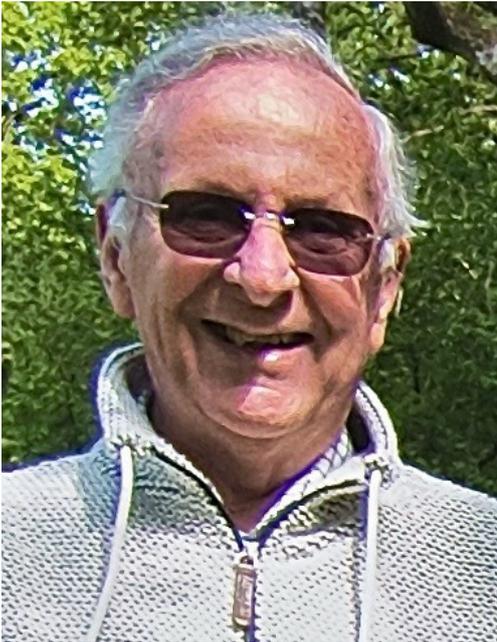


I Am a Systems Engineer and I Do...

Derek Hitchins



How long have you been a Systems Architect, and how did you get started

I joined the RAF, aged sixteen, as an Air Radio Apprentice, in 1952. It was the Cold War: the UK was developing its Total Weapon System Concept. So, from the outset, we young apprentices were taught radio, plus systems theory, systems thinking, systems approach, avionics systems in aircraft, systems in defence... In 1970, after my time as an RAF engineering wing commander, I joined EASAMS as the Avionics Systems Design Manager for the Tornado ADV: a systems architect role, creating total, turnkey system-solutions to satisfy customers' problems...and I never looked back.

What education/qualifications do you have for Systems Engineering?

Like many systems engineers of my vintage, I had no first degree, but HND instead. I qualified in the RAF as a Weapon System Diagnostician – really! Then, MSc in Electronic Engineering from Southampton and PhD in Systems Science from City University. And lots of practice...

What is it about Systems Engineering that you find so compelling?

Thinking 'Systems' is a way of life, with the potential to understand and solve the most complex, and daunting of society's problems. As *applied systems thinking*, Systems Engineering has enormous potential for conceiving and creating small-, large- and global-scale viable systems (i.e. able to maintain themselves or recover their potentialities) that perform harmoniously with their environments for society's continuing benefit. I find that utterly compelling.

Has Systems Engineering changed much since you started out?

For the first forty years, Systems Engineering explored the Customer's root problem, and provided a *total viable, turnkey systems solution* for the end Users. And that solution need not be technological; instead, it could be a process, reorganization, or a social system: Command & Control, Air Traffic Management, Emergency Services, and the Thames Barrier...

At present, we are veering/have veered away from systems engineering towards the so-called Engineering of Systems which—as the title suggests—is engineering, i.e. creating technological artefacts to specification. But *not* systems. Sadly, we are in danger of losing the enormous potential of systems engineering, while adhering to it in name only.

What interesting projects have you undertaken throughout your career?

I worked on President Reagan's Star Wars program, which was fun. And too many defence programs to mention. I was part of the infamous Linesman Mediator project for UK Air Defence: my rôle was operational remote control via data link of many simultaneous Lightning interceptions. I worked in MOD on Automatic Test Equipment, and in Munich, Brussels, Paris, Indonesia, most US States ...on JTIDS, IFF, C³I, even once on a helicopter-based automatic ploughing system.

I held two chairs: Engineering Management at City, and Systems Science at Shrivenham, where I also ran a really fun Systems Summer School for BAe Systems. ...and I was also an ACPO consultant to a County Police Service, which was different! Still writing books. Still learning.
Want a worthy career? Be a systems engineer!