How Do I Get Into Safety?



It is sometimes difficult to plan a career: so many things have to align together for each step on the ladder to take place, whether it is the correct training, organisation, job or assignment, or simply just being in the right place at the right time. We are sometimes asked: "how do I get into safety?"

The answer isn't straightforward. In fact, it is doubly difficult to plan a career in safety engineering, assurance, or consultancy as a solid background in the underlying technologies (such as software, architectures, or databases) and sector knowledge (eg. aviation, nuclear or rail), plus the right opportunities all have to be present

Safety is often a second career, taken on by engineers or consultants who have already got several years of experience doing other things. Also, there is the issue that not many safety staff are required for most jobs: often there is only one safety engineer on smaller projects; if that role is already taken, there is little chance of a junior gaining relevant experience.

With this situation in mind, we continue our series of articles where members of the SCSC Steering Group share their experiences of 'getting into safety'. Some of the routes taken are definitely not linear!

Please read and compare with your own 'safety story'. Of course, these experiences are based on events some time ago, and the situation has definitely improved as the industry has matured. For example, there are now courses (at post-graduate level) on safety-critical systems such as those at the University York, there are competency frameworks for safety roles, and the SCSC has its own "Safety Futures Initiative" programme with the aim of developing young and early-career staff so that they can take on full safety roles.

The messages that come out of these experiences however, are that sometimes you do just have to be in the right place at the right time, and with the right underlying characteristics. All safety roles require the ability to be able to assess risk, to understand some difficult technical arguments, to follow (and create) workable processes, rules and regulations, to know the standards and guidelines relevant to the job in hand, to be able to communicate well, work in a team with colleagues, and very importantly, to be assertive and take a strong position when needed.

James Inge



As I was lucky enough to join the Ministry of Defence (MOD) straight from school as a sponsored student, I left university with practical engineering experience from placements around the MOD, not just an MEng. My first proper job after the MOD's graduate scheme was as a project manager in a "cluster team", responsible for procuring and supporting a variety of electronic systems myself. It was a steep learning curve but a great opportunity to experience different aspects of engineering management. Our team had no safety manager, so I soon realised it also fell to me to put in place safety cases for my kit.

After this, I joined the Defence Procurement Agency's Acquisition Safety and Environmental Support Group in 2005, working on the DPA's safety policy and rolling out the then-new Acquisition Safety and Environmental Management System. At first I thought that now I had my promotion, I would soon move on, but then I got the bug for trying to improve our management systems and make it easier for everyone to do better safety engineering. I studied Safety Critical Systems Engineering at York, became involved in development of Defence Standard 00-56 and other MOD safety standards and policy, and started networking through conferences and the IET.

Since then, I have led the MOD Ship Safety Management Office, been the Senior Engineer in a land systems delivery team, acted as the safety governance lead for one of our air domain business units, and led the central safety and environmental protection team: providing policy, assurance and governance for Defence Equipment and Support, as well as developing training and guidance material. Outside MOD I've also taken turns chairing the IET's System Safety Engineering professional network and the Independent Safety Assurance Working Group. I now lead DE&S's Ships Domain Safety and Environmental Protection team, am a member of the SCSC Steering Group, and am working on IEC 63187, a draft international standard for safety in the defence sector.

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Through my career, I've found it vital to be able to bring in ideas from different parts of the MOD, the defence industry, and beyond. To deliver good safety management policy and standards, I've also needed the experience of trying to put them into practice in project roles. Groups like the SCSC have been invaluable to help me learn and build the networks that have helped me develop.

Louise Harney



I never expected to study at the University of Oxford, and certainly not anywhere as prestigious as Christ Church. As an ambitious sixth-former at Greenhead College in Huddersfield, I applied mostly to the American universities I had watched movies about, imagining my Legally Blonde-esque arrival at Caltech where I was privileged to be accepted. Most certainly prompted by my parents, our highly-respected Vice Principal left a note on our class noticeboard for all to see. I've kept that note somewhere. It was my acceptance letter from Christ Church with his handwriting on the top right-hand corner "*This is where you should be.*" And he was right.

It seemed the whole college started asking me what I was going to do! That Vice Principal had taken us to all our debating competitions, supporting us to speak our minds and weigh up difficult options in public. People always talk about STEM like there is some magical moment that children and teenagers are inspired for their future lives and careers in tech, but I don't think that's true. There is an accumulation of support and self-belief that builds a way of thinking, from a number of sources – parents, wider family, teachers, friends, extra-curricular activities. Those formative debates, classes on interview technique and power of thought taught me the foundations of behavioural competency needed to work in the field of system safety, alongside the life lessons I already had from my family.

After three years of 'tutes' (tutorials) that required me to present my arguments to a small group; a lot of hard graft and incredible memories later, I started applying to jobs. Like many of my peers graduating with a degree in Physics, I naturally applied for the big corporate world of banking. I got lost in so many of those offices and felt nothing but out of place.

A friend at university advised me to think about consultancy – I was forever meddling in different societies and suggesting better ways of working – maybe that would suit me better. I'd never considered starting out as a consultant, I just assumed you had to already know a lot of stuff to be able to do that. Then I interviewed at a small consultancy, Helios, where (if I was successful) I would be the only graduate that year. It felt like a good fit straight away: the people were great; they worked hard to make me feel comfortable in the office and interview – and this office I couldn't get lost in, people even had keys to the front door!

The work sounded exciting, with many different challenges and the opportunity to see how different organisations do things. I was thrilled to be offered the job and for the next few years worked really hard, while travelling the world and making new friends. Helios happened to have a lot of safety work at the time, so I was lucky enough to go on a Eurocontrol course about developing safety cases. I was already hooked. Every catch up with my line manager, every annual appraisal, I would be asked if I wanted to expand my knowledge to other areas, airport performance maybe or noise management. Of course, I would be happy to do that if I needed to, and did dabble a little with other topics alongside my safety work, but nothing else chimed with me like developing a new safety management system or building a safety argument.

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I spent a lot of time working on radar upgrades and air traffic control. I had the rare opportunity to see all aspects of how an organisation worked, how they got their product or service through its entire lifecycle from concept to decommissioning, and to talk to so many different people across the globe. Facilitating workshops was my favourite thing to do, especially internationally. I was mentored by colleagues both internally and externally, with one-to-one support available all of the time. Knowledge and competency are something that has to be built and evolves your mindset as well as your technical skills, so no matter how many training courses you go on, support and supervision by an expert (that I was lucky enough to have so readily available) are essential to growing in your career. I can't thank those people enough for the support I received.

I loved the variety of working in a consultancy like this, being able to work with different organisations and deliver something really tangible every day, but I wondered what life would be like in industry and longed to see the actual product or service being designed in depth, so I made a leap into industry with Raytheon and later moved on to Leonardo, working on sensing technologies. I worked with complex systems; challenging international collaborations; and improving safety management systems.

I first came across the SCSC at Raytheon when my then-line manager invited me along to an event. I began to build a network of incredibly talented and helpful people, all working in the field I feel most at home in. I learned a huge amount technically, but I also made some great friends who I would continue to collaborate and socialise with as the years went by and we all moved between various day jobs. The consistency of the SCSC as a network; with working groups, conferences and much more; gave me the confidence to develop into a fully-fledged system safety engineer, now training, coaching and advising others on the subject alongside more technical development work. When I was invited to join the SCSC Steering Group, I felt I had 'made it'! I'm learning every day and the support available in the SCSC helps us all to do that, alongside more formal mentoring and support available in our day-to-day jobs.

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I have progressed through my career so fast, and looking back I have been incredibly lucky and grateful to be supported by a number of great line managers and mentors, while putting myself forward to take on interesting and challenging roles. If you don't ask, you don't get – I intend to keep asking for those exciting opportunities and to offer the same to those I work with. But safety isn't just a day job. It permeates all aspects of our lives, and that's what I love about it. Whether I'm working on the next generation of radar systems; sailing; or just trying to stop my son falling off yet another thing he has climbed on, there are risks. Risks are a necessary part of living, but with some clever engineering we can reduce those risks enough to keep taking them day after day.

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