

Living Obituary – Derek K Hitchins

As of the spring of 2023, Derek Kirk Hitchins can be seen in his seafront apartment in Weston-super-Mare, Somerset—scene of a livelier youth—whence he strolls along the Prom with an independent air!

He was born at an early age in Glasgow, Scotland, with all the benefits of Scottish primary education; including an early introduction, to the tawse, a peculiarly Scottish two tonged leather strap for encouraging a rebellious spirit – which worked, developing in the bewildered, furious five-year old a smouldering resentment of injustice, having been tawsed by mistake. Freud would have revelled...



He escaped from that first infant-persecution school to a much better one, Hutcheson’s Grammar School for Boys, Crown Street, in the centre of Glasgow. With his elder brother, Peter, he commuted daily by bus into “Hutchie,” as it was known. The school was an oasis of learning in a very old building, in the notorious Gorbals area of Glasgow, and this was during WWII. Still, young Derek didn’t seem to notice, taking advantage of the thorough education provided by his beloved Miss Thomson who

evidently understood the peculiar behaviour of small boys...including those whose mothers had just died. Oh, and running the gauntlet after school to get past the poor local boys... good sprinting practice.

At the end of the war, aged 10, he travelled solo down to Shoeburyness, Essex, for a 6-month sojourn with his lovely grandmother and grandfather, where he passed the eleven plus examination, which, if memory serves, was a straightforward IQ test. And thence, once his father had followed from Scotland—with an acquired “wicked” stepmother—to Ealing in West London to be near his father’s work at the AEC, Southall.

Happily, his secondary education, at Ealing County Grammar School for Boys was most illuminating. Their idea was to educate, not just for immediate examinations, but for life. And it was good. He learned about art and music, Shakespeare and Goethe, mathematics, carpentry, gymnastics, and especially about physics, which he found to be ‘easy.’ – or so he thought. He also learned to box – or rather, to come second in boxing matches, while his opponents continually hurt their fists on his head...serve them right.

After five years, he gained his statutory GCE O levels, including one in German learned through a keyhole—his German teacher habitually expelled Hitchins from the class, so he listened to the lessons from the corridor—and, somehow, he enjoyed learning German. He also held, with curious pride and continuing defiance of his erstwhile Scottish teachers, the unofficial record for cane strokes received in a term. Strange boy.

Hitchins’ father had evidently had enough: so, with the oh-so ironic “I left school at 15, and it didn’t do *me* any harm,” denied him the opportunity to stay on at school and take ‘A’ Levels. He took and passed the Civil Service Entrance Examinations, but just missed out on the Foreign Service Selection, so he opted instead to become an RAF Apprentice—anything to leave what-passed-for home! He chose to go to RAF Cranwell, on the basis that he had seen some film about officer cadets, and wanted to be a test pilot (sic). As a result, he became an Air Radio Apprentice for three years, first at Cranwell—where the discipline exceeded Scottish infant school levels of brutality—then at the Radio School of RAF Locking, near Weston-super-Mare in Somerset, where discipline eased sufficiently for him to discover girls. Oh! And dancing, gymnastics, trampolining, diving—and fun! He hadn’t had much of that...

Nonetheless, he did well technically, graduating second out of over 100 in his, the 70th Entry. The top six apprentices in order of merit were usually given the opportunity to try for Cranwell Cadetships. But not young Hitchins, who—wearing forbidden civilian clothes—had taken a young lady to the now-infamous Colston Hall in Bristol a few weeks previously to see the Desert Song, only to sit next to his flight commander... oops. ‘Well, it’s just not done to wear uniform to the theatre, now is it? Sir?’ Oh, well...

So, he went into the adult RAF as a junior technician, then corporal, then corporal technician. It was the time of Suez, when the naïve young corporal technician was told to checkout the radio in a RN Venom, an aircraft he had not come across before. Also at RAF Upwood were Lincoln bombers, loaded to the gunwales with ammunition to ferry out to Aden: the Venom was pointing straight at one such Lincoln when Corporal Technician Hitchins accidentally pressed the firing trigger, releasing the clattering breeches on the four (mercifully unloaded) guns... oops again! Young ‘techie’ with strange pallor meets puce flight sergeant, object ritual disembowelment.

Then, one of those chance encounters on which hang, unsuspected, one’s future career. During morning coffee break he got into conversation, as you do, with a Canadian flight sergeant, about the nature of solids and liquids. The young corporal technician, remembering his school physics, declared glass to be more a super-cooled liquid than a solid. The flight sergeant declared this was nonsense. Later that month, Hitchins went back to his old school in Ealing, and borrowed a piece of Elizabethan window glass which, he remembered, had ‘flowed’ over the centuries, being thicker at the bottom than at the top; here was proof. On the following Monday morning at coffee break, Hitchins produced the precious, rare fragment of glass, whereupon the flight sergeant threw it on the ground, declaring: “clearly solid; liquids don’t shatter!” Hitchins decided on the spot that he really couldn’t continue working for such a moron...

In spite of this, Hitchins enjoyed his work, taking every chance to get airborne in Canberras, Ansons, Meteors, etc., but he felt limited as a radio technician. He took ‘day release’ (one morning per week for nine months) to study A Level Physics at Cambridge Technical College, just scraping a pass. He decided that he needed to enter for the Diploma of the University of Southampton (DUS) in Electronic Engineering, which was accessible to commissioned officers only: ‘Oh! Well, in that case I had better get a commission then...’ At which point he found himself back at RAF Cranwell, competing with young chaps straight from school, who also wanted to be commissioned. Only, he was competing, not to be a Cranwell Cadet, but to be a Henlow Cadet, their technical counterpart. Oops, again? Not really: this turned out to be rather good news.

His three years at Henlow were an eye opener, challenging him on every front: educationally, of course, as he had only one dodgy A Level, and was now up against some very bright young men, with oodles of A Levels, S Levels, and more; physically, as many of his new compatriots were good athletes, rugby players, squash players, rowers, runners, etc; and also socially, since young Hitchins had much to learn about being an officer and a gentleman in the RAF. Which he did, slowly, it has to be said: these were formative years, and he was a very rough diamond. He had been a poor runner, since birth, so He took up rugby, athletics (pole vaulting, throwing the hammer), rowing, squash, gymnastics, trampolining and anything else that would put up with him. Oh! And he joined the church choir as a tenor—well, it meant you didn’t have to take part in Sunday Church Parades... Hitchins was, as you might imagine, “having a ball;” and making





lifelong friends, too...

At the end of his three year cadetship, he was posted to RAF Duxford, Cambridgeshire, as a pilot officer in charge of the Radio Servicing Flight, where his earlier career as a radio technician proved invaluable – he could still remember how his mechanics and technicians thought, how they felt, and what they were trying to do... he also got to fly in Hunters and Javelins, and began to appreciate aircrew problems with radar, radio and avionics at first hand. He met and married his gorgeous wife, Patricia, who was in Air Traffic. 'It won't last,' her friends ejaculated; 62 years later, and with four sons and nine grandchildren, it seems they may have been a trifle premature.

Next posting was to be to RAF Wattisham, Suffolk, to the legendary Treble One Squadron which was re-equipping with the soon-to-be legendary Lightning.

Along with half a dozen other fine young men, the newly married Hitchins spent some nine months taking the various technician 'fitters' courses around the UK on each of the major subsystems in the Lightning: radar, missile, autopilot, pilot attack sight, navigation, communications, etc. These young officers were destined to become 'Lightning Weapon System Diagnosticians,' deemed necessary to sort out problems that could be foreseen in the new, complex avionics/weapons systems. Only, no one had told the senior technicians on the new Lightning squadrons, who had banded together to sort out any problems between them. So, the new officers arrived on squadron to find that their supposed diagnostic skills were redundant, but did they know about acceptable damage limits to Avon engine intake vanes? No? How about failing engine starter systems? No? What about reluctant tail chutes? No? Foreign Object Damage? No? Really? So, what *do* you know?

Another intense learning curve to climb! How to be an instant *mechanical* engineering officer when trained principally as an *electrical* engineer... very interesting: relieved by regular flights in the Lightning 2-seater, aerobatic detachments around Europe, squadron detachments to Cyprus (where it was hot enough to fry an egg on the Lightning's stainless steel wing), and by learning that it was possible, with care, to land the Lightning simulator inverted such that the next pilot would have extreme difficulty taking off... Oh, and, after a while, by Boards of Enquiry into accidents, which could be particularly challenging. And, just to fill in any spare time, lovely wife Pat had produced their first two sons, David and Roger.

Hitchins met a few people at Wattisham destined to become well known: his squadron engineer officer was Bill Richardson, who would become Chief Engineer of the RAF; and he played squash for the station team alongside Mike Graydon, who would become Chief of the Air Staff ACM Sir Michael Graydon. At the time, however, Mike was only just better than him at squash and was a member of 'that other lot, 56 Squadron;' you just never know...

From Wattisham, it was on to RAE Farnborough as a member of the prestigious Radio Introduction Unit (RIU), run by the legendary Wing Commander Eric Madger, researching into data link as part of RIU's Linesman Mediator team: this was systems engineering of UK Air Defence on the grand national scale! The data link was destined, in part at least, for the Lightning fighter with which he was by now intimately familiar. Great experience! However,

after a couple of years, Hitchens got the chance—finally—to attend Southampton University’s diploma course (DUS) leading to a Diploma in Electronic Engineering which he seized with both hands. It had, after all taken him some ten years to get there after his initial decision as an airman. The DUS course turned into a Master of Science degree for the lucky few, of which he was one. No oops there, then... *au contraire*, Monsieur Pussycat! Dream realized, big time!

After Southampton, Hitchens found himself posted to a factory near Maidstone in Kent, leading (some hopes) a team of some 15 senior NCOs in the co-development of automatic test equipment (ATE) for the NIMROD and the F111K, alongside the contractor, Elliott. Great bunch of chaps, who needed his supposed expertise like a hole in the head, but who taught him how to play Chase the Bitch *par excellence!* Oh, and his wife Patricia gave birth to twins, Philip and George— clever girl! —bringing the ‘sprog-blog’ up to four sons. Quite sufficient!

Then on to MOD, Admiralty Arch, as the ATE man in the Ministry, working with the procurement folks: learned, *inter alia*, how to throw a miniature Toledo Sword (paper knife) so that it would stick in 9 times out of ten: don’t ask... Oh, and travelling back and forth to Munich on the Multi-role Combat Aircraft (MRCA)/Tornado program, where his ‘keyhole German’ came in very useful during negotiations: the German contingent spoke openly amongst themselves in German, secure in the knowledge that no Brit could understand. Hitchens kept a straight face and passed translation notes under cover to his colleagues. His erstwhile school German teacher, Ludwig Weltman, would have been so proud: he had been a prewar emigré from Austria...

And so to Staff College, Bracknell, which was a really broadening experience, working alongside all services from a variety of nations, and experiencing a wide range of attitudes to problems of social conflict. A time for mature thought. And the parties were great, too! From there he was posted to RAF Chivenor, for no apparent reason – although the climate was excellent, and the beaches first class – then, after 6 months only, on to OC Engineering at RAF Cranwell, looking after 43 Jet Provosts and Golden Eagle Flight, providing the aircraft and support for Prince Charles’ flying training. Oh, and District Commissioner for Scouts in his spare time. Now there’s a thing – there *is* a thing: after 22 years, back where he started ...

Returning to Cranwell was good, but it also spelled closure; after 22 years in the RAF, it was Hitchens’ 38/16 point of optional retirement, so he asked the Air Secretary’s Branch over-confidently as it turned out, about his future prospects. They thought he might make substantive wing commander at some stage, which—as he was already acting wing commander—seemed less than thrilling as a prospect if he were to stay on for seventeen more years, twelve years of which would be served in the centre of London. Surprised and disappointed—he had given his life to the RAF—he decided to take the plunge and try life outside the RAF...

His first role was as a Senior Scientific Officer at RAE Boscombe Down working particularly on



Electro-Magnetic Compatibility (EMC), which proved to be rather narrow, as well as incredibly slow after the RAF, so he competed for the job of Avionics Systems Design Manager for the Air Defence Variant (ADV—later the F2/F3) Tornado at EASAMS, the then pre-eminent systems house in Camberley, Surrey. He knew quite a bit about avionics already, but now he learned systems design and systems engineering from the experts, EASAMS (originally *Elliott Automation Space & Military Systems*) having been set up by its CEO, Howard Surtees, who had developed systems engineering at first hand in association with the Apollo program.

Hitchins soon discovered that the Ministry of Defence (MOD) had no concept of operations (CONOPS) for the new Tornado ADV fighter: amazingly, no one had considered how this airframe/engine combination, intended as a bomber, could conceivably operate as a fighter. It certainly couldn't dogfight, like all the other fighters of the day. It could not accelerate in a vertical climb, like any self-respecting fighter, nor could it turn on a penny at high-g. What to do? Hitchins looked up a fighter pilot chum from his Lightning days, now ensconced in MOD, and together they worked out how this bomber-masquerading-as-a-fighter might operate—just. But, it would not be pretty

Hitchins had to learn the hard way that, while the RAF needed a new fighter, MOD couldn't afford one. The MOD's notion was to create yet another variant of the existing Multi-Rôle Combat Aircraft, known colloquially as Mother Reilley's Cardboard Aircraft. So, the Air Defence Variant was to be procured at a fixed price, and with zero alterations to its specification that might allow contractors to overcome the fixed price threshold. However, naïve Hitchins continued trying to introduce modifications that would improve capability, and these kept being blocked by MOD. He even invented a new combat system, LANCE (Line Algorithm for Navigation in Combat Environments), but that was also turned down as impractical: allegedly, a "very similar" combat system, "A Pole," appeared in one US fighter soon after... But, of course, that could have been coincidence.

After 2 years at EASAMS trying to 'make a silk purse out of a sow's ear,' Hitchins saw the light, resigned and moved with his family to Salisbury, his wife's home city. Hitchins was sans employment. *Nil desperandum*. An advertisement in the local rag spoke of a physics teaching post at the local grammar school. Hitchins went along for an interview with the head teacher.

As he entered the gate, he noticed a girl in uniform. 'Ah, coed: not to worry.' Then several *more* girls. Then *only* girls. Panic seized the hapless Hitchins, mother died at age seven, father of four sons, educated in a boy-only environment, ex-all-male apprentice, ex-all-male cadet. All very masculine...



The interview did not go well. He asked the head mistress why there was such a large turnover of staff: apparently, that was not a good thing to ask on interview... Somehow, he got the job: Head of Integrated Science. Amongst other duties, this involved teaching the facts of life to 11-year old girls, 30 at a time—terrifying! And teaching physics to girls, 11 to 18 years old—challenging! ("If a teacher you would be, by your pupils you'll be taught.") Not to mention astronomy, mathematics, drama, singing, athletics and trampolining...

In a forlorn effort to keep up with his wife Pat, who was a fine contralto soloist, Hitchins also joined the local amateur operatic society, and took some 2 years of singing lessons, proving beyond any doubt that you cannot – you really

cannot – make a silk purse out of a sow’s ear – be it an ADV Tornado or a bloke with the singing voice of a castrated bullfrog. However, the operatic society was great fun... and he got to wear makeup, wigs, and folderols. Hmmm... Freud again?

Despite his vocal limitations, he found a niche, mostly in a number of Gilbert and Sullivan Operettas on stage in Salisbury. [His final rôle, to come later, was as Professor Harold Hill, the fraudulent music teacher who knew no music, in the ‘Music Man’ with Camberley Musial Society. Hitchins found that, somehow, to be a fitting end to his stage endeavours...]

Meanwhile, Hitchins enjoyed teaching, and found to his surprise that he was rather good at it. After four years at the girls’ grammar school, however, he was finding it ever harder to make ends meet, so he reluctantly returned to industry, variously as a technical manager, business development director, technical director and marketing director. He was Technical Coordinator for NATO’s UKAIR Command & Control Information System (CCIS), and UK Technical Director for the NATO Air Command and Control System (ACCS) project in Brussels, where his keyhole German came in useful yet again, and he took part in the Strategic Defense Initiative (SDI)—Star Wars—in the U.S. Command and Control Systems of various kinds, civil and military, became his interest and forte, and he took to consulting, writing papers and lecturing internationally as a systems architect of these complex sociotechnical systems.

In 1988 he competed successfully for the new Chair in Engineering Management in the Department of Systems Science at City University in London. While there, he wrote his first book on systems engineering (*Putting Systems to Work*, John Wiley & Sons, 1992), took part in a national research program into Operational Policing, started an MBA program in Engineering Management, and received a PhD in Systems Science from the University, presented by the Lord Mayor in the Guildhall—which was nice!

In 1990, he was headhunted for the new British Aerospace Chair in Command & Communications at the Royal Military College of Science, Shrivenham, which should have taken Hitchins back to his interest in Command & Control Systems. On arrival to take up his new post, however, it transpired that BAe had decided to discontinue (sic) their interest in Command & Control research – a pretty major oops – so, after touring around the various BAe Factories in the UK, and finding that they shared a need for improved systems engineering, Hitchins changed the title of the British Aerospace sponsored research chair to Systems Science, and proceeded to continue with research into systems engineering – which had, in retrospect, been the defining discipline of his professional life both in and out of the Service – and had been the subject of his first book.

While at Shrivenham, he was co-opted as an independent member of the MOD Defence Scientific Advisory Board, in London. He initiated and organized a number of international conferences, including IDASCO (Information-Decision-Action Systems in Complex Organizations), and the first UK-hosted US-UK Defence Command & Control research forum. He continued his work with the police, started at City University, consulting with three UK police forces, and particularly with the, then, forward-looking Surrey Police who were exploring new policing methods. He also inaugurated the UK Chapter of INCOSE, and was its first president, and he also inaugurated the IEE’s Executive Committee M5 on Systems Engineering. And he developed and delivered a highly intensive annual course, ‘retreading’ British Aerospace engineers into systems thinkers, systems designers and systems engineers.

In 1994, at the tender age of 59, he was diagnosed with ankylosing spondylitis, and obliged to retire from full-time work, so he continued as an author, researcher and consultant in systems, systems thinking, systems design/architecting and systems engineering.

He had an abiding interest in Ancient Egypt since an early age, so he now pursued that interest, from the viewpoint of a systems architect, seeking to understand the ways in which the ancient systems and buildings had been developed and constructed. With a colleague, he gave the Institution of Electrical Engineers' Millennium Christmas Lecture on Systems Engineering the Pyramids, at Savoy Place in London, thereby combining his two lifelong interests. He published two books on ancient Egypt:

- *The Pyramid Builder's Handbook*, about the evolution 3rd and 4th Dynasty pyramids, their purpose, developing designs, construction methods, management, logistics, etc.; and
- *The Secret Diaries of Hemiunu*, a fictional biography of Hemiunu, the chief architect of the Great Pyramid of Khufu, which is historically consistent, but which also fills in the many spaces in his little-known history with a systems architects' notions of what *may* have happened, how he *probably* worked, what he *may* have incorporated into his design of *Akhet* Khufu, and most importantly, *why*...

No longer able to work full time, Hitchins could choose consultancy jobs in which he was interested, including police command and controls systems, and air traffic management systems. He continued to research into systems engineering, which – in his view – had been hijacked and transmogrified both by the US DoD and the UK MoD into a conglomeration of project management, engineering management, and piecemeal engineering. His research into real systems engineering ('the systems engineering that won the Battle of Britain and put Neil Armstrong on the Moon') resulted in his fourth book, (*Advanced Systems Thinking, Engineering and Management*, Artech House, 2003).

In 2008 he wrote a fifth book: *Systems Engineering: A 21st Century Systems Methodology*, John Wiley & Sons, putting together his professional interests, with sections on ancient Egypt, the Battle of Britain, the Lighting Total Weapon System, Lean Manufacture & Procurement, Defence Capabilities, Police Command and Control, 'How NOT to Procure a Fighter' and—for good measure—Global Warming, Climate Change and Energy.

And in 2017 he wrote another book, "Going Ape!" (Apple Books) on systems anthropology, addressing we humans as systems, the systems within our complex bodies, and the systems we create in our increasingly complex yet shrinking, overheating, world. In 2020, as a result of lessons learned from the Pandemic, he updated the book and retitled it as "The Ingenious Ape Ascending," exploring how we humans apes might cope with the combined and interlinked threats of global warming and continued population explosion.

Meanwhile, he has set out to create a series of videos to serve as introduction and education for would-be systems thinkers, systems designers, systems architects, and systems engineers. He has set up a dedicated YouTube Channel, and filled it with some twentysix videos, ranging in title from: 'Just what is Systems Engineering?' and 'Systems made Simple,' through 'Systems Methodology,' 'Managing Complexity,' 'Chaos and Systems Engineering,' 'Hitchins' Viable Systems Model,' and 'Systems Thinking,' to 'Creating Viable Systems,' and 'Systems Engineering the Great Pyramid.'

There's that ancient Egypt thing again! The 'cantankerous architect,' it seems, continues to 'rage, rage against the dying of the light...'and he continues to write provocative essays/blogs on matters systems and anthropological, as though to prove the point .



*Pat, Derek, family and friends at their Golden Wedding Anniversary 'bash,'
Marwell Manor, 14th May 2011. This is your life...*