safety science in the second half of the 20th Century. This collection includes his papers and reports, including reports of the Home Fire Project, and papers and reports by others in the fire safety science field.

BIOGRAPHICAL SKETCH

Howard W. Emmons was born in Morristown, N.J. Aug. 30, 1912. He received Master of Engineering and Master of Science Degrees from Stevens Institute of Technology, in 1933 and 1935 respectively. He received his Doctor of Science degree from Harvard University in 1938. After two years at Westinghouse Electric and one at the University of Pennsylvania as Associate Professor, Emmons came to Harvard University in 1940. He became Gordon McKay Professor of Mechanical Engineering there in 1949, and in 1966 became Abbott and James Lawrence Professor of Engineering. He retired from Harvard in 1983.

Professor Emmons was married and had three children. He lived in Sudbury, MA for many years, and was chairman of the Lincoln-Sudbury School Committee (1954-1968) and a town selectman (1969-1972).

Emmons' focus throughout his career was on fire safety science, and he was on the leading edge in this field. He re-created furnished rooms in his laboratory and observed them burning. He developed mathematical models for predicting fire spread, and later the Harvard Computer Fire Code.

He chaired the National Academy of Science's Committee on Fire Research, and helped bring about the passage of the National Fire Research and Safety Act of 1968. He chaired and participated in many other boards and committees related to fire safety.

With grants from the National Science Foundation, and working with Factory Mutual Research and Engineering Corp., Emmons directed Harvard's Home Fire Project.

After Howard Emmons' retirement from Harvard, he continued to work in the Fire Safety Science field, serving on committees and as a consultant, and continuing his work on the Home Fire Project.

Howard Emmons received many awards and honors, including being named "man of the year" by the Society of Fire Protection Engineers. In 1983, the Center for Fire Research honored him at its annual conference, calling him "Mr. Fire Research."

He supported the Fire Safety Science program at Worcester Polytechnic Institute, and WPI has an annual Howard W. Emmons Distinguished Lecture, and also gives the Howard Wilson Emmons Distinguished Scholar Award.

SCOPE AND CONTENT

There are materials in this collection from 1931 to 1998. The bulk of the collection is from the 1960s through 1980s. The largest part of the collection is Howard Emmons' own work, including his notes, notebooks and handbooks; many papers and reports he wrote; the Harvard Home Fire Project which he

directed and wrote many papers for; presentations and consultations he did; and committees he chaired and served on.

A large part of the collection is also made up of papers and reports on fire safety science written by other people. Emmons had organized many of these papers, including some of his own, by subject categories. These categories are maintained in the collection; there may be other papers which fit these categories which will be found elsewhere. The categories are: Fire Modeling, Test Methods, Radiation, Mass Fire, Pyrolysis, Sprinklers, and Extinguishants and Retardants.

Also part of the collection are photographs and slides; films related to the Home Fire Project; computer manuals, print-outs, and disks; and files of legal cases Howard Emmons worked on as a consultant.

Container List

Container	Folder	Date	Title
None			

Series I: Biographical Materials

MS 06_0001 Personal Papers

Container List

Container	Folder	Date	Title
Box 1	Folder 1	1983-1998	Biographical Information and Recognition
Box 1	Folder 1	1994	Lincoln-Sudbury Regional High School - Recognition of H.W. Emmons

Series II: Correspondence

MS 06_0002 Correspondence

Container List

Container	Folder	Date	Title
Box 1	Folder 3	1981	Correspondence with IBM re. a standard test for furnishings
Box 1	Folder 4	1981, 1985, 1986	Correspondence
Box 1	Folder 5	1985, 1986	Correspondence- New York State & New York City
Box 1	Folder 6	1991-1995	Correspondence
Box 1	Folder 7	1997	Correspondence and Information on Creare Companies

Series III: Notebooks, Notes and Handbooks

MS 06_0003 Notebook

Container List

Container	Folder	Date	Title
Box 1	Folder 8	1931	Notebook - Howard Emmons'
		says "K, K" on front	
Box 1	Folder 9	n.d.	Two Booklets
		"Standard Conversion Tables for L & N Thermocouples" and "Haskins Chromel & Other Electrical Resistance Wires"	

Box 1	Folder 10	1959	Inspection Manual - National Fire Protection Association
Box 1	Folder 11	n.d.	Notes
		Paper with this said "drawing of a flow-over turbine engine"	
Box 1	Folder 12	1986	Notebook of the Underwriters' Bureau of New England
		"90th Anniversary Edition of "The First Fire Protection Handbook 1896-1986" [2 copies]	

Series IV: Notebooks and Notes

MS 06_0004 Notebook

Container List

Container	Folder	Date	Title
Box 2	Folder 1	c. 1973-1980	Notebook - Course materials
Box 2	Folder 2	1976	Notes
		some are class materials	
Box 2	Folder 3	1984	Fire and Spray Interactions/Teach/T Code
Box 2	Folder 4	1984	Notes/equations - Ceiling Jet
Box 2	Folder 5	1985, 1986	Notebook - Ceiling Jet
		notebook labeled "Helium Results"	
Box 2	Folder 6	1988	Notes and Graphs
Box 2	Folder 7	earlier and 1991	Notebook - Units/Constants/Properties, Tables and other materials
Box 2	Folder 8	1991-1993	Notes - Ceiling Jet Book 2

Series V: Papers and Reports by Howard W. Emmons

MS 06_0005 Papers, Personal

Container List

Container	Folder	Date	Title
Box 3	Folder 1	9/28/1937	Report - "Theory of a Straight Line Motion Mechanism & Application to Recorders"
Box 3	Folder 2	11/1938	Paper - "The Mechanism of Drop Condensation"
Box 3	Folder 3	1/1940	Paper - "The Theory & Application of Extended Surface Thermocouples"
Box 3	Folder 4	6-9/1940	Report - "Correlation of Supercharger Design & Performance Data"
		by Emmons, B.J. Robertson & Frank Lockhard	
Box 3	Folder 5		Paper - "Effect of Variable Viscosity on Boundary Layers, with a Discussion of Drag Measurements"
		by Emmons & J. G. Brainerd	
Box 3	Folder 6	c. 1943	Paper - "Natural Convection Heat Transfer Correlation"
Box 3	Folder 7	3/1944	Paper - "The Numerical Solution of Partial Differential Equations"

Box 3	Folder 8	8/1944	Paper - "Shock Waves in Aerodynamics"
Box 3	Folder 9	5/7/1946	Technical Note
		"Flow of a Compressible Fluid past a Symmetrical Airfoil in a Wind Tunnel & in Free Air"	
Box 3	Folder 10	c. 1946	Paper - "The Present Status of Axial Flow Compressor Design"
		by Emmons & George Ball	
Box 3	Folder 11	1947	Publication - Gas Dynamics Tables for Air
Box 3	Folder 12	9/1/1949	Technical Memorandum - "Transient Aerodynamic Heating"
Box 3	Folder 13	12/1949	Report - "Thermal Flame Propagation"
		by Emmons, Harr & Strong	
Box 3	Folder 14	6/1950	Paper - "Note on Aerodynamic Heating"
Box 3	Folder 15	6/1950	Paper - "The Laminar-Turbulent Transition in a Boundary Layer - Part I"
Box 3	Folder 16	c. 1951	G. I. Taylor's Chapter for Princeton Series - "Solid & Liquid Explosives"
		with Emmons' and others' notes and equations	
Box 3	Folder 17	1950s	G. I. Taylor - "Taylor's original stuff" [this was title of envelope]
Box 3	Folder 18	1950s	G. I. Taylor - Emmons' figures and tables
Box 3	Folder 19	1950s	Papers on Detonation - with G. I. Taylor materials
		see also photos at end of collection	
Box 4	Folder 1	1951-1953	Reports and Papers
		"Flow Instabilities in Compressor Rows" & "Compressor Surge & Stall Propagation" and related materials	
Box 4	Folder 2		Paper - "Discontinuity Properties of Flames & the Measurement of Flame Speeds"
		by R. A. Gross & H. W. Emmons [1 page]	
Box 4	Folder 3	1953	Paper - "Compressor Surge & Stall Propagation"
		by H. W. Emmons, C. E. Pearson & H.P. Grant	
Box 4	Folder 4	4/1953	Paper - "The Film Combustion of Liquid Fuel"
Box 4	Folder 5	11/1953	Report - "Tabulation of the Blasius Function with Blowing & Suction"
		by H. W. Emmons & D. Leigh	
Box 4	Folder 6	6/1954	Paper - "Shear Flow Turbulence"
Box 4	Folder 7	7/1954	Paper - "The non-steady aerodynamic heating of a plate"
Box 4	Folder 8	11/1954	Paper - "Amplification of Waves on Thin Liquid Film"
Box 4	Folder 9	4/1955	Paper - "Dimensional Analysis of Air Knife Film Coating Machine Operation"
Box 4	Folder 10	6/1955	Technical Note - "Experiments with a Rotating-Cylinder Viscometer at High Shear Rates"
		by J. A. Cole, R. E. Petersen & H. W. Emmons [2 copies]	
Box 4	Folder 11	1/1956	Paper - "The film Combustion of Liquid Fuel"

Box 4	Folder 12	4/1956	Paper - "Combustion"
Box 4	Folder 13	3/10/1958	Paper - "Combustion - An Aeronautical Science"
Box 4	Folder 14	8/1958	Report - "The supersonic flow about a blunt body of revolution for gases at chemical equilibrium" *by F. Gravalos, I. Edelfelt & H. Emmons*
Box 4	Folder 15	9/1958	Paper - "A Survey of Stall Propagation - Experiment & Theory" *by H. W. Emmons, R. E. Kronauer & J. A. Rockett*
Box 4	Folder 16	5/1959	Paper - "Taylor instability of finite surface waves" *by H. W. Emmons, C. T. Chang & B. C. Watson*
Box 4	Folder 17	11/1959	Paper - "The Stability of Luminar Flames" *by R. E. Petersen & H. W. Emmons*
Box 4	Folder 18	1/1960	Paper - " Natural Convection Above Fires" *by M. P. Murgai & H. W. Emmons*
Box 4	Folder 19	n.d., c. 1960s	Paper - "The Future of Applied Mechanics"
Box 4	Folder 20	4/1961	Paper - "A study of natural convection above a line fire" *by Shao-Lin Lee & H. W. Emmons*
Box 4	Folder 21	8/1961	Paper - "Some Observations on Pool Burning" *2 copies*
Box 4	Folder 22	2/1962	Paper - "Poiseuille Plasma Experiment" *by H. W. Emmons & R. I. Land*
Box 4	Folder 23	1962	Article - "Recent Developments in Plasma Heat Transfer" *2 copies*
Box 4	Folder 24	1963	Paper - "Plasma Heat Transfer"
Box 4	Folder 25	1/17/1963	Paper - "Can the Scientist Help the Fire Protection Engineer?"
Box 5	Folder 1	n.d.,	Paper - "Fire Storms and Conflagrations associated with Nuclear Weapon Attack"
Box 5	Folder 2	1964	Paper - "Experiments on high pressure plasmas" *2 copies*
Box 5	Folder 3	2/1964	Report - "The Theory of AC Characteristics of a DC Arc" *by H.W. Emmons & K. Gopalakrishna*
Box 5	Folder 4	1965	Paper - "Magnetohydrodynamics" *2 copies*
Box 5	Folder 5	1965	Paper - "Fundamental Problems of the Free Burning Fire"
Box 5	Folder 6	8/1965	Paper - "Fire Development Theory - An Overview" *2 copies*
Box 5	Folder 7	12/1965	Paper - "The Continuum Properties of Fiber Suspensions" *3 copies*

Box 5	Folder 8	12/1965	Report - "The Arc Measurement of High Temperature Gas Transport Properties"
		3 copies	
Box 5	Folder 9	1965-1982	Appendix of Harvard Reports
Box 5	Folder 10	1966-1967	Report - "Fire Research - A Trip Report"
Box 5	Folder 11	1967	Paper - "The Fire Whirl"
		by Howard W. Emmons & Shuh-Jing Ying [2 copies]	
Box 5	Folder 12	1967	2 Statements on House Bill 6637 - The Fire Research & Safety Act of 1967
Box 5	Folder 13	3/10/1967	Paper - "Arc Measurement of High-Temperature Gas Transport Properties"
		2 copies	
Box 5	Folder 14	5/1967	Paper - "Fire Research Abroad"
		2 copies	
Box 5	Folder 15	12/1969	Paper - "Investigation of Helium Arcs at 10 atm Pressure"
		by C. C. Hwang & Howard W. Emmons [2 copies]	
Box 5	Folder 16	1970	Paper - "Critique of Numerical Modeling of Fluid Mechanics Phenomena"
Box 5	Folder 17	7/1970	Paper - "Ignition in a Boundary Layer"
		plus draft and notes	
Box 5	Folder 18	8/1970	Paper - "Fluid Mechanics and Combustion"
Box 5	Folder 19	8/1970	Paper - "Fire Spread in Paper Arrays"
		by Howard W. Emmons & Tom Shen [2 copies]	
Box 5	Folder 20	1972	Paper - "The Drying of Porous Media"
		by Kun Min & Howard W. Emmons [2 copies]	
Box 5	Folder 21	1972	Notes -- Calculations for Water Evaporation
		Volume Contraction on Cooling Hot Gas by water evaporation/rate constants for evaporating water	
Box 5	Folder 22	8/15/1974	Paper - "Transpiration Drying of Porous Hygroscopic Materials"
		by Phani P. K. Raj & Howard W. Emmons	
Box 5	Folder 23	1/1975	Abstract - "The Detonation of Methane-Air Mixtures"
Box 5	Folder 24	1975	Drafts of Paper - "On the Burning of a Large Flammable Vapor Cloud"
		by Emmons & Raj	
Box 6	Folder 1	Summer 1975	Paper - "Layering of Fire Gases"
		by J. Backovsky & H. W. Emmons	
Box 6	Folder 2	1975	Drafts/other articles - re. paper by Emmons & Raj
		"On the Burning of a Large Flammable Vapor Cloud"	
Box 6	Folder 3	1975	Paper - "Fire Induced Flow Through an Opening"
		by J. Prahl & H. W. Emmons [2 copies]	
Box 6	Folder 4	1976	Paper - "On the Burning of a Large Flammable Vapor Cloud"
		by Howard W. Emmons & P. K. Raj	

Box 6	Folder 5	1976	Paper - "Combustion of Wood Charcoal"
		by D. D. Evans & H. W. Emmons [2 copies]	
Box 6	Folder 6	8/12/1976	Report - "The Modeling of Fires" [
		Home Fire Project Report #18	
Box 6	Folder 7	n.d., c. 1978	Paper - "The Prediction of Fires in Buildings"
Box 6	Folder 8	n.d., c. 1978	Paper - "Fire"
Box 6	Folder 9	n.d.	Paper & Notes - "The Analysis of a Tragedy"
		Beverly Hills Supper Club	
Box 6	Folder 10	10/1980	Paper - "Diffusion Flame Data & Interpretation for Burning in Hot Vitiated Air"
Box 6	Folder 11	1980	Paper - "The Growth of Fire Science"
		2 copies	
Box 6	Folder 12	c. 1980	Paper - "The Parts of a Building Fire" -draft
Box 6	Folder 13	1980	Paper - "Scientific Progress on Fire"
Box 6	Folder 14	n.d., c. 1980	Report
		"Note on the temperature of the surface of an object heated by heat flux & cooled by convection and radiation"	
Box 6	Folder 15	n.d., c. 1980s	Notes - Characteristics and Function of Variables
Box 6	Folder 16	1981	Paper - "The Calculation of a Fire in a Large Building"
Box 6	Folder 17	1981	Paper - "Spontaneous Ignition of Styrene-Butadiene Rubber"
		2 copies	
Box 6	Folder 18	12/1981	Papers - "Code Models"
		flow through vent/heating of thick & thin targets - 4 short Papers	
Box 6	Folder 19	1982	Report - "The Ignition & Burning of Hot Layer Gases"
		Home Fire Project No. 51 [2 copies & notes]	
Box 6	Folder 20	3/1982	Paper - "The Computer Fire Codes & Required New Data"
Box 6	Folder 21	8/20/1982	Manuscript - "Fire Detectors for Public Fire Safety"
Box 7	Folder 1	12/1982	Paper - "The Science of Wood Combustion"
		by Howard W. Emmons & Arvind Atreya [2 copies]	
Box 7	Folder 2	1982 & 1983	Correspondence - with John Lyons, National Bureau of Standards & Comtex Science Corp.
		re. electronic version of "The Two Layer Fire Model"	
Box 7	Folder 3	1983	Paper - "The Further History of Fire Science"
Box 7	Folder 4	8/30/1983	Paper & Calculations - "Fire Growth at the MGM"
Box 7	Folder 5	1984-1992	Calculations -MGM Fire
Box 7	Folder 6	1984	Paper - "The Further History of Fire Science"

Box 7	Folder 7	1985	Manuscript -- "Vent Flows"
		and related notes and correspondence	
Box 7	Folder 8	1985	Paper - "The Needed Fire Science"
		2 copies	
Box 7	Folder 9	9/1986	Paper - "Analysing Far Field Effects"
		includes drafts & 2 copies	
Box 7	Folder 10	c. 1987	Paper - "Experiments with a Fire Math Model"
		includes notes & related material	
Box 7	Folder 11	c. 1987	Formulation - "Application of fractional Effective Dose Model to Smoke from Materials"
		for Gordon Hartzell's paper	
Box 7	Folder 12	1987	Paper - "Wood Ignition and Pyrolysis"
		by Arvind Atreya & Howard W. Emmons	
Box 7	Folder 13	1987	"Why Fire Model? The MGM Fire & Toxicity Testing"
		3 copies	
Box 7	Folder 14	3/16/1987	Paper - "The Flow of Gases Through Vents" aka "Vent Flows"
		Home Fire Project Technical Report No. 75	
Box 7	Folder 15	1988	Paper - "Phenomena of a Comprehensive Fire Model" -2nd draft
Box 7	Folder 16	10/3/1988	Paper - "Window Glass Breakage by Fire"
		Home Fire Technical Report No. 77	
Box 8	Folder 1	c. 1989	Paper - "Progress in Fire Modeling"
		2 copies	
Box 8	Folder 2	2/21/1989	Paper - "Toxic Hazard & Fire Science"
		Home Fire Project Technical Report No. 79	
Box 8	Folder 3	1989	Paper - "The Transient Ceiling Jet"
		written draft, typed copy & some computations	
Box 8	Folder 4	1989	Notes - "Ceiling Jet"
		notes, graphs, computer program	
Box 8	Folder 5	1989	Notes - "Ceiling Jet"
Box 8	Folder 7	10/1990	Notes - Comparison of Wall-Fire Models
		Folder 7: Notes - Comparison of Wall-Fire Models - 10/1990	
Box 8	Folder 8	3/1991	Paper - "The Ceiling Jet in Fires"
Box 8	Folder 9	1993	Draft - "Elementary Mechanics & Fluid Motions like Taylor Columns"
		by J. Bush, H. Stone & H. W. Emmons - with notes & correspondence	
Box 8	Folder 10	c. 1993	Paper - "Elementary Mechanics & Fluid Motions like Taylor Columns"
		by J. Bush, H. Stone & H. W. Emmons	

Box 8	Folder 12	3/15/1996	Paper - "A Universal Orifice Flow Formula"
		and related materials	
Box 8	Folder 13	3/23/1996	Notes - New Fuel A-21, clipped to paper "Fluid Mechanics & Combustion" [1971]
Box 8	Folder 14	1996	Script - For television program on MGM Fire
Box 8	Folder 15	c. 1997	Paper - "Fire Safety Science in the Twenty First Century"

Series VI: Presentations by Howard W. Emmons - Transparencies and Notes

MS 06_0006 Transparency, Slide

Container List

Container	Folder	Date	Title
Box 9	Folder 1	10/4/1972	Presentation - "Fire Research"
Box 9	Folder 2	c. 1977	Transparencies and notes - Colloquium Talk - Fire Safety Engineering
Box 9	Folder 3	1979	Transparencies - Computer Fire Code IV
Box 9	Folder 4	c. 1983, 1985	Transparencies - Harvard Fire Models & ISO Algorithm validation
Box 9	Folder 5	1987	Transparencies and notes
		"Experiments with a Math Model," "Making FIRST more user friendly"	
Box 9	Folder 6	n.d.	Transparencies -Multiroom Flow Distribution View Graphs
Box 9	Folder 7	n.d.	Transparencies and notes - Regimes of flow through a vent
Box 9	Folder 8	n.d.	Transparencies and slide for presentations
		Fabric time and weight to ignition and burning of plexiglass	
Box 9	Folder 9	n.d.	Transparencies - ceiling jets
Box 9	Folder 10	n.d.	Transparencies - "Ceiling Jet in Fire"
Box 9	Folder 11	n.d.	Transparencies and notes - "What we Know and Don't Know about Ceiling Jets"
Box 9	Folder 12	n.d.	Transparencies - Heat Transfer in Ceiling Jet
Box 9	Folder 13	1/15/1992	Paper for Presentation and Transparencies - "Enclosure Fire Modeling"
Box 10	Folder 1	4/29/1992	Transparencies and notes - "Fire Science and the New Fire Protection Engineering"
Box 10	Folder 2	c. 1992	Transparencies - "Fire Science history and future needs"
Box 10	Folder 3	c. 1994	Transparencies - "Outline of a Comprehensive Fire Performance Code"
Box 10	Folder 4	4/4/1994	Transparencies - "The New Fire Engineering"
Box 10	Folder 5	4/1997	Transparencies - "Fire Science in the 21st Century"

Container List

Container	Folder	Date	Title
Box 10	Folder 1	c. 1940s	Consultation - Carrier Corporation
			"Elementary Theory & Design of Centrifugal Refrigeration Compressors" [2 copies]
Box 10	Folder 2	2/10/1945	Consultation - Elliott Company
			"The Theoretical Flow through Backward Leading Impellers of Centrifugal Compressors"
Box 10	Folder 3	10/1973	Consultation - Ontario Council on Graduate Studies, Mechanical Engineering
Box 10	Folder 4	1976	Consultation - Standardized Nuclear Unit Power Plant System (SNUPPS)
			Fire in Nuclear Plants
Box 10	Folder 5	1976-1981	Consultation - Stevens Institute of Technology, Mechanical Engineering Group
Box 10	Folder 6	1977-1979	Consultation - Stone & Webster Engineering
Box 10	Folder 7	1981-1986	Consultation & Board Member - Technology Management Systems, Inc.
Box 10	Folder 8	1983	Consultation - American Academy of Arts & Sciences re. Auditorium Fire Safety
Box 10	Folder 9	1985	Consultation - Society of the Plastics Industry, Inc. re. State of Maine
			toxicity testing of building materials
Box 10	Folder 10	1985, 1986	Consultation - Sherman Larrison Bergsman, Inc. - Problems for CR Challenge
Box 10	Folder 11	1987 & 1988	Consultation - Haemonetics Corp.
Box 10	Folder 12	1988	Consultation - Thermo Electron - "Fire Genie"
Box 11	Folder 1	1967-1968	Consultation - Assessment of FM Research Program & Materials
			re. patent for Dual Needle Sprinkler Head [Emmons one of inventors]
Box 11	Folder 2	1970-1973	Consultation - Report: "The Use of Modern Mathematical Models in the Factory Mutual System"
			and correspondence
Box 11	Folder 3	1976-1986	Project Correspondence
Box 11	Folder 4	1985-1990	Consultation - Math Modeling notes, graphs, equations
Box 11	Folder 5	1982-1987	Consultation - "Prediction of Fire in Buildings" for FMRC grant
			to National Bureau of Standards
Box 12	Folder 1	3/1987	Computer Disk and printed pages - Disk says "MMASBANK"
Box 12	Folder 2	1988 & 1989	Grant Reports - "Prediction of Fire in Buildings" - NIST for Factory Mutual
Box 12	Folder 3	1990-1992	Grant Reports - "Prediction of Fire in Buildings" - NIST for Factory Mutual
Box 12	Folder 4	1993 & 1994	Extension Grant Proposal - "Prediction of Fire in Buildings" - NIST for Factory Mutual

Box 12	Folder 5	5/12/1995	Consultation - Cummins Engine Co. Inc. --Relation of vortex motion & combustion
Box 12	Folder 6	5/1995	Review - for National Research Council - National Research Council

Series IIX: Home Fire Project

MS 06_0008 Personal Papers

Container List

Container	Folder	Date	Title
Box 13	Folder 1	1973	Notes - Home Fire Project - Full Scale Fire Test by Howard W. Emmons
Box 13	Folder 2	11/1982	Final Report - "Home Fire Project: 1972-1982"
		this is report number 56	
Box 13	Folder 3	1971-1974	Technical Reports - Numbers 1-10
		1: "Natural Convective Flow through an Opening" by Howard W. Emmons - 12/1973 *2: "The Value Destruction of a Home by Fire" by Neville Fowkes & Richard Land - 1/1975* *3: "Dynamics of Pyrolysis of Cellulosic Materials" by Kun Min -- 2/1975* *4: "Fire in an Enclosure with Windows - Temperature Measurements" by Phani P. K. Raj - 2/1973* *5: "Fire Spread in Paper Arrays" by Howard W. Emmons & Tom Shen - 1970* *5A: "The Fire Whirl: Theory and Experiment" by Robert Mayle -- 2/1973* *6: "A Theoretical and Experimental Study of Nonpropagating Free-Burning Fires" by James A. Block, n.d.* *7: "Fluid Mechanics and Combustion" by Howard W. Emmons -- 1970* *8: "The Drying of Porous Media" by Kun Min & Howard W. Emmons -- 1972* *9: "Heat Transfer in Fire" by H. W. Emmons -- 5/1973* *10: "Thermal Degradation and Spontaneous Ignition of Paper Sheets in Air by Irradiation" by Ubhayakar K. Shivadev & Howard W. Emmons -- 1974*	
Box 13	Folder 4	1974-1977	Technical Reports - Numbers 11-20 [missing number 15]
		11: "Fire and Fire Protection" by Howard W. Emmons - 7/1974 *12: "Fire Induced Flow Through an Opening" by J. Prahl & H. W. Emmons -1975* *13 "Combustion of Wood Charcoal" by D. D. Evans & H. W. Emmons -1975* *14: "Density of Wood Charcoal" by D. D. Evans - c. 1975* *16: "Flow through the Doorway" by Lloyd N. Trefethen - 3/1976* *17: "Layering of Fire Gases" by J. Backovsky & H. W. Emmons - Summer 1975* *18: "The Modeling of Fires" by H. W. Emmons - 8/12/1976* *19: "The Spread over Vertical Fuel Surfaces under the Influence of Externally Applied Thermal Radiation" by A. C. Fernandez-Pello - 1/1977* *20: "Computer Fire Code (II)" by H. W. Emmons - 1/1977*	
Box 13	Folder 5	1977 & 1978	Technical Reports - Numbers 21-29 [missing number 30]
		21: "The Home Fire - Viewed as a Scientific System" by Howard W. Emmons, n.d. *22: "Effects of Water on Wood Charcoal Combustion," "Wood Charcoal Combustion and the Effects of Water Application," "Analytical Modeling of The Effects of Water Application on Burning Wood Charcoal Surfaces" by Phiroz M. Bhagat - 1980-1982* *23: "Catalyltic Sensor for the Measurement of Heat of Combustion of Smoke" By Kun Min - 8/1977* *24: "Test Burns of Mattress and Bedclothes" by R. I. Land - 8/1977* *25: "Computer Fire Code III" and "Computer Fire Code III Appendix and Fortran Listing for Fire Code III" by H. W. Emmons, H. E. Mitler & L. N. Trefethen - 1/1978*	

26: "A Note on Minimizing the Unknowns for Computation of a Large System of Equations" by H. W. Emmons - 8/1978
27: "Downward Flame Spread Under the Influence of Externally Applied Thermal Radiation" by A. C. Fernandez-Pello - 2/1977
28: "Upward Laminar Flame Spread Under the Influence of Externally Applied Thermal Radiation" by A. C. Fernandez-Pello - 5/1977
29: "A Theoretical Model for the Upward Laminar Spread of Flames Over Vertical Fuel Surfaces" by A. C. Fernandez-Pello -1978

Box 14 Folder 1 1977-1980 Technical Reports - Numbers 31-40

31: "The Prediction of Fires in Buildings" by Howard W. Emmons - c. 1978
32: "Vapor-phase Thermal Analysis of Pyrolysis Products from Cellulosic Materials" by Kun Min - 1977
33: "Fire Characteristics under the Influence of External Radiation" by Tein-Mo Shih - 8/1978
34: "The Physical Basis for the Harvard Computer Fire Code" by Henri E. Mitler - 10/1978
35: "The Status of Fire Modeling in the United States" by H. W. Emmons, C. D. MacArthur, R. Pape - c. 1978
36: "Scientific Progress on Fire" by Howard W. Emmons - 1980
37: "Users' Guide for the Harvard Computer Fire Code" by Henri E. Mitler - 4/1979
38: "Fire" by Howard W. Emmons - n.d.
39: "Design and Use of Simple Gas Chromatograph" by E. Lincoln - 1/1979
40: Emmons' note says "Computer Tape, CFC IV"

Box 14 Folder 2 1979-1982 Technical Reports - Numbers 41-50 [missing Number 42]

41: "The Theory of Boundary Layer Burning with Radiation" by J. Backovsky - 10/1979
43: "Fire Ventilation Reconsidered" by Richard Land - 3/1980
44: "Heat Conduction Calculations for Zone Fire Modeling" by H. W. Emmons -10/1980
45: "Documentation for CFC V, the Fifth Harvard Computer Fire Code" by H. E. Mitler & H. W. Emmons - 10/1981
46: "Comparison between Theory and Experiment for a Burning Room" by Henri E. Mitler - 5/1981
47: "Finding Minimal Feedback Vertex Sets" by John D Ramsdell - 4/1981
48: "Juggle User's Guide" by John D. Ramsdell - 8/1981
49: "The Ingestion of Flames and Fire Gases into a Hole in an Aircraft Cabin for Small Tilt Angles and Low Wind Speeds" by Howard W. Emmons - 10/1981
50: "The Two Layer Fire Model" by Howard W. Emmons - 2/1982

Box 14 Folder 3 1982 Technical Reports - Numbers 51-55

51: "The Ignition and Burning of Hot Layer Gases" by Howard W. Emmons -2/1982
52: "The Ingestion of Flames and Fire Gases into a Hole in an Aircraft Cabin for Tilt Angles and Wind Speed" by Howard W. Emmons - 6/1982
53: "Transient Horizontal Flame Spread Tests on Cellular Plastics - Experimental Results" - Volumes I, II, and III by Seng-Chuan Tan - 12/1982
54: "Home Fire Project LSI-11 Laboratory Data Acquisition System" by Seng-Chuan Tan - 6/1982
55: "The Time-Dependent Ceiling-Jet in a Corridor" by Henri E. Mitler - 12/1982

Box 15 Folder 1 1982-1984 Technical Reports - Numbers 56-60 [missing number 60]

56: "The Home Fire Project: 1972-1982 - Final Report" - 1982
57: "Computer Modeling of Aircraft Cabin Fires: Final Report, June 1981- Dec. 31, 1982, FAA Project - 3/1983
58: "Computer Fire Code VI" by J. B. Gahm - 7/1983
59: "Pyrolysis, Ignition and Fire spread on Horizontal Surfaces of Wood" By A. Atreya - 3/1984

Box 15 Folder 2 1982-1984 Technical Reports - Numbers 61-70

61: "The Analysis of a Tragedy" by Howard W. Emmons - 1983
62: "The Calculation of a Fire in a Large Building" by H. W. Emmons - 1982

63: "The Prediction of Fire Growth in Buildings - An Introduction to Fire Phenomena" by Howard W. Emmons - 8/1984
64: "The Further History of Fire Science" by Howard W. Emmons - 10/1983
65: "Note on the Solvability of Math. Models of Fire" by Howard W. Emmons - 8/1984
66: "The Needed Fire Science" by Howard W. Emmons - 3/1985
67: "Fire Modeling for Toxic Gas Control" by Howard W. Emmons - 3/1985
68: "The Science of Fire - The New Fire Safety Engineering" by Howard W. Emmons - 10/1984
69: "Diffusion Flame Energy Transfers" by Craig Beyler - 1/1985
70: "Vent Flows" by Howard W. Emmons - 6/1985

Box 15 Folder 3 1985-1989 Technical Reports - Numbers 71-80

71: "Fire Detectors for Public Fire Safety" by Howard W. Emmons - 10/1985
72: "Fire Safety of Buildings and Building Occupants" by Howard w. Emmons - 1/1986
73: "Why Fire Model? The MGM Fire and Toxicity Testing" by Howard W. Emmons - 7/1986
74: "The Transient Ceiling Jet" by Howard W. Emmons - 8/26/1986
75: "The Flow of Gases Thru Vents" by Howard W. Emmons - 3/16/1987
76: "Experiments with a Fire Math Model" by Howard W. Emmons - 3/1/1988
77: "Window Glass Breakage by Fire" by Howard W. Emmons - 10/3/1988
78: "The Use of Fire Test Data in Fire Models" by Howard W. Emmons - 2/1989
79: "Toxic Hazard and Fire Science" by Howard W. Emmons - 2/21/1989
80: "Heat Conduction in Fires" by Howard W. Emmons - 4/29/1989

Box 16 Folder 3 1995-1997 Home Fire Project Technical Report Listing - Numbers 1 through 97

Box 16 Folder 1 1990-1995 Technical Reports - Numbers 81-90

81: "Progress in Fire Modeling" by Howard W. Emmons - 5/1/1990
82: "The Ceiling Jet in Fires" by Howard W. Emmons - 10/1990
83: "Strategies for Performance Codes in the U. S." by Howard W. Emmons - 3/9/1991
84: "Fire Safety Science - The Promise of a Better Future" by Howard W. Emmons - 8/17/1989
85: "Progress Report on the Ceiling Jet in Fire" by Howard W. Emmons - 9/12/1992
86: "Future Developments in Fire Safety" by Howard W. Emmons - 4/28/1993 --- "Fire Safety Science in the Twenty First Century" by Howard W. Emmons - n.d. [this was with other reports. Emmons' note says "see reports 86, 84, 83]
87: "Progress with the Ceiling Jet" by Howard W. Emmons - 10/2/1993
88: "The Distributio of Fire Gases Throughout a Multiconnected Building" by Howard W. Emmons - 11/6/1994
89: "Transient Ceiling Jets" by Howard W. Emmons - 6/1/1995
90: "Fire Science for Firemen 1 " by Howard W. Emmons - 6/16/1995

Box 16 Folder 2 1995-1997 Technical Reports - Numbers 91-98

91: "Fire in a High Rise Building" by Howard W. Emmons - 7/27/1995
92: "Fire Science for Firemen 2" by Howard W. Emmons - 8/14/1995
93: "Fire Science for Firemen 3" by Howard W. Emmons - 10/7/1995
94: "Fire Science for Firemen 4" by Howard W. Emmons - 12/1/1995
95: "Fire Science for Firemen 5" by Howard W. Emmons - 4/26/1996
96: "Fire Science for Firemen 6" by Howard W. Emmons - 6/18/1996
97: "Fire Modeling in the 21st Century" by Howard W. Emmons - 1/18/1997
98: "Dimensional Analysis of Film Condensation of Vapors" by Howard W. Emmons - 11/20/1997

Container List

Container	Folder	Date	Title
Box 16	Folder 4	1956	Committee on Fire Research - "Fire Research: First Correlation Conference"
Box 16	Folder 5	1959	Committee on Fire Research - "A Proposed Fire Research Program"
Box 16	Folder 6	1961	Committee on Fire Research - "A Study of Fire Problems" - Woods Hole
Box 16	Folder 7	1961	Committee on Fire Research - "Study Results - A Study of Fire Problems - Woods Hole Study
		Howard Emmons General Chairman of 1961 conference	
Box 17	Folder 1	1961	Committee on Fire Research - Final Report - "A Study of Fire Problems"
Box 17	Folder 2	11/30/1962	Committee on Fire Research - Comments on Study of Fire Problems Conference at Woods Hole
Box 17	Folder 3	1962	Committee on Fire Research - Final Report 1959-1962
Box 17	Folder 4	1967	Committee on Fire Research - Report written by H. W. Emmons
Box 17	Folder 5	10/1968	Committee on Fire Research - Symposium on Needs of the Fire Services
Box 17	Folder 6	1969	Committee on Fire Research - "A Proposed National Fire Research Program"
		Howard Emmons, Chair	
Box 17	Folder 7	c.1970	Committee on Fire Research - "Events Leading Up to Present in Fire Research"
Box 17	Folder 8	3/25/1970	Committee on Fire Research - "Some Observations on the Education of Firefighters" by Howard Emmons
Box 17	Folder 9	4/1970	Committee on Fire Research - Symposium on Training & Education in the Fire Services
Box 17	Folder 10	6/1971	Committee on Fire Research - Symposium on employment of Air Operations in the Fire Services
Box 17	Folder 11	1968 & 1981	Evaluation Committees - Test Methods [1981-Stanford Conference on Complex Turbulent Flows]
Box 17	Folder 12	6/8/1962	Space Science & Technology Panel - Correspondence
Box 17	Folder 13	1/22/1968	Space Science & Technology Panel - "A Proposal for Planetary Engineering" by Howard Emmons
Box 17	Folder 14	12/16/1968	Space Science & Technology Panel - Report: "New Dimensions for the Next Decade in Space"
Box 17	Folder 15	c. 1970	Space Science & Technology Panel - "Statement on Space Program" by Howard Emmons
Box 17	Folder 16	9/1969	Space Task Group Report to the President -- "Post-Apollo Space Program: Directions for the Future"
Box 17	Folder 17	2/1970	President's Science Advisory Committee - "The Next Decade in Space"
Box 17	Folder 18	8/30/1972	National Academy of Sciences Ad Hoc Fire Panel Report
		for National Bureau of Standards [Howard Emmons Chair]	
Box 18	Folder 1	1974	Massachusetts Commission on Nuclear Safety
Box 18	Folder 2	1970s	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		Aircraft: Civil & Military - Fire Safety Aspects of Polymeric Materials	

Box 18	Folder 3	9/1990	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		Aircraft Material Fire Test Handbook, FAA	
Box 18	Folder 4	c. 1990s	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		"FAA Fire Safety Mission" by Thomas E. McSweeney [2 copies]	
Box 19	Folder 1	1991-1995	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		National Research Council/National Academy of Sciences - Guidelines	
Box 19	Folder 2	c. 1993	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		Papers by FAA and others	
Box 19	Folder 3	1992-1994	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		Conference 11/1994, preparation and reports	
Box 19	Folder 4	1993 & 1994	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
Box 19	Folder 6	10/13/1995	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		"Fire and Smoke Resistant Materials: Improving Aircraft Safety" [draft]	
Box 19	Folder 5	11/8-10/1994	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		International Conference on Fire & Smoke Resistant Materials	
Box 19	Folder 7	1994 & 1995	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		Howard Emmons' writing and comments for "Fire and Smoke Resistant Materials" publication, writings of others	
Box 20	Folder 1	1995	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		"Fire & Smoke Resistant Materials" [draft]	
Box 20	Folder 2	1995	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		"Fire & Smoke Resistant Materials" - draft, incomplete, with reviewers' comments and responses	
Box 20	Folder 4	1995	Committee on Fire & Smoke Resistant Materials for Commercial Aircraft Interiors
		Final Publication: Fire & Smoke-Resistant Interior Materials for Commercial Transport Aircraft	
Box 20	Folder 3	1981-1985	Ad Hoc Mathematical Fire Modeling Group
Box 20	Folder 5	1988	Massachusetts Governor's Commission on Fire Safety, Combustion, Toxicity & Combustibility
Box 20	Folder 6	1984	University of Akron - Center for Fire & Hazardous Materials Research - Advisory Committee
Box 20	Folder 7	1984 & 1985	Fire Technology - Editorial Review Board
Box 20	Folder 8	1998	Fire Safety Board of Advisors/WPI Firesafety Studies
Box 20	Folder 9	1989-1995	Correspondence/papers re. WPI's Fire Protection Engineering Program
Box 21	Folder 1	1946-1949	American Physical Society - Committee on Fluid Dynamics
		Howard W. Emmons was first Secretary/Treasurer - Early records	
Box 21	Folder 2	1980s	American Physical Society - Division of Fluid Dynamics
Box 21	Folder 3	11/1997	American Physical Society - Division of Fluid Dynamics
		"Origin of Fluid Dynamics Division - presentation by Howard W. Emmons [also history from 1970s & 1980s]	

Box 21	Folder 4	1980-1990	Combustion Institute
Box 21	Folder 5	1971-1978	American Society of Mechanical Engineers
		Correspondence & honoring Howard W. Emmons	
Box 21	Folder 6	4/1976	UJNR (United States/Japan Cooperative Program on Natural Resources) Panel on Fire Research & Safety
		First Joint Meeting - Minutes	
Box 21	Folder 7	4/7-8/1976	UJNR Panel on Fire Research & Safety
		First Joint Meeting - Research Programs & Fire Research Facilities	
Box 21	Folder 8	n.d., probably 4/1976	UJNR Panel on Fire Research & Safety
		Probably First Joint Meeting - Smoke Control	
Box 21	Folder 9	n.d., probably 4/1976	UJNR Panel on Fire Research & Safety
		Probably First Joint Meeting - Fire Protection & Detection	
Box 21	Folder 10	10/19-22/1976	UJNR Panel on Fire Research & Safety
		2nd Joint Meeting - Theme: Human Behavior	
Box 22	Folder 1	10/1976	UJNR Panel on Fire Research & Safety
		2nd Joint Meeting - General Reports	
Box 22	Folder 2	10/1976	UJNR Panel on Fire Research & Safety
		2nd Joint Meeting - Theme: Toxicity	
Box 22	Folder 3	10/1976	UJNR Panel on Fire Research & Safety
		2nd Joint Meeting - Theme: Smoke Control	
Box 22	Folder 4	10/1976	UJNR Panel on Fire Research & Safety
		2nd Joint Meeting - Theme: Modeling of Fire	
Box 22	Folder 5	10/1976	UJNR Panel on Fire Research & Safety
		2nd Joint Meeting - Theme: Building Systems	
Box 22	Folder 6	10/1976	UJNR Panel on Fire Research & Safety
		2nd Joint Meeting - Theme: Fire Detection & Smoke Properties	
Box 22	Folder 7	3/13-17/1978	UJNR Panel on Fire Research & Safety
		3rd Joint Meeting - Theme: Human Behavior in Fires	
Box 22	Folder 8	3/1978	UJNR Panel on Fire Research & Safety
		3rd Joint Meeting - Theme: Building Systems	
Box 23	Folder 1	3/1978	UJNR Panel on Fire Research & Safety
		3rd Joint Meeting - Theme: Smoke Properties & Detection	
Box 23	Folder 2	3/1978	UJNR Panel on Fire Research & Safety
		3rd Joint Meeting - Theme: Fire Modeling	
Box 23	Folder 3	3/1978	UJNR Panel on Fire Research & Safety
		3rd Joint Meeting - Theme: Toxicity	

Box 23	Folder 4	2/5-9/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting - Resolutions	
Box 23	Folder 5	2/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting - Theme: Building Systems & Smoke Control	
Box 23	Folder 6	2/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting - Theme: Fire & Smoke Retardants	
Box 23	Folder 7	2/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting - Theme: Human Behavior	
Box 23	Folder 8	2/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting - Theme: Fire Investigation Technique	
Box 24	Folder 1	2/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting -Theme: Toxicity of Fire Gas	
Box 24	Folder 2	2/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting -Theme: Fire Modeling	
Box 24	Folder 3	2/1979	UJNR Panel on Fire Research & Safety
		4th Joint Meeting -Theme: Fire Detection and Smoke Properties	
Box 24	Folder 4	10/15-24/1980	UJNR Panel on Fire Research & Safety
		5th Joint Meeting	
Box 24	Folder 5	5/10-14/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Resolutions & General Information	
Box 24	Folder 6	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme: Fire Investigation Techniques	
Box 24	Folder 7	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme: Sprinklers	
Box 24	Folder 8	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme: Fire Detection	
Box 24	Folder 9	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme: Fire & Smoke Retardants	
Box 24	Folder 10	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme:Toxicity	
Box 24	Folder 11	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme: Building Systems & Smoke Control	
Box 24	Folder 12	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme: Human Behavior	
Box 25	Folder 1	5/1982	UJNR Panel on Fire Research & Safety
		6th Joint Meeting - Theme: Modeling of Fire [includes Emmons' paper "The Computer Fire Codes and Required New Data"	

Box 25	Folder 2	10/1983	UJNR Panel on Fire Research & Safety
		7th Joint Meeting	
Box 25	Folder 3	c. 1983	UJNR Panel on Fire Research & Safety
		probably 7th Joint Meeting - "An Example of Human Behavior in a Hotel Fire" by Soichiro Okishio, Takashi Handa & Kuno Kawagoe	
Box 25	Folder 4	c. 1983	UJNR Panel on Fire Research & Safety
		probably 7th Joint Meeting - "Analysis of the Fire Protection Cost Index" by H. Nakamura & Y. Yashiro	
Box 25	Folder 5	c. 1983	UJNR Panel on Fire Research & Safety
		probably 7th Joint Meeting - "The Models to be developed in Fire Safety Design Project" by Takeyashi Tanaka	
Box 25	Folder 6	10/1983	UJNR Panel on Fire Research & Safety
		7th Joint Meeting - "Fire Spread Research in the U.S." - report by Howard W. Emmons	
Box 25	Folder 7	10/1983	UJNR Panel on Fire Research & Safety
		7th Joint Meeting - Theme: Materials Fire Properties & Test Methods	
Box 25	Folder 8	10/1983	UJNR Panel on Fire Research & Safety
		7th Joint Meeting - Theme: Measurement Methods	
Box 25	Folder 9	10/1983	UJNR Panel on Fire Research & Safety
		7th Joint Meeting - Theme: Combustion Toxicity	
Box 25	Folder 10	10/1983	UJNR Panel on Fire Research & Safety
		7th Joint Meeting - Theme: Fire Hazard/Risk Management Methods	
Box 25	Folder 11	5/4-8/1987	UJNR Panel on Fire Research & Safety
		9th Joint Meeting	
Box 26	Folder 1	6/9-10/1988	UJNR Panel on Fire Research & Safety
		10th Joint Meeting	
Box 26	Folder 2	10/19-24/1989	UJNR Panel on Fire Research & Safety
		11th Joint Meeting - Papers, program, correspondence	
Box 26	Folder 3	10/27-11/2/1992	UJNR Panel on Fire Research & Safety
		12th Joint Meeting	
Box 26	Folder 4	1996	UJNR Panel on Fire Research & Safety
		13th Joint Meeting - 2 papers	
Box 26	Folder 5	5/28-6/3/1998	UJNR Panel on Fire Research & Safety
		14th Joint Meeting	
Box 26	Folder 6	1998	UJNR Panel on Fire Research & Safety
		14th Joint Meeting - papers	
Box 26	Folder 7	1998	UJNR Panel on Fire Research & Safety
		14th Joint Meeting - papers	

Series X: Conferences, Symposiums, Workshops Howard W. Emmons participated

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Container List

Container	Folder	Date	Title
Box 27	Folder 1	10/1984	Symposium on Combustion - Abstracts of contributed papers
		Tianjin, China	
Box 27	Folder 2	2/12-14/1990	Fourth CB Workshop on Fire Modeling
		NIST - program	
Box 27	Folder 3	5/1990	Papers - for Special Conference
		"Recent Advances in Flame Retardancy of Polymeric Materials"	
Box 27	Folder 4	1/16/1991	Abstract - "Strategies for Performance Codes in the U.S."
		by H. W. Emmons, and related Materials for Conference on Firesafety Design in the 21st Century	
Box 27	Folder 5	10/1993	Papers - Annual Conference on Fire Research - National Institute of Standards & Technology
Box 27	Folder 6	10/7-9/1993	'93 Asian Fire Seminar
Box 27	Folder 7	5/1996	7th Annual BCC (Business Communications Company) Conference on Flame Retardancy
Box 27	Folder 8	6/20-21/1996	Technical Symposium: Computer Applications in Fire Protection Engineering
		Society of Fire Protection Engineers & WPI Center for Fire Safety Studies	
Box 27	Folder 9	3/1997	Fifth International Symposium on Fire Safety Science
Box 27	Folder 10	11/11-14/1997	International Conference on Fire Research for Fire Investigation

Series XI: Papers and reports on Fire Modeling

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Container List

Container	Folder	Date	Title
Box 28	Folder 1	1930s	Paper- "Wind Pressure on a model of the Empire State Building"
		by Hugh L. Dryden & George C. Hill *and Emmons' notes on Wind Flows* *Folder labeled "DuPont Plaza"*	
Box 28	Folder 2	2/1961	Report - "A Mathematical Study of the Mechanism of Wood Burning"
		by William Squire & Connie Foster	
Box 28	Folder 3	1969	Paper - "Thermal Ignition in Two-Component Systems, Theoretical Model"
		by P. C. Bowes	
Box 28	Folder 4	8/1971	Report - "Modeling the Dynamic Behavior of Building Fires"
		by Billy T. Lee	

Box 28	Folder 5	c. 1972	Paper - "Modeling Fires" by Patrick J. Pagni
Box 28	Folder 6	1973	Paper - "Consideration of Fire Development in an Enclosed Space"
		by Marian Visich, Jr.	
Box 28	Folder 7	1973	Paper - "Modeling Techniques for Prediction of Fires"
		by J. De Ris	
Box 28	Folder 8	c. 1959- 1974	Papers - by G. I. Taylor, H. C. Hottel & P. H. Thomas, and extensive notes by H. W. Emmons
		includes Emmons' published questions in Thomas paper	
Box 28	Folder 9	1975	Paper - "Model of the Developing Fire in a Compartment"
		by Edwin E. Smith & Michael H. Clark, with comments by H. W. Emmons	
Box 28	Folder 10	6/1977	Paper - "The Particle-Source-In Cell (PSI-CELL) Model for Gas-Droplet Flows"
		by C. T. Crowe, M. P. Sharma, D. E. Stock	
Box 28	Folder 11	6/1977	Graphs - "Curves by Fire Code IV - Composition - notes of Howard W. Emmons
Box 28	Folder 12	8/1977	Report - "Computer Simulation of Full Scale Room Fire Experiments"
		IITRI Report - Prepared by Ronald Pape	
Box 28	Folder 13	8/1977	Report - "Computer Fire Code III - Appendix & Fortran Listing for Fire Code III"
		Home Fire Project Tech. Report No. 25 *by H. W. Emmons, H. E. Mitler & L. N. Trefethen*	
Box 28	Folder 14	6/1978	Report - "Hydraulic & Numerical Modeling of Room Fires"
		by E. N. Tangren, W. S. Sargent & E. E. Zukoski	
Box 28	Folder 15	7/15/1978	Report by V. K. Liu & K. T. Yang
		"UNDSAFE-II - A Computer Code for Buoyant Turbulent Flow in an Enclosure with Thermal Radiation"	
Box 28	Folder 16	1978	Paper - "The Status of Fire Modeling in the United States"
		by H. W. Emmons, C. D. MacArthur & R. Paper	
Box 28	Folder 17	1978	Paper - "A Theoretical Model for the Upward Laminar Spread of Flames over vertical fuel surfaces"
		by A. C. Fernandez-Pello	
Box 28	Folder 18	1978	Report - "HSLAB - An Interactive Program for Onedimensional Heat Flow Problems"
		by Leif Abrahamsson, Bengt Hagglund, Krister Janzon, Stockholm	
Box 28	Folder 19	1980-1985	Papers by Robert Brady Williamson - fire modeling/wood char/concrete & mortars
		these were all together in Emmons' papers	
Box 29	Folder 1	c. early 1980s	Paper - "Some Analysis of the FAA Post Crash Fire Scenario"
		by James Quintiere & T. Tanaka [2 copies]	
Box 29	Folder 2	1981	Paper - "Models for Cryogenic Liquid Spill Behavior on Land & Water"
		by Phani K. Raj	
Box 29	Folder 3	5/1981	Paper by B. J. McCaffery, J. G. Quintiere & M. F. Harkleroad
		"Estimating Room Temperatures and the Likelihood of Flashover using Fire Test Data Correlations"	

Box 29	Folder 4	7/1981	Paper - "Stochastic Modelling of Fire Growth"
		by Dr. G. Ramachandran	
Box 29	Folder 5	7/1981	Report - "Fire Spread Analysis of Buildings"
		by D. G. Elms & A. H. Buchanan, Building Research Assoc. of New Zealand	
Box 29	Folder 6	7/1981	Report - "Survey of Fire Modeling Efforts with Application to Transportation Vehicles"
		by William T. Hathaway	
Box 29	Folder 7	7/1981	Tests & Data -"Experimental Enclosure Fires for Enclosure Fire Model Varification"
		by Lawrence Livermore Lab et. al.	
Box 29	Folder 8	8/1981	"Modeling of the NBS Mattress Tests with the Harvard Fire Code"
		by John A. Rocket	
Box 29	Folder 9	10/1981	Report - "Documentation for CFC V, Fifth Harvard Fire Code"
		by H. E. Mitler & H. W. Emmons	
Box 29	Folder 10	10/1981	Report - "A Computational Model for Subsonic Compressible Flow in Diffusers"
		by R. E. Childs, J. H. Ferziger & S. J. Kline	
Box 29	Folder 11	9/1982	Paper - "A Mathematical Model for Estimating Available Safe Egress Time in Fires"
		by Leonard Y. Cooper	
Box 29	Folder 12	6/18/1982	Paper - "Numerical Modeling of One-Dimensional Enclosed Homogeneous & Heterogeneous Deflagrations"
Box 29	Folder 13	8/1982	aper - "A Concept for Estimating Available Safe Egress Time in Fires"
		Pby Leonard Y. Cooper	
Box 29	Folder 13	8/1982	Paper - "A Concept for Estimating Available Safe Egress Time in Fires"
		by Leonard Y. Cooper	
Box 29	Folder 14	12/1982	Thesis - "Mathematical Model of a Ventilation Controlled Compartment Fire"
		by James M. Sauer	
Box 29	Folder 15	4/1983	Report - "A Review of Compartment Fire Models" by Walter W. Jones
		by Walter W. Jones	
Box 29	Folder 16		Notes - Comments and Corrections to Mark 5
Box 29	Folder 17	6/1983	Paper - " A Simple Correlation for Predicting Temperature in a Room Fire"
		by James Quintiere	
Box 29	Folder 18	8/1983	Report - "A Model of a Multiroom Fire Spread"
		by Takeyoshi Tanaka	
Box 29	Folder 19	9/2/1983	Paper - "Analysis of the Forced Ventilation in Containership Holds"
		by Howard K. Baum & John A. Rockett	
Box 30	Folder 1	12/1983	Report - "Computer Fire Code VI - Volume 1"
		by J. B. Gahm	
Box 30	Folder 2	12/1983	Report - "Computer Fire Code VI - Volume 2"
		by J. B. Gahm	

Box 30	Folder 3	c. 1983	Paper - "Deterministic Modeling of Unconfined Turbulent Diffusion Flames"
		by Yuji Hasemi & Tazo Tokunaga	
Box 30	Folder 4	1983	Paper - "A Concept for Estimating Available Safe Egress Time in Fires"
		by Leonard Y. Cooper	
Box 30	Folder 5	5/1984	Report - "Modeling of Aircraft Cabin Fires"
		by Michael A. Delichatsios	
Box 30	Folder 6	5/1984	Paper by Leonard Y. Cooper
		"The Need & Availability of Test Methods for Measuring the Smoke Leakage Characteristics of Door Assemblies"	
Box 30	Folder 7		Early Calculations - "Old Deli - MGM Fire"
Box 30	Folder 8		New Calculations - "MGM Fire" by Emmons
Box 30	Folder 9	6/1984	Paper - "Premixed Combustion"
		by P. A. Libby, S. Sivasegaram & J. H. Whitelaw, Imperial College of Science & Technology, London	
Box 30	Folder 10	7/10/1984	est Data - LLNL 1983/1984 Model Test Data
		from Lawrence Livermore Laboratory - Forced Ventilation Data	
Box 30	Folder 11	8/1984	Letter & Computer Program - in Pascal from Forensic Engineering
Box 30	Folder 12	9/1984	Report - "Modeling of Aircraft Cabin Fires"
		by M. A. Delichatsios	
Box 30	Folder 13	1984	Report - "Bench-Scale Methods for Prediction of Full-Scale Fire Behavior of Furnishings and Wall Lin
		by Vytenis Babrauskas	
Box 30	Folder 14	c. 1984	Paper - "Math Model of a Fire in a Compartment having Combustible Walls and Ceiling"
		by Edwin E. Smith	
Box 30	Folder 15	c. 1984	Paper - "The Buoyant-Plume-Driven Adiabatic Ceiling Temperature Revisited"
		by Leonard Y. Cooper & Anne Woodhouse	

Series XII: Papers, Reports and Computer Software Guides on Fire Modeling

MS 06_0012 Personal Papers

Container List

Container	Folder	Date	Title
Box 31	Folder 1	3/28/1985-5/2/1985	Notes - Stability Analysis - by Emmons
Box 31	Folder 2	n.d., c. 1985	Paper - "Refinement of a Multiroom Fire Spread Model"
		by T. Tanaka & K. Nakamura [2 copies]	
Box 31	Folder 3	7/1985	Paper - "Heat Transport in Fire Compartment Prediction and Experiment with Small Scale Model"
		by Tokiyoshi Yamada	
Box 31	Folder 4	9/1985	Report - "Data Sources for Parameters Used in Predictive Modeling of Fire Growth & Smoke Spread"
		by Daniel Gross, National Bureau of Standards	

Box 31	Folder 5	10/1985	Report - "Comparison of Several Compartment Fire Models: An Interim Report"
		by H. E. Mitler	
Box 31	Folder 6	10/3/1985	Computer Program - FAST - Source Code
Box 31	Folder 7	10/1985	Report - "A Program for the Development of a Benchmark Compartment Fire Computer Code"
		by Leonard Y. Cooper, John A. Rockett, Henri E. Mitler & David W. Stroup	
Box 31	Folder 8	11/1985	Report by David W. Stroup
		"The Establishment of a Catalog of Compartment Fire Model Algorithms and Associated Computer Subroutines"	
Box 31	Folder 9	n.d., c. 1985	Notes-Predicted Flow of Water from a Tube - computations, graphs, etc.
		by Howard W. Emmons	
Box 31	Folder 10	n.d.	Notes - H. W. Emmons
Box 31	Folder 11	3/1986	Report by L. M. Pietrzak & G. A. Johanson
		"A Physically Based Fire Suppression Computer Simulation for Post-Flashover Compartment Fires"	
Box 31	Folder 12	4/1986	Report - "'Fireform' - A Computerized Collection of Convenient Fire Safety Computations"
		by Harold E. Nelson	
Box 31	Folder 13	5/1986	Report - "The NBS/Harvard Mark VI Multi-Room Fire Simulation"
		by John A. Rockett & Masahiro Monta	
Box 31	Folder 14	8/1986	Paper - "Salt Water Modeling of Fire Induced Flows in Multicompartment Enclosures"
		by K. D. Steckler, H. R. Baum & J. G. Quintiere	
Box 31	Folder 15	12/13/1986	Paper - "A Program for the Development of a Benchmark Compartment Fire Model Computer Code"
		by L. Y. Cooper, J. A. Rockett, H. E. Mitler & D. W. Stroup	
Box 31	Folder 16	n.d., c. 1987	Paper - "Predicting Capability of a Multiroom Fire Model"
		by Kazuhito Nakamura	
Box 31	Folder 17	9/1986	Guide - "Users' Guide to FIRST, a Comprehensive Single-Room Fire Model"
		by Henri Mitler & John Rockett	
Box 31	Folder 18	1987	Paper - "Room Fire Modeling with a Computer-Aided Design Framework"
		by Frederick W. Mowrer & Robert Brady Williamson	
Box 31	Folder 19	1987	Paper - "Analyzing Far Field Effects"
		by Howard W. Emmons	
Box 31	Folder 20	1987	Paper - "A Summary of the Assumptions and Limitations in Hazard I"
		by Richard W. Bukowski	
Box 31	Folder 21	1/1987	Paper by Glenn P. Forney & Leonard Y. Cooper
		"A Plan for the Development of the Generic Framework and Associated Computer Software for a Consolidated Compartment Fire Model Computer Code"	
Box 32	Folder 1	8/1987	Report - "A Catalog of Compartment Fire Model Algorithms & Associate Computer Subroutines"
		by David W. Stroup	

Box 32	Folder 2	8/1987	Report - WPI Qualifying Project Report - "Monte Carlo Fire Simulation"
		by Warren E. Blaisdell - 5/1987	
Box 32	Folder 3	7/1987	Guide - "Hazard I - Vol. 1: Fire Hazard Assessment Method"
		by R. W. Bukowski, W. W. Jones, B. M. Levin, C. L. Forney, S. W. Stiefel, V. Babrauskas, E. Braun & A. J. Fowell, NBS	
Box 32	Folder 4	7/1987	Guide - "Hazard I - Vol. 2: Representative Example Case Documentation"
		by R. W. Bukowski & A. J. Shibe, NBS	
Box 32	Folder 5	n.d, c. 7/1987	Guide - "Hazard I - Getting Started"
		by Richard W. Bukowski	
Box 32	Folder 6	7/1987	Guide - "Hazard I. Vol. 3: Data Base Listing"
		by R. W. Bukowski & E. Braun, NBS	
Box 33	Folder 1	7/1987	Report - "Comparisons of NBS/Harvard VI Simulations & Full-Scale, Multi-Room Fire Test Data"
		by John A. Rockett, Masahiro Morita & Leonard Y. Cooper	
Box 33	Folder 2	8/1987	Thesis - WPI Thesis by Douglas K. Beller
		"Alternate Computer Models of Fire Convection Phenomena for the Harvard Computer Fire Code"	
Box 33	Folder 3	9/1987	Guide - "Users' Guide to FIRST, a Comprehensive Single-Room Fire Model"
		by Henri E. Mitler & John A. Rockett	
Box 33	Folder 4	11/1987	Paper - "Computer Model of a Smoldering Cigarette"
		by H. E. Mitler & W. D. Davis	
Box 33	Folder 5	11/1987	Paper - "A Computer Model of Smoke Movement by Air Conditioning Systems (SMACS)"
		by John H. Klote	
Box 33	Folder 6	1987 & 1988	Correspondence - re. Hazard 1 Computer Program
		H. W. Emmons, Doug Walton, Richard Bukowski	
Box 33	Folder 7	c. 1987-1989	Letters - to colleagues re. FIRST program
		from H. W. Emmons	
Box 33	Folder 8	1988	Paper - "Two-Dimensional Modeling of Flame Propagation in Fuel Stream Arrangements"
		by R. H. Rangel & W. A. Sirignano	
Box 33	Folder 9	12/1987	Report - "Algorithm for the Mass-Loss Rate of Burning Wall"
		by Henri E. Mitler [2 copies]	
Box 33	Folder 10	n.d., c. 1988	Paper - "Plume Analysis above Finite Size Fire Sources"
		by A. K. Gupta, Surendra Kumar & Bani Singh	
Box 33	Folder 11	1988	Paper - "The Fractional Effective Dose Model for Assessment of Toxic Hazards in Fires"
		by Gordon E. Hartzell & Howard W. Emmons	
Box 33	Folder 12	3/1988	Computer Data - Cathedral Hills Data Summary, University of California Fire Research Laboratory
Box 33	Folder 13	6/6/1988	Memo - re. Radiation Modeling of Large Scale Fires
		from J. de Ris, Factory Mutual	

Box 33	Folder 14	8/26/1988	Memo - "Compatibility of Tewarson data and FIRST"
		from Craig Beyler to H. Emmons, H. Mitler, J. Rockett, J. Barnett, P. Sherman, A. Tewarson	
Box 33	Folder 15	9/1988	Evaluation - "Hazard I - Results of a User Evaluation of the Prototype Software"
		by T. W. Bukowski, and letter to H. W. Emmons	
Box 33	Folder 16	1/1989	Paper - "Counterflow Spray Combustion Modeling"
		by G. Continillo & W. Sirignano	
Box 33	Folder 17	1989	Paper - "An Evaluation of the Point-Source Approximation in Spray Calculations"
		by R. H. Rangel & W. A. Sirignano	
Box 33	Folder 18	1989	Papers by Emmons and related materials
		"Use of Fire Test Data in Fire Models," "Introduction to the Phenomena of a Comprehensive Fire Model," "Comprehensive Building Fire Model"	
Box 34	Folder 1	c. 1989	Computer Programs - and related materials - Harvard Mark VI, FIRST
Box 34	Folder 2	5/29/1989	Report - "Using the Harvard/NIST MARK VI Fire Simulation"
		by John A. Rockett	
Box 34	Folder 3	12/14/1989	Paper - "Modeling the Flow-Assisted Flame Spread along Conveyor Belt Surfaces"
		by C. C. Hwang, C. D. Litton, F. J. Perzak & C. P. Lazzara	
Box 34	Folder 4	c. 1989/1990	Report - WPI/Harvard Version 2 - Appendices B-D
Box 34	Folder 5	1/1990	Paper - "Fire Hazard Prediction - Hazard I and its role in fire codes and standards"
		by Richard W. Bukowski	
Box 34	Folder 6	n.d., c. 1990	Paper - "Mathematical Modeling of Enclosure Fires"
		by Henri E. Mitler	
Box 34	Folder 7	1990	Paper - "Scale Modeling of fires with Emphasis on Room Flashover Phenomenon"
		by S. Jolly & K. Saito	
Box 34	Folder 8	1990	Paper - "Numerical Modeling of a Vaporizing Multicomponent Droplet"
		by C. M. Megardis & W. A. Sirignano	
Box 34	Folder 9	7/1990	Paper - "Prediction of a Liquid Jet in a Gaseous Crossflow"
		by F. Tsau, S. Eighobashi & W. A. Sirignano	
Box 34	Folder 10	8/1990	Report - "Development of the WPI/Harvard Version 2 Computer Fire Model"
		[draft] by David B. Satterfield - M. S. Thesis	
Box 34	Folder 11	8/1990	Letter & Summary - Consolidated Compartment Fire Model (CCFM.VENTS)
Box 34	Folder 12	7/1990	Report - "Consolidated Compartment Fire Model (CCFM) Computer Code - Part I: Physical Basis"
		by Leonard Y. Cooper & Glenn P. Forney [plus disk]	
Box 34	Folder 13	7/1990	Report - "CCFM Computer Code - Part II: Software Reference Guide"
		by Glenn P. Forney & Leonard Y. Cooper	
Box 34	Folder 14	7/1990	Report - "CCFM Computer Code - Part III: Catalog of Algorithms & Subroutines"
		ed. by Leonard Y. Cooper & Glenn P. Forney	

Box 35	Folder 1	7/1990	Guide - "CCFM Computer Code - Part IV: User Reference Guide"
		by Glenn P. Forney, Leonard Y. Cooper & William F. Moss	
Box 35	Folder 2	8/1990	Guide - "WPI/Fire Version 2 - User's Guide"
		prepared by David B. Satterfield & Jonathan R. Barnett	
Box 35	Folder 3	1/1991	Paper - "Three-Dimensional Droplet Interacts in Dense Sprays"
		by I. Kim, S. E. Elghobashi & W. A. Sirignano	
Box 35	Folder 4	12/12/1991	Correspondence - Hazard I Users Group, NIST
Box 35	Folder 5	1991	Paper - "Reconstruction of Fire Whirls Using Scale Models"
		by S. Soma & K. Saito	
Box 35	Folder 6	1991	Paper - "Use of numerical simulation computer codes to fire problems in nuclear power plants in Fin
		by O. Keski-Rahkonen, E. Eloranta & R. Huhtanen	
Box 35	Folder 7	1995 or after	Presentation - "Fire Models in the 21st Century"
		by H. W. Emmons	

Series XIII: Papers and Reports on Test Methods

MS 06_0013 Personal Papers

Container List

Container	Folder	Date	Title
Box 35	Folder 8	7/31/1956	Report by G. P. deLhery & W. L. Derksen, Naval Material Lab
		"The Relative Spectral Energy Distribution of the Naval Material Laboratory Carbon-Arc Source of Intense Thermal Radiation"	
Box 35	Folder 9	4/1959	Report by S.B. Martin, U.S. Naval Radiological Defense Laboratory
Box 35	Folder 10	1/7/1960	Report - "Radiant Heat Sources Employed in Thermal Radiation Studies"
		by Jefferson A. Carter, N. Y. Naval Shipyard	
Box 35	Folder 11	6/15/1961	Report - "Investigation of the Thermodynamic Properties of the Combex-ADL Natural Gas Burner"
		prepared by Arthur D. Little, Inc.	
Box 35	Folder 12	8/31/1961	Paper - "A Burner with an Electrical Discharge Superimposed on the Combustion Flame"
		by David L. Richardson & Bela Karlovitz	
Box 35	Folder 13	4/1966	Paper - "Calorimeter for Determining Radiation & Convection in Small-Scale Combustion"
		by R. J. McCarter & A. Broido	
Box 35	Folder 14	n.d., c. 1969	Paper - "Apparatus for Rate Studies of Vapor Producing Reactions"
		by R. J. McCarter	
Box 35	Folder 15	2/1969	Paper - "Smoke & Gases Produced by Burning Aircraft Interior Materials"
		by D. Gross, I.J. Loftus, t. G. Lee & V. E. Gray	
Box 35	Folder 16	8/1970	Proposal - "A New Approach to Development of Installation Standards for Fire Detectors"
		by Gunnar Heskestad & Cheng Yao, Factory Mutual Corp.	

Box 35	Folder 17	11/1972	Paper - "Modeling Techniques for Prediction of Fires"
		by J. deRis	
Box 35	Folder 18	12/18/1972	Paper - "BFD/Harvard Carbon Monoxide-Oxygen Sampler Program - Progress Report"
		by Reinhard Sidor & William K. Burgess	
Box 35	Folder 19	1/1973	Technical Note by T. G. Lee, NBS
		"The Smoke Density Chamber Method for Evaluating the Potential Smoke Generation of Building Materials"	
Box 35	Folder 20	8/22/1973	Paper - "An Evaluation of Flame Spread Test Methods for Floor Covering Materials"
		by James Quintiere & Clayton Huggett, NBS	
Box 35	Folder 21	4/1975	Paper - "The Explosion Risk of Stored Foam Rubber"
		by W. D. Woolley & S. A. Ames, Building Research Establishment	
Box 35	Folder 22	n.d., c.1974	Paper - "Mathematical Modeling of Radiant Panel Test Methods"
		by J. A Rockett, NBS	
Box 35	Folder 23	8.1975	Report by A. Murty Kanury & Donald J. Holve
		"A Theoretical Analysis of the ASTM E-119 Standard Fire Test of Building Construction & Materials"	
Box 35	Folder 24	9/1975	Report - "Thermal & Flow Characteristics of the ASTM E84 Tunnel Test Method"
		by James G. Quintiere & James W. Raines	
Box 35	Folder 25	10/1975	Paper - "Problems in the Correlation of Small & Large Scale Tests"
		by Irwin A. Benjamin, Center for Fire Research	
Box 35	Folder 26	10/1975	Paper by James Quintiere
		"The Application & Interpretation of a Test Method to Determine the Hazard of Floor Covering Fire Spread in Building Corridors"	
Box 35	Folder 27	10/1975	Report by Stanley B. Martin
		"Characterization of the Stanford Research Institute Large-Scale Heat-Release- Rate Calorimeter"	
Box 35	Folder 28	12/1975	Report - "Proposed Criteria for use of the Critical Radiant Flux Test Method"
		by Irwin A. Benjamin & Howard Adams, Center for Fire Research	
Box 35	Folder 29	9/1976	Report by Archibald Tewarson & Francesco Tamanini
		"Research & Development for a Laboratory-Scale Flammability Test Method for Cellular Plastics"	
Box 35	Folder 30	8/1977	Technical Note - "An Investigation of the Fire Environment in the ASTM E84 Tunnel Test"
		by William J. Parker, NBS	
Box 36	Folder 1	10/1977	Report -"A Laboratory-Scale Test Method for the Measurement of Flammability Parameters"
		by Archibald Tewarson & Russell F. Pion	
Box 36	Folder 2	1/1978	Report - "Wind-Aided Flame Spread Along a Horizontal Fuel Slab - I. Without Radiative Transfer"
		by George F. Carrier, Francis E. Fendell & Phillip S. Feldman	
Box 36	Folder 3	n.d., c. 1979	Paper by James Quintiere
		"A Simplified Theory for Generalizing Results from a Radiant Panel Rate of Flame Spread Apparatus" [draft]	
Box 36	Folder 4	12/1979	Report - "Rate of Heat Release Test-Calibration, Sensitivity & Time Constants of 150 RHR Apparatus"
		by Dan Bluhme & Ryszard Getka	

Box 36	Folder 5	11/1980	Paper by James Quintiere
		"A Simplified Theory for Generalizing Results from a Radiant Panel Rate of Flame Spread Apparatus" [final]	
Box 36	Folder 6	9/1981	Report - "Reduced-Scale Modeling of Mobile-Home Fires: A Progress Report"
		by David P. Klein	
Box 36	Folder 7	3/1982	Report - "Calculations of the Heat Release Rate by Oxygen Consumption for Various Applications"
		by W. J. Parker	
Box 36	Folder 8	6/1982	Report by B. C. Levin, A. J. Fowell, M. M. Birky, M. Paabo, A. Stolte and D. Malek
		"Further Development of a Test Method for the Assessment of the Acute Inhalation Toxicity of Combustion Products"	
Box 36	Folder 9	3/4/1983	Correspondence - on Proposed Bench-Scale Material Flammability Test
		from I. de Ris to R. Friedman, Factory Mutual System	
Box 36	Folder 10	4/1983	Report - "A Room Fire Screening Test Procedure"
		by Fred L. Fisher, Frederick W. Mowrer & Robert Brady Williamson	
Box 36	Folder 11	11/1984	Report - "New Concepts for Measuring Flame Spread Properties"
		by J. G. Quintiere & I. Harkleroad	
Box 36	Folder 12	11/1987	Report - "Fire Safety Inspection & Testing of Air Moving Systems"
		by John H. Klote	

Series XIV: Papers, Reports and Data on Properties

MS 06_0014 Personal Papers

Container List

Container	Folder	Date	Title
Box 37	Folder 1	1931-1982	Data - Steam & Water, Gases, Fuels, Freon
Box 37	Folder 2	1940s-1980s	Data - Various materials - Insulating materials, plastics, gases & flammability
Box 37	Folder 3	5/1966	Papers
		by T. Wakamatsu, Atsushi Saima & T. G. Lee1962-1975 Bulletin - "Combustion of Hydrocarbons - Property Tables - Tables for Adiabatic Gas Temperature & Equilibrium Composition of Six Hydrocarbons" by Steffenson, Agnew & Olson, Purdue University	
Box 37	Folder 4		Data - Propane
Box 37	Folder 5	n.d.	Data - Propylene, Butane, Ethane, Isbutane
Box 37	Folder 6	11/1974	Publication - Current Work on Behavior of Materials at Elevated Temperatures
		Reports for 1974 ASME Meeting	
Box 37	Folder 7	6/1977	Paper - "Influence of External Heat Flux on Polymer Flammability" by A. Tewarson
Box 37	Folder 8	1980	Paper - "Potential Fire Hazard of a Furnished Compartment" by E. E. Smith
Box 37	Folder 9	11/1980	Report - "Physico-Chemical & Combusion/Pyrolysis Properties of Polymeric Materials" By A. Tewarson
		Folder 9: Report - "Physico-Chemical & Combusion/Pyrolysis Properties of Polymeric Materials" By A. Tewarson	

Box 37	Folder 10	1/1982	Report - "Analysis of Full-Scale Timber Fire Tests in a Simulated Mine Gallery" by A. Tewarson
Box 37	Folder 11	4/1982	Report - "Quantification of fire Properties of Fuels & Interaction with Fire Environment"
		By A. Tewarson	

Series XV: Papers and Reports on Radiation

MS 06_0015 Personal Papers

Container List

Container	Folder	Date	Title
Box 37	Folder 12	c. 1955	Paper - "Activation Energies in High Temperature Combustion" by John B. Fenn & Hartwell F. Calcote
Box 37	Folder 13	1957	Paper - "Brandoverslag door straling" by Lie Tiam Tjoan
Box 37	Folder 14	6/1961	Paper - "Radiative Transfer in Combustion Chambers" by H. C. Hottel
Box 37	Folder 15	1961	Paper - "Some Problems in Radiative Transport" by H. C. Hottel [draft]
Box 37	Folder 16	8/1963	Paper - "The Ignition of Thin Sheets by Radiation from Nuclear Weapons" by H. C. Hottel
Box 37	Folder 17	n.d.	Paper - "Effect of Radiant Heat on Cellular Polyethers" by K. T. Paul
Box 37	Folder 18	8/1974	Report - "Radiative Transfer of Multi-Dimensional Flow Geometries" by S. C. Traugott
Box 37	Folder 19	2/1975	Report - "Radiative Heat Transfer from Products of Combustion in Building Corridor Fires"
		by K. Bromberg & J. G. Quintiere	
Box 38	Folder 1	7 & 8/1976	Correspondence - re. radiative heat transfer from ceiling layer to differential surface
		from J. de Ris to A. T. Modak & from A. T. Modak to M. K. Mathews	
Box 38	Folder 2	8/1976	Paper - "Scaling of Radiative Characteristics of Turbulent Diffusion Flames"
		by G. H. Markstein	
Box 38	Folder 3	n.d., c.1977	Paper - "Infrared Mean Absorption Coefficients of Luminous Flames & Smoke"
		by G. L. Hubbard & C. L. Tien	
Box 38	Folder 4	1977	Paper by P.Durbetski & C. Thom-Anderson
		"Effect of Heat Flux Level & Exposure Time to a Radiant Heat Source on the Thermal Radiative Properties of Cellulosic & Themoplastic Materials"	
Box 38	Folder 5	8/1977	Paper - "Radiation Augmented Fires Within Enclosures"
		by A. T. Modak & M. K. Mathews	
Box 38	Folder 6	8/1977	Paper by J. D. Felske & C. L. Tien
		"The Use of the Milne-Eddington Absorption Coefficient for Radiative Heat Transfer in Combustion Systems"	
Box 38	Folder 7	11/1977	Paper - "Intermediate-Scale & Full-Scale Studies of Fire Smoke Layers"
		by G. H. Markstein	
Box 38	Folder 8	11/29/1977	Correspondence - "Determination of Radiation Properties of Elevated Pressure Wall Fires"
		from R. L. Alpert, Factory Mutual System	
Box 38	Folder 9	1977	Papers by A. C. Fernandez-Pello
		"Downward Flame Spread Under the Influence of Externally Applied Radiation" & "Upward Laminar Flame	

Spread Under to Influence of Externally Applied Thermal Radiation"

Box 38	Folder 10	c. 1977	Paper - "The heat radiation from petroleum fires"
		by Bengt Hagglund	
Box 38	Folder 11	1978	Paper - "Radiation from Burning Hydrocarbon Clouds"
		by James A. Fay, Gary J. Desgroseilliers & David H. Lewis, Jr.	
Box 38	Folder 13	8/1978	Paper - "Radiation from Smoke Layers"
		by L. Orloff, A. T. Modak & G. H. Markstein	
Box 38	Folder 14	12/1979	Paper - "Influence of oxygen depletion on the radiative properties of PMMA Flames"
		by Giulio Santo & Francesco Taminini, Factory Mutual	
Box 38	Folder 15	c. 1980	Paper - "Scanning-Radiometer Measurements of the Radiance Distribution in PMMA Pool Fires"
		by George H. Markstein, Factory Mutual	
Box 38	Folder 16	3/1982	Report - "Flame Heights, Flame Radiation & Flame Spread"
		by Patrick J. Pagni	
Box 38	Folder 17	11/1984	Report - "Radiant Emission & Absorption by Laminar Ethylene & Propylene Diffusion Flames"
		by G. H. Markstein & J. de Ris	
Box 38	Folder 18	1988	Paper - "Numerical Study on Interactions of Turbulent Convection & Radiation in Compartment Fires"
		by Toru Fusegi & Bakhtier Farouk	
Box 38	Folder 19	c. 1990	Paper -"Long-Range Research Plan for Fire Suppression"
		no author given	
Box 38	Folder 20	1990	Paper - "Methods to Characterize Heat Release Rate Data"
		by Frederick W. Mowrer & Robert Brady Williamson	
Box 38	Folder 21	1991	Paper - "Heat Transfer Regimes in Microstructures"
		by M. I. Flik, B. I. Choi, & K. E. Goodson	
Box 38	Folder 22	1961-1964	Reports - "A Model Study of the Interaction Effects of Mass Fires"
		Reports 1, 2, & 3 *- 1 & 2 by A. A. Putnam & C. F. Speich* *- 3 by I. M. Grinberg & A. A. Putnam*	

Series XVI: Papers and Reports on Mass Fire, MS 06_0016 Personal Papers

Container List

Container	Folder	Date	Title
Box 38	Folder 23	2/10/1966	Report - "The Use of Models for the Investigation of Fire Spread"
		by Lester Eggleston, Andrew J. Pryor, W. D. Weatherford, Jr. & Calvin H. Yuill	
Box 38	Folder 24	10/19/1967	Report - "Urban Mass Fire Scaling Considerations"
		by W. J. Parker	

Box 39	Folder 1	3/1968	Report - "Mass Fire Life Hazard"
		by A. J. Pryor, F. A. Fear & R. J. Wheeler	
Box 39	Folder 2	7/10/1968	Report - "An Experimental Test of Mass Fire Scaling Principles"
		by W. J. Parker, R. C. Corlett, B. T. Lee	
Box 39	Folder 3	1969	Report - "Project Flambeau…An Investigation of Mass Fire" (1964-1967)
		Final Report Vols. 1, 2, 3. *Vol. 1 by Clive Countryman,* *Vol. 2 Catalog by Thomas Palmer,* *Vol. 3 Appendixes by Theodore Storey & others*	
Box 39	Folder 4	1969	Report - "Mass Fire Scaling with small electrically heated models"
		by B. T. Lee	
Box 39	Folder 5	2/1970	Report - "Non-Gray Thermal Radiation from a Flame above a pool of Liquid Natural Gas"
		by David C. Wilcox	

Series XVII: Papers and Reports on Pyrolysis

MS 06_0017 Personal Papers

Container List

Container	Folder	Date	Title
Box 39	Folder 6	7/12/1951	Report - "Equilibrium Composition & Thermodynamic Properties of Combustion Gases Part 3"
		by William s. McEwan & Daniel B. Lovett, U. S. Navy	
Box 39	Folder 7	1956 & n.d.	Papers - re. textiles and combustibility
		Papers - re. textiles and combustibility	
Box 39	Folder 8	1958/1963	Report - "Theories of the Combustion of Wood and Its Control"
		by F. L. Browne	
Box 39	Folder 9	7/1959	Report - "High Temperature Behavior of Teflon"
		by Tunis Wentink, Jr.	
Box 39	Folder 10	c. 1962-1971	Papers - 5 papers re. moisture and/or heat transfer in wood
Box 39	Folder 11	1965	Report -"Some Research Pertaining to the Problem of Predicting the Burning Rate of Cellulosic Fuels"
		by P. L. Blackshear, Jr., K. A. Murty & N. Murayama	
Box 39	Folder 12	n.d., c. 1965	Report by K. Akita & M. Kase
		"Determination of Kinetic Parameters for Pyrolysis of Cellulose & Cellulose Treated with Ammonium Phosphate by Differential Thermal Analysis and Thermal Gravimetric Analysis"	
Box 39	Folder 13	1-3/1968	Papers - 3 Papers from Fluid Dynamic Laboratory by G. Drennan, R. Matula, R. Bright
		"Pyrolysis of Tetrafluoroethylene," "Thermal Decomposition of Perfluoropropene" & "Gas Chromatographic Separation of Low Molecular Weight Fluorocarbons"	
Box 39	Folder 14	2/1968	Paper -"Thermal Decomposition Products of Polyvinyl Chloride"
		by Yoshio Touchiya & Kikuo Sumi	

Box 39	Folder 15	4/1968	Paper - "High Temperature Moisture Relations to Grand Fir"
		by M. D. Strickler, & letter from Strickler	
Box 39	Folder 16	8/1968	Paper - "Study on Smoke Generation from Building Materials"
		by Fumiharu Saito	
Box 39	Folder 17	12/1968	Report - "The High Temperature Pyrolysis of Simple Organic Molecules & the Formation of O2"
		by A. R. Fairbairn	
Box 39	Folder 18	1968	Paper - "Thermodestruction & Thermooxidative Destruction of Polyurethanes"
		by O. G. Tarakanov, V. A. Orlov & V. K. Beljakov - U.S.S.R.	
Box 40	Folder 1	5/1969	Paper - "Structural Design & Thermal Properties of Polymers"
		by G. F. D'Alelio	
Box 40	Folder 2	8/1969	Report - "Pyrolysis Products of Untreated & Flame Retardant Treated a-cellulose & levoglucosan"
		by Frank A. Wodley	
Box 40	Folder 3	1969-1971	Reports - re. decomposition of PVC & phenol-formaldehyde resins
		from Fire Research Station, Hertfordshire	
Box 40	Folder 4	1970s	Reports - re. Insulating Board
		5 papers	
Box 40	Folder 5	1/1970	Paper - "Elevated Temperature Tensile & Creep Properties of Some Structural & Prestressing Steels"
		by T. Z. Harmathy & W. W. Stanzak	
Box 40	Folder 6	1970	Papers - 2 papers re. cellulose by A. Broido & M. Weinstein
		"Thermogravimetric Analysis of Ammonia-Swelled Cellulose" & "Pyrolysis-Crystallinity Relationships in Cellulose"	
Box 40	Folder 7	1971	Paper - "Influence of Temperature & Time upon Pyrolysis of Untreated & Fire Retardant Treated Wood"
		by K. M. Knudson & R. B. Williamson	
Box 40	Folder 8	10/1974	Paper - "Char Yield on Pyrolysis of Cellulose"
		by A. Broido & Maxine A. Nelson	
Box 40	Folder 9	2/1974 & 1/1975	Papers - by K. N. Palmer, W. Taylor & T. Paul, Building Research Establishment
		"Fire hazards of plastics in Furniture & Furnishings: characteristics of the burning" and "…ignition studies"	
Box 40	Folder 10	1975 & 1976	Reports & Papers - Flame/Combustion & Excess Pyrolyzate Production by Cellular Plastics
		Fire Research Group, UC Berkeley	
Box 40	Folder 11	1975-1979	Reports - re. flammability and plastics for Factory Mutual Research Corp.
		by Archibald Tewarson and others	
Box 41	Folder 1	c. 1976	Paper - "Excess Pyrolyzate"
		by P. J. Pagni & T. M. Shih	
Box 41	Folder 2	c. 1976	Report - "Flammability Testing of Polymers"
		by A. Murty Kanury, Norman J. Alvares, Stanley B. Martin	
Box 41	Folder 3	1977	Paper - "Vapor-phase Thermal Analysis of Pyrolysis Products from Cellulosic Materials"
		by Kun Min	

Box 41	Folder 4	11/1986	Papers by Douglas A. Olson
		"Absorptivity of OCF Fiberboard for Solar Radiation" & "Emissivity of OCF Fiberboard to Thermal Radiation"	
Box 41	Folder 5	n.d., c. 1986	Papers - "Comparisons of Completenes of Combustion for Alcohol & Alkane Laminar Wall Fires"
		by S. F. Malary & J. K. Awad	
Box 41	Folder 6	2/23/1987	Report - "Isothermal Degradation of untreated & fire retardant treated cellulose at 350 Degrees C"
		by A. E. Lipska	
Box 41	Folder 7	1989	Manuscripts - "Combustion Properties of Pure & Fire Retarded Cellulose"
		3 parts, by Abdelkader Frendi & Merwin Sibulkin & Yi Chen & Sant Tewari	
Box 41	Folder 8	6/1991	Report by Leonard Y. Cooper
		"Applications of the Generalized Global Equivalence Ratio Model (GGERM) for Predicting the Generation Rate & Distribution of Products of Combustion in Two-Layer Fire Environments - Methane & Hexanes"	

Series XIIX: Papers and Reports on Sprinklers

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Box 44	Folder 1	published 1919	Paper - "Dilution Limits of Inflammability of Gaseous Mixtures"
		by H. F. Coward, A.W. Carpenter & W. Payman	
Box 44	Folder 2	12/1936	Paper - "The Mechanical Solution of Simultaneous Equations"
		by John B. Wilbur, MIT	
Box 44	Folder 3	3/1942	Report - "Design of a Nozzle Producing Uniform Supersonic Airflow"
		by Andrew Vazsonyi	
Box 44	Folder 4	1940-1950	Papers - on Relaxation Methods
		includes two notes to Howard Emmons & Emmons' lecture notes	
Box 44	Folder 5	1946 & 1947	Papers by Arthur Kantrowitz and by Paul W. Huber & A.Kantrowitz
		"Heat Capacity Lag in Gas Dynamics" *"Heat Capacity Lag Measurements in Various Gases"*	
Box 44	Folder 6	reprinted 1947	Book - The General Principles of Wave Mechanics by W. Pauli
		book in German and typed pages in English	
Box 44	Folder 7	3 & 6/1947, 1956	Papers by W. C. Johnston, Westinghouse Electric, plus letter from author
		"Flame Velocities of Gases & Vapors by the Bunsen Burner Method" *"Flame Propagation Rates at Reduced Pressures"*	
Box 44	Folder 8	6/1947	Report - "Flame Propagation - Critical Review of Existing Theories"
		by George H. Markstein & Michael L. Polanyi - 6/1947	
Box 44	Folder 9	1948-1953	Reports - "The Theory of Flame Propagation"
		6 volumes - by J. O. Hirschfelder & Others	
Box 44	Folder 10	1950 & 1951	Memoranda - "The Combustion of Drops in a Fuel Spray" & "A Note on Radiation Heat Transfer"
		by G. A. E. Godsave	
Box 45	Folder 1	1950-1952	Reports - "The Burning of Single Drops of Fuel"
		5 parts [5 reports] by G. A. E. Godsave, National Gas Turbine Est., England	
Box 45	Folder 2	2/1951	Memorandum - "An Experimental Study of the Evaporation & Combustion of Falling Droplets"
		by J. E. C. Topps	
Box 45	Folder 3	4/1951	Memorandum - "The Evaporation of Spheres in a Hot Air Stream"
		by W. Gohrbandt, England	
Box 45	Folder 4	1952	Paper - "Experiments on the Burning & Extinction of Liquid Fuel Spheres"
		by A. B. Spalding	
Box 45	Folder 5	c. 1953	Report -"Experimental Studies of Transport Phenomena in Highly Ionized Gases"
		by Beryl Edward Clotfetter	
Box 45	Folder 6	1953	Publication - "References to Scientific Literature on Fire - Part VII 1953, Library Bibliography"
		by Miss E. M. Shakeshaft & Mrs. B. F. W. Rogowski	
Box 45	Folder 7	7/1953	Report - "Theory of Laminar Flame Stability"
		by J. B. Rosen	

Box 45	Folder 8	c. 1954	Paper - "The Effects of Chemical and Physical Parameters on the Burning Rate of a Liquid Droplet"
			by Henry Wise, Jack Lorell & Bernard J. Wood
Box 45	Folder 9	1954	Paper by D. B. Spalding
			"The Calculation of Mass Transfer Rates in Absorption, Vaporization, Condensation & Combustion Processes"
Box 45	Folder 10	1954 & 1955	Reports by G. Klein
			"Equations of a Simple Flame Solved by Successive Approximations to the Solution of an Integral Equation" - 3 papers
Box 45	Folder 11	1/1956	Report - "An Experiemental Investigation of Impact & Shock Wave Break-Up of Liquid Drops"
			by A. R. Hanson, F. G. Domich & H. S. Adams
Box 45	Folder 12	c. 1956	Paper - "Flame Temperatures of Limit Mixtures"
			by M. G. Zabetakis, S. Lambiris & G. S. Scott
Box 45	Folder 13	5/1956	Paper - "Some Limiting Oxygen Concentrations for Diffusion Flames in Air Diluted with Nitrogen"
			by R. F. Simmons H. G. Wolfhard
Box 45	Folder 14	10/1956	Paper by R. M. Fristrom & A. A. Westenberg
			"Flame Zone Studies IV - Microstructure & Material Transport in a Laminar Propane-Air Flame Front"
Box 45	Folder 15	1956	Paper - "Dynamics of a dissociating gas - Part I Equilibrium Flow"
			by M. J. Lighthill
Box 45	Folder 16	12/20/1956	Report - "The Combustion of Droplets. Influence of Forced Convection"
			by C.S. Tarifa & G. Millan, Instituto Nacional de Teenica Aeronautica
Box 45	Folder 17	6/1957	Paper - "Apparent emission intensities from a turbulent flame composed of wrinkled Laminar flames"
			by F. Williams & A. E. Fuhs
Box 45	Folder 18	6/1957	Technical Note - "A Theory of Flame Propagation Limits due to Heat Loss"
			by E. Mayer
Box 45	Folder 19	9/1957	Report - "Non-Stationary Combustion Studies"
			by D. Bitondo, N. Thomas & D. Perper
Box 46	Folder 1	10/14/1957	Report by Edwin S. Campbell & Robert M. Fistram
			"Reaction Kinetics, Thermodynamics & Transport in the Hydrogen-Bromine System: A Survey of Properties for Flame Studies"
Box 46	Folder 2	10/18/1957	Paper - "Study of the Mechanism of Flame Extinguishment by Aluminum Chloride"
			by Joseph B. Levy & Raymond Friedman
Box 46	Folder 3	1/1958	Report by D. B. Spalding & M. D. Samain
			"The analogue solution of temperature distribution and extinction in an idealised cylindrical flame"
Box 46	Folder 4	2/24/1958	Report by A. B. Miller, A. Capella & A. B. Spalding
			"Research on Study of the Turbulent Flame Properties of Elementary Combustion Chamber Flow Patterns" [2 copies]
Box 46	Folder 5	3/1958	Report - "Flame Studies in a Flat Flame Burner"
			by William T. Biedler, III & H. E. Hoelscher

Box 46	Folder 6	1958	Paper by D. B. Spalding
			"Approximate solutions of transient & two-dimensional flame phenomena: constant-enthalpy flames"
Box 46	Folder 7	1958	Paper - "Production and Measurement of Single Drops, Sprays & Solid Suspensions"
			by James A. Browning
Box 46	Folder 8	1958 & 1959	Reports by Combustion Group - Instituto Nacional de Technica Aeronautica
			"Homogeneous Combustion & Characteristics of Laminar Flames" *"Heterogeneous Combustion & Combustion of Monopropellant Droplets & "Fuel Sprays"*
Box 46	Folder 9	1/31/ 1959	Report - "Distribution of Radicals in Laminar Flames"
			Parts 1 & 2, by G. Millan & I. DaRiva, Instituto Nacional de Technica Aeronautica
Box 46	Folder 10	1959 & 1960	Reports by Joseph O. Hirschfelder & others University of Wisconsin
			"Value of Diffusion Coefficients which produce constant enthalpy in flames & detonations" & "The Propagation of A-B-C Flames"
Box 46	Folder 11	7/25/19	Paper - "Theory of flame-front stability"
			by Wiktor Eckhaus
Box 46	Folder 12	9/26/1960	Paper - "Recent Developments of Fire Research"
			by D. I. Lawson
Box 46	Folder 13	1960	Papers by D. C. Drucker, R. S. Rivlin and B. Sternberg
			"Plasticity" *"Some Topics in Finite Elasticity"* *"On Some Recent Developments in the Linear Theory of Elasticity"*
Box 46	Folder 14	1960	Papers by L. W. Morland & E. H. Lee, and by E.H. Lee
			"Stress Analysis for Linear Viscoelastic Materials with Temperature Variation" *"Viscoelastic Stress Analysis"*
Box 46	Folder 15	2/1962	Paper - "The Burning Rate of Liquid Fuels from Open Trays by Natural Convection"
			by D. B. Spalding
Box 46	Folder 16	c. 1962	Paper - "Flame Heights & Burning Rates of Liquid Fuels in Open Tanks"
			by Sami Atallah
Box 47	Folder 1	6/1/1964	Report - "Effect of Moisture on Surface Flammability of Coated & Uncoated Cellulosic Materials"
			by T. G. Lee, J. J. Loftus & D. Gross
Box 47	Folder 2	6/1965	Report - "Investigation of the High Pressure Helium Arc Plasma by Microwave Cavity Techniques"
			by William T. Maloney
Box 47	Folder 3	9/1965	Report - "Nonequilibrium Anomalies in the Development of Diffusion Flames"
			by P. M. Chung, F. E. Fendell & J. F. Holt
Box 47	Folder 4	1/1966	Paper - "Thin-flame theory for a fuel droplet in slow viscous flow"
			by Francis E. Fendell, Maureen L. Sprankle & David S. Dodson
Box 47	Folder 5	12/1966	Report by Richard Shao-lin Lee
			"Turbulent Natural Convection Plume above a Finite Circular Source of Mass Momentum & Buoyancy"

Box 47	Folder 6	1/1967	Paper by Walter K. Tang
		"Effect of Inorganic Salts on Pyrolysis of Wood, Alpha-Cellulose & Lignin Determined by Dynamic Thermogravimentry"	
Box 47	Folder 7	6/1967	Paper - "Investigation of a Turbulent Radial Wall Jet"
		by M. Poreh, Y. G. Tsuei & J. E. Cermak	
Box 47	Folder 8	1967	Bulletin - "Thermophysical Properties of Bark of Shortleaf, Longleaf & Red Pine"
		by William E. Reifsnyder, Lee P. Herrington & Karl W. Spalt	
Box 47	Folder 9	9/15/1968	Report by L. H. Back
		"Conservation Equations of a Viscous, Heat-Conducting Fluid in Curvilinear Orthogonal Coordinates"	
Box 47	Folder 10	12/1968	Paper - "Flammability & Fire Resistance of Textiles"
		by R. Bruce Leblanc	
Box 47	Folder 11	1969	Paper by K. E. Torrance, Orloff & J. A. Rockett
		"Numerical Study of Natural Convection in an Enclosure with localized heating from below - creeping flow to the onset of laminar instability"	
Box 47	Folder 12	3/19/1970	Paper - "A rapidly varied flow phenomenon in a two-layer flow"
		by D. L. Wilkinson & I.R. Wood	
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		by James A. Fay, Marcel Escudier, David P. Hoult	
Box 47	Folder 14	1970	Articles - 5 articles from Combustion Science & Technology
		"Some Considerations re. problem of wood-burning" by A. M. Kanury & P. L. Blackshear, Jr. *"Influence of Free Convection on Ignition of Vertical Cellulosic Panels by Thermal Radiation" by N. Alvares, P. Blackshear, Jr. & A. M. Kanury* *"On the Combustion of Wood - I & II" by P. Blackshear, Jr. & A. M. Kanury* *"Duct Fires" by John de Ris*	
Box 47	Folder 15	4/1971	Report - "Scaled Room Flashover"
		by Thomas E. Waterman	
Box 47	Folder 16	2/2/1972	Correspondence by C. Yao, Factory Mutual System
		"Comments on Rack Storage - Relative Performance of ½ inch & 17/32 inch Orifice Sprinklers"	
Box 47	Folder 17	5/1972	Report - "An Asymptotic Analysis of Unsteady Diffusion Flames for Large Activation Energies"
		by A. Linan & A. Crespo	
Box 47	Folder 18	5/1973	Paper - "The role of dynamic pressure in generating fire wind"
		by R. K. Smith, B. R. Morton & L. M. Leslie	
Box 47	Folder 19	5/1973	Paper - "Dynamics of timber fires in mines"
		by Dr. A Whillier, South Africa	
Box 47	Folder 20	10/1973	Report - "The Effect of Strain on Diffusion Flames"
		by George F. Carrier, Francis E. Fendell & Frank E. Marble	
Box 47	Folder 21	1973 & c. 1988	Papers - 2 papers on flame spread & interior finish materials
		"Contribution of interior finish materials to fire growth in a room" by J. B. Fang & D. Gross *"Flame Spread Evaluation for Thin Interior Finish Materials" by F. Mowrer & R. B. Williamson*	

Box 47	Folder 22	1,3.4/1974 & c. 1975	Notes
		3 Technical Notes re. Turbulent Jets, by R. A. Antonia, R. W. Bilger & R. E. Beck, "A Note on Favre Averaging in Variable Density Flows" by R. W. Bilger	
Box 47	Folder 23	1974	Paper - "The Burning of Vertical Wooden Slabs"
		by Hsiang-Cheng Kung	
Box 48	Folder 1	5/28/1974	Report by I. N. Einhorn, M. M. Birky, M. L. Grunnet, S. C. packham, J. H. Petajan, J. D. Seader
		"The Physiological & Toxicological Aspects of Smoke Produced during Combustion of Polymeric Materials"	
Box 48	Folder 2	7/1974	Report - "Fire Drainage: A New Approach to Fire Safety"
		by T. Z. Harmathy	
Box 48	Folder 3	8/1974	Report by Donald N. Chi
		"Mathematical Study of a Propagating Flame & Its Induced Aerodynamics in a Coal Mine Passageway"	
Box 48	Folder 4	9/1974	Paper - "Toward an Understanding of Fire-Scar Formation: Field Observation & Laboratory Simulation"
		by A. Malcolm Gill	
Box 48	Folder 5		Papers - 2 Papers on Buildings
		"A Probabilistic Approach to Structural Fire Safety" by T. T. Lie	
		"Fire Resistance of Reinforced Concrete Columns" by T. T. Lie & Dr. E. Allen	
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		by T. T. Lie & W. W. Stanzak	
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		Society of Fire Protection Engineers- draft	
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		by A. Muraszew & J. B. Fedee, Aerospace Corp. for USDA Fire Service	
Box 48	Folder 9	1975	Paper - "Turbulent Ceiling-Jet Induced by Large Scale Fires"
		by R. L. Alpert	
Box 48	Folder 10	n.d., c. 1975	Paper - "Reverse Stratified Flow in Duct Fires: A Two-Dimensional Approach"
		by C. C. Hwang, R. F. Chaiken, J. M. Singer & D. N. H. Chi	
Box 48	Folder 11	c. 1975	Paper - "Behavior of Fire in Compartments"
		by Raymond Friedman	
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		by R. J. Mainstone	
Box 48	Folder 14	4/12/1976	Paper by B. T. Zinn, E A. Powell, R. A. Cassanova & C. P. Bankston
		"Investigation of Smoke Particulates Generated during the Thermal Degradation of Natural and Synthetic Materials"	
Box 48	Folder 15	5 & 8/1976	Paper - "Design of Buildings for Fire Safety"
		by T. Z. Harmathy	
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		by J. de Ris	

Box 48	Folder 17	1976	Paper - "Some experimental studies of vortex rings"
		by T. Maxworthy	
Box 48	Folder 18	8/1977	Paper - "The Importance of Externally Imposed Heat Flux on the Burning Behavior of Materials"
		by J. W. Rowen & J. W. Lyons	
Box 48	Folder 19	10/7/1977	Paper - "Infrared Mean Absorption Coefficients of Luminous Flames & Smoke"
		by L. Hubbard & C. L. Tien	
Box 48	Folder 20	1975-1978	Reports & Papers - Flame spread/combustion
		by professors at Case Western Reserve University	
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		by Ben T. Zinn	
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Box 49	Folder 3	1977-1979	Reports - re. buildings - by T. Z. Harmathy
		"Relationship between Fire Resistance & Fire Tolerance" *"Effect of the Nature of Fuel on the Characteristics of Fully Developed Compartment Fires"* *"Building Design & Fire Hazard"*	
Box 49	Folder 4	7/14/1978	Proposal - "Quantitative Smoke Measurement in ICBO Room Test Procedure"
		by Jack Kracklauer	
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		by C. C. Ndubizu & P. Durbetaki	
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		by J. G. Quintiere, B. J. McCaffery & W. Rinkinen	
Box 49	Folder 7	4/1979	Paper - "Flammability Limits" A Re-Examination"
		by Andrej Macek	
Box 49	Folder 8	1979	Report by M. M. Birky et. al., with tables & appendices
		"Development of Recommended Test Method for Toxicological Assessment of Combustion Products"	
Box 49	Folder 9	1979	Paper - "Model Coal Tunnel Fires in Ventilation Flow"
		by Robert F. Chaiken, Joseph M. Singer & Calvin K. Lee	
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		by T. T. Lie	
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		by Phiroz M. Bhagat	
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		from J. de Ris to L. Orloff, Factory Mutual System	
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		by Richard Land	
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		draft by E. e. Zukoski, Toshi Kubota & Baki Cetegen	

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Box 50	Folder 1	1980	Paper by M. Faghri & E. R. G. Eckert
			"Moisture Migration Caused by Periodic Temperature Fluctuations in an Unsaturated Porous Medium"
Box 50	Folder 2	1980	Paper by E.R. G. Eckert & M. Faghri
			"A General Analysis of Moisture Migration caused by Temperature Differences in an Unsaturated Porous Medium"
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			2 papers by Walter G. Bert & Byron M. Halpin
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			by T. Z. Harmathy
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			by T. Z. Harmathy
Box 50	Folder 6	1981	Paper - "Comparisons among Various Theories for Turbulent, Reacting, & Planar Mixing Layers"
			by S. F. Parker & W. A. Sirignano
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			by J. D. Buckmaster & G. S. S. Ludford
Box 50	Folder 8	2/12/1981	Paper - "The viscous spreading of plane and axisymmetric gravity currents"
			by Didden & T. Maxworthy
Box 50	Folder 9	4/14/1981	Paper by L. Y. Cooper, M. Harkleroad, J. Quintiere & W. Rinkinen
			"An Experimental Study of Upper Hot Layer Stratification in Full-Scale Multi- Room Fire Scenarios"
Box 50	Folder 10	12/1981	Report - "An Investigation of Fire Impingement on a Horizontal Ceiling"
			by Z. You & G. M. Faeth
Box 50	Folder 11	2/8/1982	Paper - "Finding Minimal Feedback Vertex Sets"
			by John D. Ramsdell
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Box 50	Folder 14	7/1982	Report by James G. Quintiere
			"An Assessment of Correlations Between Laboratory and Full-Scale Experiments for the FAA Aircraft Fire Safety Program" [Parts 1, 2, 4 & 5]
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			by F. A. Albini, USDA Fire Service

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		by Hiroshi Tsuh	
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		by Phiroz M. Bhagat	
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		by T. Z. Harmody	
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		by Seng Chuan Tan	
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		by I. Nakaya, T. Tanaka, M. Yoshida	
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		by Fred L. Fisher, Frederick W. Mowrer & Robert Brady Williamson	
Box 50	Folder 25	12/1983	Report by Leonard Y. Cooper
		"A Buoyant Source in the Lower of Two, Homogeneous, Stably Stratified Layers - A Problem of Fire in an Enclosure"	
Box 50	Folder 26	1983	Paper by Yuji Hasemi & Tazo Tokunaga
		"Some Experimental Aspects of Turbulent Diffusion Flames & Buoyant Plumes from Fire Sources against a Wall and in a Corner of Walls"	
Box 50	Folder 27	1983	Chapter - "The Physics of Dimensions"
		by T. A. McMahon & J. T. Bonner, from On Size & Life	
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		"Thermal Response of Unconfined Ceilings Above Growing Fires and the Importance of Convective Heat Transfer"	
Box 50	Folder 29	c. 1983	Paper - "Materials Fire Properties & Test Methods"
		by Patrick J. Pagni	
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		"A Research Study on the Potential Contribution of Carpets & Rugs to Toxic Emissions Hazards in Building Fires"	
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		by K. D. Steckler, H. R. Baum & J. G. Quintiere	

Box 51	Folder 2	1984	Paper - "Ignition & Burning of a Layer of Incomplete Combustion Products"
			by C. L. Beyler
Box 51	Folder 3	1984	Paper by Leonard Y. Cooper
			"The Thermal Response of Aircraft Cabin Ceiling Materials during a Post-Crash External Fuel Spill, Fire Scenario"
Box 51	Folder 4	1984	Paper - "Prediction of Corridor Smoke Filling by Zone Models"
			by Walter W. Jones & James G. Quintiere
Box 51	Folder 5	1984	Paper - "Smoke Movement in Rooms of Fire Involvement & Adjacent Spaces"
			by Leonard Y. Cooper
Box 51	Folder 6	2/1985	Report - "An Experimental Study of Negatively Buoyant Flows Generated in Enclosure Fires"
			by Y. Jaluria & D. Goldman
Box 51	Folder 7	9/19/1985	Paper - "Wall Flames and Implications for Upward Flame Spread"
			by James Quintiere & Margaret Harkleroad & Yuji Hasemi
Box 51	Folder 8	10/1985	Paper - "Microbursts: a hazard for aircraft"
			by P. F. Linden & J. E. Simpson
Box 51	Folder 9	11/1985	Abstract - "A PDF Method for Calculating Major Species Concentrations in Turbulent Fires"
			by M. A. Delichatsios & M. K. Mathews
Box 51	Folder 10	1985	Paper - "Effect of opposing buoyancy on the flow in free and wall jets"
			by Daniel Goldman & Yogesh Jaluria
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			by C. L. Beyler
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			by C. C. Hwang & J. D. Wargo
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			by B. Abramzon & W. A. Sirignano
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			by Alberto Schirmer, Jack Green & Kumar Ramoahalli
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		by James G. Quintiere	
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		"Unsteady Flame Propagation in a Spray with Transient Droplet Vaporization" by R. H. Rangel & W. A. Sirignano "Numerical Study of Multicompponent Fuel Spray Flame Propagation in a Spherical Closed Volume" by G. Continillo & W. A. Sirignano	
Box 51	Folder 26	1/1989	Paper - "Numerical Analysis of Convecting, Vaporizing Fuel Droplet with Variable Properties"
		by C. H. Chiang, M. S. Raju & W. A. Sirignano	
Box 51	Folder 27	4/1989	Report - "AIRNET - A Computer Program for Building Airflow Network Modeling"
		by George N. Walton	
Box 51	Folder 28	6/1989	Report - "Extinction of Tubular Premixed Laminar Flames with Complex Chemistry"
		by M. D. Smooke & V. Giovangigli	
Box 51	Folder 29	7/1989	Paper - "Fundamentals of Enclosure Fire 'Zone' Models"
		by James G. Quintiere	
Box 51	Folder 30	10/1989	Paper by Leonard Y. Cooper
		"Estimating the Environment & the Response of Sprinkler Links in Compartment Fires with Draft Curtains and Fusible Link-Actuated Ceiling Vents -Theory"	
Box 51	Folder 31	11/1989	Paper - "Species Production & Heat Release Rates in Two-Layered Natural Gas Fires"
		by E. E. Zukoski, J. H. Morehart, T. Kubota & S. J. Toner	
Box 51	Folder 32	1989	Outline - Fire Plume Model
		Drafts 0, 1, & 2, by Ed Zukoski	
Box 51	Folder 33	1989	Thesis - "Mixing in Density-Stratified Conjugate Flows"
		by Marco Rasi	
Box 51	Folder 34	n.d., c. 1989	Paper - "Concurrent Turbulent Flame Spread"
		by L. Zhou & A. C. Fernandez-Pello	
Box 52	Folder 1	5/1990	Paper - "The linear & nonlinear shear instability of a fluid sheet"
		by R. H. Rangel & W. A. Sirignano	
Box 52	Folder 2	7/1990	Paper - "Numerical & Experimental Assessments of the Thermal Response of a Thin Filament"
		by T. H. Chen, M. E. Post & L. P. Goss	
Box 52	Folder 3	7/1990	Paper by M. Bui & K. Seshadri
		"Comparison between experimental measurements & numerical calculations of the heptane-air diffusion flames"	

Box 52	Folder 4	7/1990	Paper - "Monochromatic Absorption of Luminous Flames"
		by Ahmet Selamet and Vedat S. Arpaci	
Box 52	Folder 5	8/1990	Paper - "Lag Times Associated with Fire Detection & Suppression"
		by Frederick W. Mowrer	
Box 52	Folder 6	1990	Paper -"Study of Mixing & Reaction in the field of a Vortex"
		by B. M. Cetegen and W. A. Sirignano	
Box 52	Folder 7	c. 1990	Paper - "Use of Small-Scale Test Data in Hazard Analysis"
		by Harold E. Nelson & Eric W. Forssell	
Box 52	Folder 8	1990 & 1991	Papers by J. P. Delplanque, R. H. Rangel & W. A. Sirignano
		"Liquid-Waste Incineration in a Parallel-Stream Configuration: Parametric Studies" *"Liquid Waste Incineration in a Parallel-Stream Configuration: Effect of Auxiliary Fuel"*	
Box 52	Folder 9	1/1991	Paper - "Ignition Delay of a Gas Mixture Above a Liquid Fuel Pool"
		by D. N. Schiller & W.A . Sirignano	
Box 52	Folder 10	1/1991	Paper - "Vaporization and Combustion of Metal Slurry Droplets"
		by R. Bhatia & W. A. Sirignano	
Box 52	Folder 11	2/1991	Paper - "A Study of the Early History of Soot Formation in Various Hydrocarbon Diffusion Flames"
		by K. Saito, A. S. Gordon, F. A. Williams & W. F. Stickle	
Box 52	Folder 12	4/10/1991	Notes - "Comparison of 2-D Computations & Experiments on Gravity Currents"
		"Comparison of 2-D Computations & Experiments on Gravity Currents" by R. G. Rehm	
Box 52	Folder 13	6/1991	Paper - "The Role of Laminar-Turbulent Transition in Gas Turbine Engines"
		by Robert Edward Mayle	
Box 52	Folder 14	1991	Paper by A. Ito, K. Saito & T. Inamura
		"Holographic Interferometry Temperature Measurements in Liquids for Pool Fires Supported on Water"	
Box 52	Folder 15	1991	Paper - "Measuring Rate of Heat Release by Oxygen Consumption"
		by Marc L. Janssens	
Box 52	Folder 16	1991	Paper - "A Study of Flame Spread over Alcohols using Holographic Interferometry"
		by A. Ito, D. Masuda & K. Saito	
Box 52	Folder 17	1991	Paper - "Buoyancy-Driven Turbulent & Diffusion Flames"
		by Vedat S. Arpaci & Ahmet Selamet	
Box 52	Folder 18	c. 1991	Paper - "Gaseous Product Emissions from Fires"
		by A. Tewarson	
Box 52	Folder 19	c. 1991	Paper - "Fire-Induced Reverse Stratified Flow in a Mine Heading"
		by V. B. Apte & J. H. Kent & A. R. Green	
Box 52	Folder 20	1992	Request for Comments, Underwriters Lab, includes Emmons' comments
		for First Edition of "Standard for Fire Test for Heat & Visible Smoke Release…"	
Box 52	Folder 21	1992	Paper - "Flow through a Horizontal Vent in an Enclosure Fire"
		by Q. Tan & Y. Jaluna	

Box 52	Folder 22	1992	Paper - "Formulation of the Statistical Equations of Turbulent Flows with Variable Density"
			by Alexandre J. A. Favre
Box 52	Folder 23	10/1992	Paper - "Development of Composite Heat Release Rate Curves for Multiple Burning Items"
			by Arthur J. Parker
Box 52	Folder 24	1992	Paper by S. Venkatesh & K. Saito
			"Estimates on the effect of chlorine on the global soot production rates in Laminar hydrocarbon-air diffusion flames"
Box 52	Folder 25	1993	Publication - Encyclopedia of Fluid Mechanics -Supplement 1- "Applied Mathematics in Fluid Dynamics"
			ed. by Nicholas P. Cheremisinoff
Box 52	Folder 26	c. 1993	Paper - "Effects of Viscosity on Gravity Currents in the Inertial Regime"
			by W. R. Chan, T. Kubota & E. E. Zukoski
Box 52	Folder 27	11/24/1993	Paper - "Simulation of Smoke Plumes from Large Pool Fires"
			by H. R. Baum, K. B. McGrath & R. G. Rehm, & Emmons' review
Box 52	Folder 28	1993	Papers - 3 papers on incineration by Thomas B. Shen
			"Burning Stabilization in a Rotary Kiln Incinerator" *"Incineration Systems"* *"Burning of Multisized Element Fuel Assembly with Interactions in Rotary Incinerator"*
Box 52	Folder 29	1994	Proposal - "Numerical Simulation & Experimental Study of Smoke in Uncontrolled Fire"
			by Shuh-Jing Ying
Box 52	Folder 30	1994	Paper - "Smoke Movement Driven by a Fire under a Ceiling"
			by Graham Atkinson & Gabriel Rooney - 2 drafts
Box 52	Folder 31	c. 1994	Paper - "Flow of Smoke & Hot Gases due to a Fire in Open Vertical Shafts"
			by A.P. Mercier & Y. Jaluria
Box 52	Folder 32	1995	Dissertation Abstract by Yongsheng Yang, U. of Arizona
			"Free-Radicals Augmentation and large Eddy Probability- Density Simulation for High-Speed Turbulent Combusting Jets"
Box 52	Folder 33	c. 1995	Paper - "Fire Growth: An Overview"
			by J. G. Quintiere
Box 53	Folder 1	Summer 1995	Report -- "Modern Solid Waste Incineration - A Combustion Application"
			by Thomas B. C. Shen
Box 53	Folder 2	8/1995	Paper - "Combined Buoyancy & Pressure-Driven Flow through a Shallow, Horizontal, Circular Vent"
			by L. Y. Cooper
Box 53	Folder 3	1995	Paper - "Flow of Smoke & Hot Gases Across Horizontal Vents in Room Fires"
			by Y. Jaluria, W. K. S. Chiu & S. H. K. Lee
Box 53	Folder 4	1995	Paper - "Compartment Fire Experiments: Comparison with Models"
			by N. A. Dembsey, I. J. Pagni & R. B. Williamson
Box 53	Folder 5	1995	Paper - "Wall fires and the approach to flashover in an enclosure"
			by Henri E. Mitler & Kenneth D. Steckler

Box 53	Folder 6	1995	Paper by Barbara C. Levin
		"New research avenues in toxicology: 7-gas N-gas, toxicant suppressants, & genetic toxicology"	
Box 53	Folder 7	1995-1998	Papers - re. erosion and sediments by Wilbert Lick & others
Box 53	Folder 8	c. 1996	Article - "Thermonuclear Flame Theory"
		by Robert Neil Cherdack	
Box 53	Folder 9	1996	Thesis by Robert Neil Cherdac
		"A Study of Thermonuclear Deflagration Waves in Magnetically Confined Deuterium-Tritium Plasmas"	
Box 53	Folder 10	7/1996	Paper - "Flame Heights in Wall Fires: Effects of Width, Confinement & Pyrolysis Length"
		draft, by Mickael Coutin, Gilles Kolb, Jean-Michel Most	
Box 53	Folder 12	8/1996	Memorandum by Robert G. Deissler, for NASA
		"Turbulent Fluid Motion V - Fourier Analysis, the Spectral Form of the Continuum Equations, & Homogeneous Turbulence"	
Box 53	Folder 13	12/1996	Paper- "A Practical CFD Simulating Model of Gaussian Plume Dispersion for Toxic & Explosive Species"
		by Dee H. Wong	
Box 53	Folder 14	1996	Papers - Hydrodynamic model/vertical water entry - basilisk lizard
		by J. W. Glasheen & T. A. McMahon	
Box 53	Folder 15	6/1/1996 & 5/18/1997	Papers - "A Steady-Flow Fusion Burner" & "Beyond Fusion Ignition"
		by Robert A. Gross	
Box 53	Folder 16	1997	Paper - "Experimental Study of the Exchange Flow through a Horizontal Ceiling Vent in Atrium Fires"
		by Tokiyoshi Yamada	
Box 53	Folder 17	c. 1997	Paper - "Using Risk Models in Regulation: A Regulatory Effectiveness Analysis"
		by Vincent Brannigan & Carol Smidts	
Box 54	Folder 1	11/1997	Papers - 2 papers on flows associated with flames on inclined surfaces &2 photocopies of photographs
		by D. D. Drysdale	
Box 54	Folder 2	12/1997	Paper - "Modeling of Aspirated Thermocouples (suction pyrometers) for Fire Research"
		by Linda G. Blevins & William M. Pitts	
Box 54	Folder 3	1986-1993	Papers/articles - on Superfluid/Helium II
		by Russell Donnelly & others	
Box 54	Folder 4	c. 1997	Paper - "Computational Studies on Cyclone Gasifiers & Combustors"
		by A. Kumar, I. J. Paul & H. S. Mukunda	
Box 54	Folder 5	c.1997	Paper by Lynda Brahmi, Thomas Vietoris & Pierre Joulain
		"The Effect of Parietal Fuel Injection on the Geometry of a Low Velocity Laminar Diffusion Flame"	
Box 54	Folder 6	c. 1997	Paper - "The Optics of Small Diffusion Flames in Microgravity"
		by Fred Carleton, Derek Dunn-Rankin & Felix Weinberg	
Box 54	Folder 7	1/1998	Paper by O. A. Beg, H. S. Takhar, V. Prasad
		"Thermoconvective Flow in a Saturated, Isotropic, Homogeneous Porous Medium using Brinkman's Model: Numerical Study"	

Box 54	Folder 8	c. 1998	Paper by Thomas Vietoris, Pierre Joulain & Jose Torero
			"Experimental Observations on the Geometry & Stability of a Laminar Diffusion Flame in Micro-Gravity"
Box 54	Folder 9	5/1998	Report - Panel for Building & Fire Research Assessment of NIST Programs
Box 54	Folder 10	8/1998	Paper-"Nonlinear &Interactive Effects in the sorption of Hydrophobic Organic Chemicals by Sediments"
			by Rich Jepson & Wilbert Lick
Box 54	Folder 11	8/1998	Paper by N. L. Smith, N. P. Megalos, G. J. Nathan, D. K.k kZhang & J. P. Smart
			"The Rose of Fuel Rich Clusters in Flame Stabilization and Nox Emission Reduction with Precessing Jet P. F. Flames"

Series XXI: National Bureau of Standards

MS 06_0021 Personal Papers

National Institute of Standards and Technology Publications and Projects

Container List

Container	Folder	Date	Title
Box 54	Folder 12	1982	Publication --National Bureau of Standards - Fire Research Publications
Box 54	Folder 13	9/1982	Publication -- National Bureau of Standards - Special Publication 639
			Fire Research & Safety, with paper by H. Emmons, p. 236, "The Computer Fire Code
Box 54	Folder 14	1993	Projects -- National Institute of Standards & Technology
			Building and Fire Research Projects Laboratory
Box 54	Folder 15	1993	Projects -- National Institute of Standards & Technology
			Building and Fire Research Laboratory In-House Projects and Grants
Box 55	Folder 1	1993	Publication -- National Institute of Standards & Technology
			National Institute of Standards & Technology 1993 Annual Conference on Fire Research Book of Abstracts
Box 55	Folder 2	1995 - 8/1995	Projects -- National Institute of Standards & Technology
			Building and Fire Research Laboratory Project Summaries
Box 55	Folder 3	1996 - 10/28-31/1996	Publication -- National Institute of Standards & Technology
			Annual Conference on Fire Research: Book of Abstracts

Series XXII: Photographs of People

MS 06_0022 Photographic Print

Container List

Container	Folder	Date	Title
Box 55	Folder 4	9/1966	Photograph, Kyoto, Japan
			IUGG-IUTAM Symposium on boundary layers and turbulence including geophysical applications [group photograph]

Box 55	Folder 5	1992	Photograph - 12th Joint Panel Meeting - UJNR Panel on Fire Research & Safety
		group photograph	

Series XXIIV: Print Photographs of Fire-related subjects, 1950s-1994

MS 06_0023 Photographic Print

Container List

Container	Folder	Date	Title
Box 55	Folder 6	1950's	Photographs - Spinning Detonation
		were with G. I. Taylor materials	
Box 55	Folder 7	c. 1950s	Photographs - these were with 1950s materials 1951-53…Flow instabilities in compressors, etc.]
Box 55	Folder 8	c. 1965	Photographs
		not labeled, but found with 1965 report by H. W. Emmons: "The Arc Measurement of High Temperature Gas Transport Properties"	
Box 55	Folder 9	c. 1973-1980	Photographs - from Notebook Folder - course materials, includes information on properties
		photocopies are with notebook materials	
Box 55	Folder 10	1983	Photographs - Fire Growth at the MGM
Box 55	Folder 11	8/1986	Photographs - "Salt Water Modeling of Fire Induced Flows in Multicompartment Enclosures"
		by Steckler, Baum & Quintiere	
Box 55	Folder 12	1994	Photograph - sent with paper "Smoke Driven by a Fire under a Ceiling"
		by Atkinson & Rooney	

Series XXIV: Photographic Slides of Fire-related subjects

MS 06_0024 Photographic Print

Container List

Container	Folder	Date	Title
Box 55	Folder 13	c. 1982/1983	Slides - from Slide Box 1 [arbitrary number] - box said "Emmons/Mitler 'good'"
Box 55	Folder 14	c. 1982/1983	Slides - from Slide Box 2 [these may go with Slide Box 1]
Box 55	Folder 15	n.d.	Slides - C J Jump [Emmons' label] - from Slide Box 3
Box 55	Folder 16	n.d.	Slides - Natural Convection & Burning Ceiling [Emmons' titles] from Slide Box 3
Box 55	Folder 17	n.d.	Slides - MGM [Emmons' label]- from Slide Box 3
		Folder 17: Slides - MGM [Emmons' label]- from Slide Box 3	
Box 55	Folder 18	n.d.	Slides - Jokes [Emmons' label] - from Slide Box 3
Box 55	Folder 19	n.d.	Slides - Vent Flow [Emmons' label] & The Home Fire [Emmons' label] -from Slide Box 4

Box 55	Folder 20	n.d.	Slides - no title - graphs & equations/2 photographs of Jarrah Forest - from Slide Box 4
Box 55	Folder 21	1991-1993	Slides - from notebook labeled "Ceiling Jet - Book 2" from Slide Box 5
Box 55	Folder 22	c. 1975-1993	Slides - from notebook labeled "Ceiling Jet - Book 2" from Slide Box 5

Series XXV: Films

MS 06_0025 Film

Container List

Container	Folder	Date	Title
Box 56	Folder 1	1974	Film - 16 mm, 7" reel - Home Fire Project
		"1974 Full-Scale Fire Test - Harvard FMRC"	
Box 56	Folder 2		Film - 16 mm, 7" reel - Home Fire Project
Box 56	Folder 3		Film - 16 mm, 7" reel - Home Fire Project

Series XXVI: Computer Print-Outs (not listed)

MS 06_0026 Personal Papers

Container List

Container	Folder	Date	Title
Box 57			Computer Print-Outs

Series XXVII: Computer Disks 5"

MS 06_0027 Personal Papers

Container List

Container	Folder	Date	Title
Box 58			

Series XXIIX: Computer Handbooks

MS 06_0028 Book

Container List

Container	Folder	Date	Title
Box 59	Folder 1		NIST Handbook 146 - 2 handbooks in case
		Reference Guide for Hazard I *Technical Reference Guide & Example Cases*	
Box 59	Folder 2		FPETOOL VER. 3.2 Handbook

Series XXIX: Legal Cases

MS 06_0029

Personal Papers

Container List

Container	Folder	Date	Title
Box 60		1964-1975	Legal Cases
Box 61		1975-1984	Legal Cases
Box 62		1984-1991	Legal Cases

Series XXX: Legal - Sandra K. Thornhill vs. Ronnie's Truck Stop

MS 06_0030

Personal Papers

Container List

Container	Folder	Date	Title
None			

Series XXXI: Legal - Cathedral Hill Hotel Fire

MS 06_0031

Personal Papers

Container List

Container	Folder	Date	Title
None			

Series XXXII: Legal - Nawn vs. State Industries

Ms 06_0032

Personal Papers

Container List

Container	Folder	Date	Title
None			