

rail (the long journey fortified by Brenda's fruit cake) to Bochum as part of a 'klein gruppe' to SICCIM the second of such congresses - my fare was half price!

It was at this time that Brenda began her research into Turnpike trusts and their capital formation which led to her PhD from the LSE in 1992. Having become a leading authority on the Bath Turnpike Trusts followed by a detailed study on the shareholders behind the construction of the Avon Navigation she then turned her attention to the manufacture of gunpowder and its ramifications. This work, originally locally focussed, with articles such as those on the Wooley Powder Works in IA Review 1981 and on the Bristol region in the Transactions of the Newcomen Society in 1985/6 was to become, via the International Committee for the History of Technology (ICOHTEC), the subject for which she became internationally known. It was Brenda's interest in gunpowder that led Neil - as the then Director of the Science Museum in London - to propose her as a trustee of the Waltham Abbey gunpowder mills project in which she

became very active, especially in ensuring that proper conservation standards were maintained. Brenda edited and contributed to several of the seminal volumes on gunpowder which were to show that this source of energy was to change the world. Having provided a note on the lack of appreciation of the international significance of gunpowder in BIAS Vol 19 1986 she returned to a local gunpowder works in Bath History X 2005.

Brenda was a great support to Angus in the later years of HOTRU, she contributed a chapter on Warfare and Society to the book *The Engineering Revolution: How the Modern World was Changed by Technology* which was edited by Angus and produced to mark the 50th anniversary of the Unit. She continued to be a HOTRU Visiting Research Fellow to the end.

These notes were prepared for the BIAS website and forthcoming BIAS Bulletin. We are grateful to BIAS for allowing us to reprint them here.

Dr Emory L. Kemp

A personal tribute by Dr Roland Paxton

The eminent Industrial archaeologist and engineering historian Dr Emory Leland Kemp, born in Chicago on 1 October 1931, died from heart failure at Morgantown WV, on 20 January 2020. He is survived by his wife Janet and three children.

I first met Emory in 1976 through my Institution of Civil Engineers' Panel for Historical Engineering Works activities. We corresponded and visited becoming firm friends. He was a devoted Methodist of a philosophical bent who equated his professional and academic life as analogous with the Pilgrim's Progress. On seeing this copy he reflected on its pilgrim passing through the wicket gate and a series of adventures ending in the Celestial City, a destination he wrote he hadn't reached in a professional way but in moving towards it he had 'gained great satisfaction in having made a commitment to academic life.'

From early in life Emory had a long-standing interest in science and mathematics and the creative aspects of building as represented in architecture and civil engineering. He entered the University of Illinois at the age of 16, graduating B.S. in 1952 with 'highest honors'. When there, during the Korean War, after first contemplating national service in the Navy, he served in the U.S. Army Corps of Engineers as an Assistant Engineer from 1952-4. He was then awarded a Fulbright Fellowship [1954-6] for study at Imperial College, London, obtaining his D.I.C. in 1955. Whilst there, his interest in historical engineering was whetted by Prof. A.W. Skempton. Afterwards, while engaged on a thesis at the University of London [M.Sc.1958], he worked with Sir Bruce White, Wolfe Barry on Kut Bridge in Iraq and thin-shell roof structures. Then, with Ove Arup on the preliminary design of Sydney Opera House, including its pre-stressed concrete concourse beams with Sir Ted Happold. Then back to the University of Illinois studying theoretical and applied structural mechanics and statically indeterminate structural analysis

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Emory commenting at Wheeling Bridge in 1999 © R.Paxton

[Ph.D 1962].

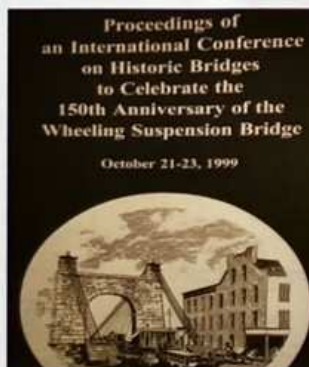
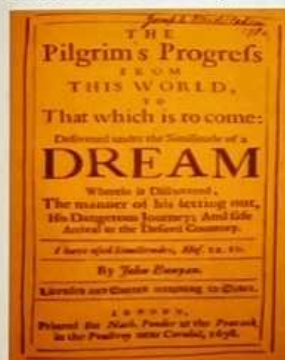
From 1969-74 Emory was head of the Civil Engineering Department of West Virginia University and after, until 1989, directed its History of Science and Technology Program, then as Professor and Founder Director of its Institute for the History of Technology and Industrial Archaeology until 2003. He taught classes in structural engineering, mechanics, history, industrial

archaeology, sociology and humanities.

Emory's distinctions included election to the Order of Vandalia for Distinguished Service to West Virginia University, ASCE's prestigious History and Heritage Award and in 2000, a Visiting Research Fellowship at the University of Edinburgh for which, with Robert Vogel, I was pleased to support his nomination. In 2003, at an ASCE annual meeting in Nashville I was delighted to agree to provide international support to a nomination for Emory to be an Honorary Fellow [now Distinguished Member] of ASCE which was successful.

By the time Emory retired from full time work in 2003 he had more than sixty publications to his name in the history of technology and industrial archaeology, including five books

as author or editor. As a preservation engineer he had been involved in 39 projects, a nationally significant achievement. He was particularly interested in the preservation of historic bridges and wrote about Capt. S. Brown's 'most impressive work' Union Bridge, Thomas Paine's pontification, and Charles Ellet and Wheeling Bridge. In 1996 he co-authored a paper on 'Edinburgh's First Water



Supply, involving Desaguliers, a project he felt 'tantamount to a revolution in hydraulic engineering' [Civ. Eng. Intl. Proc. ICE paper 11051, 1997, 45-49]. Liaison on these subjects of mutual interest cemented our friendship!

For the anniversary of Wheeling Bridge, the world's longest span in 1849, Emory organised an international conference on Historic Bridges based on state-of-the-art research, at which I greatly enjoyed his authoritative presentation on 'Charles Ellet Jr. and the Wheeling Suspension Bridge' [ICE PHEW Newsletter 84].

From time to time Emory gave lectures in the UK at PHEW's invitation, one at the Royal Society of Edinburgh in 1992, 'Early Iron Suspension and Timber Covered Bridges in the USA and their restoration' being particularly instructive and memorable.

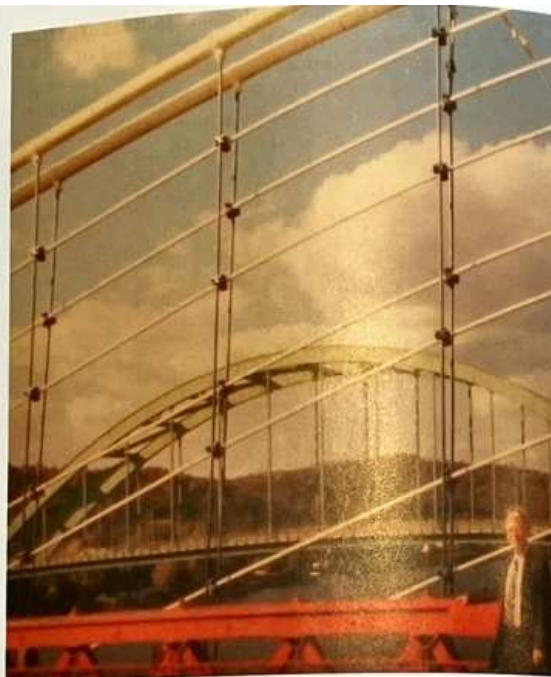
Most of my contact with Emory was from 1989 to 2003 when he was Director of the Institute for the History of Technology and Industrial Archaeology. During this period two periodicals that he directed and edited, fulfilling and exemplifying the Institute's remit and its activities, were its 'Review' and 'Field Notes' of which he sent me copies for many years.

Emory was supportive of PHEW's work and the extension of its recording remit 'to encourage excellence in conservation of the finest examples.' Also, its role in the £1.1m restoration of Jessop's Laigh Milton Viaduct [the world's oldest on a public railway; the Kilmarnock & Troon]. He was amused that before work started the ruinous viaduct was bought from its farmer owners for £2! Later, Emory visited Bo'ness Foundry where its 1996 plaques were cast [ICE PHEW Newsletter 86]. He welcomed Heriot-Watt University's support for engineering history and for hosting ICE Scotland Museum with its unique displays of historic water supply, railway and bridge items.

Emory's letters are evocative of his busy life. In 1996 he wrote to me: 'Even though our plans for 1997 are incomplete, we are projecting a trip to do research on moveable dams and also to visit England and Scotland. In the meantime Janet and I will be going to Australia for a lecture tour, our only holiday of any length this year. At present I am trying to complete a large manuscript on navigation on the Great Kanawha River a principal tributary of the Ohio River and one of the major waterways carrying coal in the USA. I also have a number of consulting projects in restoration, the most interesting of which is a complete restoration of Chenoweth's 1853 covered bridge [Phillipi]. We hope to have documents ready for letting a contract later in the summer before I leave for Australia.'

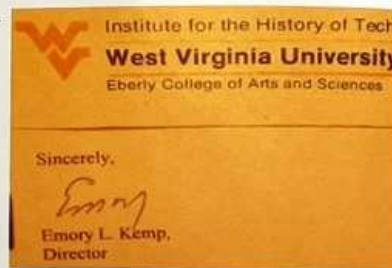
Two of Emory's projects of particular interest to me were his \$2m restoration as chief engineer of Phillipi Covered Bridge WV (1851) by 1991 after its 60% destruction by fire. Also, his restoration plan for Wheeling Bridge that preceded its \$2.8m restoration which I enjoyed inspecting with him in 1999.

Though these words can only give an idea of Emory's life and work, I feel he would have been delighted to sign them off!



The author at Wheeling Bridge after its restoration © E.L.Kemp

From a letter to the author dated 4 October 1999



- Select list of Dr Emory L. Kemp's published books:
 (editor) *Industrial Archaeology Techniques* (Malabar, FL: Kreiger Publishing Co. Inc., 1995)
History of the Great Kanawha Navigation (Pittsburgh Univ. Pr., 1998)
 (with) Beverly L. Fury. *The Wheeling Suspension Bridge. A Pictorial Heritage* (Pictorial Hist. Publications. Co., WV, 1999)
American Bridge Patents - The First Century, 1790- 1890 (Morgantown, West Virginia University Press, 2005)
Essays on the History of Transportation and Technology (Morgantown, West Virginia: West Virginia Univ. Pr., 2014)
Taming the Muskingum (Morgantown, WV Univ. Pr., 2016)



Railway & Canal Historical Society
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Railway History

Winner *London's District Railway - a history of the Metropolitan District Railway* (2 volumes) by M. A. C. Horne, published by Capital Transport Publishing.
Shortlisted - *The National Rifle Association, its Tramways and the London & South Western Railway* by Christopher Bunch, published by Pen & Sword Transport.
The Croesor Tramway, a History of the Tramways and Quarries of Cwm Croesor by Dave Southern with Adrian Barrell,

published by the Welsh Highland Railway Heritage Group.

North Eastern Railway Branch Lines: Lesser Railways around Darlington by Robin B. Coulthard and John G. Teasdale with co-authors John P. McCrickard and Richard V. Webster, published by the North Eastern Railway Association.
Henry Eoghan O'Brien, an Engineer of Nobility by Gerald M. Beesley, published by the author.