

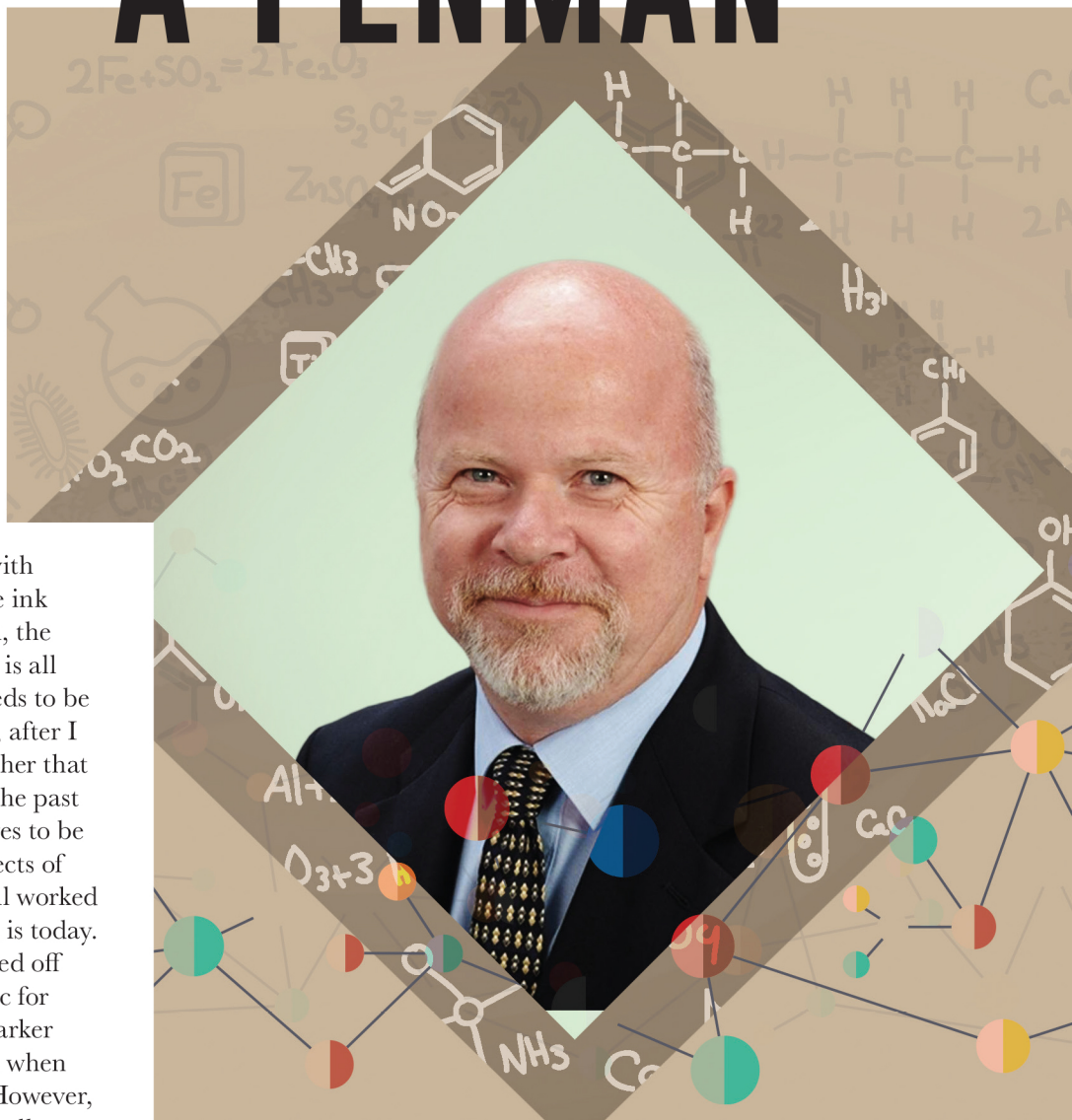
Michael W. Harris, PhD, spoke with ink chemist Leighton Davies-Smith for the *Pennant's* spring 2020 issue. Here, he continues the conversation.

PORTRAIT OF A PENMAN

Late in my follow-up interview with Dr. Leighton Davies-Smith, the ink chemist behind Parker Penman, the through line came into focus: it is all about systems. “Everything needs to be married well together,” he says, after I pull the disparate threads together that we had been talking about for the past hour. It is a statement that proves to be the key to unlocking many aspects of Leighton’s past and how they all worked together to shape the person he is today.

Our second interview started off in my mind with one main topic for discussion: more stories from Parker Newhaven in the ’90s, the time when he had started working there. However, I wanted to start off more generally and fill in some of his background we had barely touched on in our first discussion, starting with how he got into the sciences in the first place.

Growing up near the Welsh city of Porthcawl, on the shores of the Bristol Channel, situated about halfway between Cardiff and Swansea, Leighton says, “I guess I have always



Leighton Davies-Smith

Who's for a bite to eat?



been mechanically inclined. Growing up, my dad worked in the local steel works and on engines for Ford Motor Company in the UK, and also repaired watches. In fact, he still does the latter to this day. Even now with the pandemic lockdown, people are still dropping off mechanical watches on his doorstep for him to repair. He is in his 80s now and still able to work on the intricate gears of a watch!"

Leighton admits that as a child and teenager, he was not always the greatest student—indeed, when he sat for A-levels in math, physics, and chemistry, his scores were only good enough to gain admission in Polytechnic schools in Pontypridd, not far from where he grew up, and Brighton, in the south of England. A-levels in the UK are sort of like Advanced Placement tests in specific subjects that are also required for admissions to college. Think of them as AP tests but with the pressure for high scores of the SAT.

Like any teenager wanting to spread his wings, he chose Brighton. "I needed to be away from home," Leighton



said, adding that "it was a brilliant experience, and I would move back to Brighton if I had the chance."

However, his experiences in Porthcawl stuck with him, in ways that he was not even aware of. His interest in his dad's work on engines and watches was reflected in his own early interest in building radio-controlled aircraft and his dreams of one day joining the Royal Air Force. He was a member of the British Air Training Corps, which he describes as a sort of UK Boy Scouts with a focus on flying but which is seen as a pathway to one day joining the RAF. Unfortunately for Leighton and his dreams of flying, but fortunately for the world of pens and science, his applications were denied. The reason was not a lack of flying aptitude, though, but rather lacking in the leadership component, something he would eventually grow into as a scientist, eventually running his own labs and consulting agency.



Opposite, from top:
Leighton with his son (now
26) at Parker Family Day;
from the Parker *In Site*
newsletter.

Leighton's father working
on watches
Leighton as a newly
minted PhD

However, engines, watches, flying machines—these are just a few examples of the systems that Leighton was a part of growing up in Wales. He was also a musician, an avid pianist who also played the double bass as part of the local youth orchestra. Much like myself, a bassoonist, Leighton understood being a part of a larger whole and how disparate pieces have to work together, in concert, for a larger system to work well. This is true for the intricate, miniature machinery of a watch—especially women's watches, which he would often see his father working on; the fine tuning of engine systems in automobile or aircraft engines; and the ink delivery system of pens, where both ink and tip need to work seamlessly together to ensure the recording of thoughts on page.

They are all systems, and when something goes wrong, one cannot simply blame the other part of the system and not oneself; it is important to examine the collective failure, something Leighton learned firsthand in his time at Parker. He recalls being told in those early Parker days to avoid the “Parker Coats of Arms”—crossed arms across your chest pointing to others on either side of you to blame when something went awry. Clearly, Leighton took this to mean that failure is a failure of the whole rather than the individual.

However, Leighton's journey to Parker was not a straight line, especially as while he studied chemistry at university, it was not his only focus nor was it the kind of chemistry he would need for his work at Parker. While at Brighton Polytechnic, now the University of Brighton, he earned his first-class degree (roughly equivalent to a *summa cum laude* from an American university) in a combined sciences course, or put another way, Leighton studied the entire system of physical sciences (math, physics, and chemistry) rather than just a single discipline. How they all meshed together fascinated him.

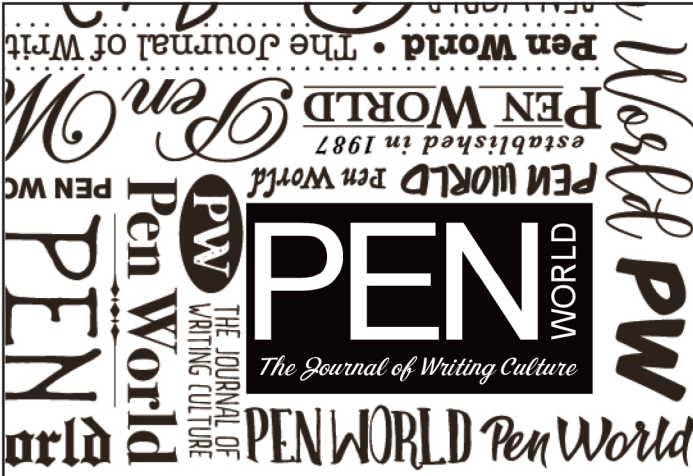
Afterward, he went on to PhD studies, still at Brighton, studying electrochemistry and ways to improve protections against sea water corrosion at a lab for the British Admiralty Research Establishment in Poole, Dorset, under the tutelage of Tom Riley and John Lane, his undergraduate mentors. While there, Leighton used his knowledge of math, physics, and chemistry to tackle his research, again reinforcing the fact that it is the systems that work together to create a whole, not any single person or discipline.

He finished his PhD work in only three years, and very quickly found himself working for Duracell Batteries. So quickly, in fact, that the timeline for him transitioning from PhD work to private sector job goes like this: Thursday—

interview at Duracell, Friday—defend PhD dissertation, Monday—begin working at Duracell. And by the end of that first week, he had already visited facilities and suppliers of his new employer in Belgium and Germany!



When Leighton finally arrived at Parker in 1989, and began working with John Bell, the retired ink chemist mentioned in my previous interview, he found an ink lab ill equipped to do the work that he would be doing. According to Leighton, “The facilities were sorely lacking, and Mr. Bell informed me that equipment would go missing and never be replaced or upgraded.” However, when Leighton asked to get new equipment, including a rheometer to properly test the many properties of ink beyond simply viscosity, he found Parker more than willing to support his efforts.

Indeed, this piece of equipment, purchased from the manufacturer Carri-Med (now TA Instruments), came full circle when he bought a similar device years later for his lab at Colgate-Palmolive, and he mentioned to the salesperson



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that he had written a document about the applications for the rheometer in studying the properties of writing ink. This document had been used by Carri-Med as part of the marketing of the rheometer and Leighton was able to supply the sales representative with a copy of it, whose information was still valid and useful to the newer version of the device. It has now been added to the company's archives.

For Leighton, this piece of equipment was key for studying the various properties of ink in order to better marry it to the tip that would deliver it to the page, be it a ball pen, rollerball, or gel system. All of these inks have different properties and will work with their delivery tip differently, so it is important to have a full understanding of them and work closely with the engineering side to ensure that they work together seamlessly.

For Leighton, it is good for one to study broadly in order to understand an entire system. He's always identified with the expression "Jack of all trades, master of none." However,

he adds, "Armed with a PhD in very specific research, why can't I be both a Jack of all trades *and* master of *one*? The lesson was to try things, test yourself, and challenge yourself (and others). To take the time to understand someone else's expertise, appreciate their skill, know what you don't know, try and fill that knowledge gap."

Again, a fully integrated system where all parts have to function as a whole: how the double bass provides the foundation upon which the other instruments rest, how the intricate gearing of a watch needs to fit together and be lubricated in such a way to ensure accurate timekeeping (something of critical importance to the RAF pilots whose ranks Leighton had wished to join), or how the engines work in vintage vehicles that Leighton has enjoyed working on and hopes to again once he decides to retire from his current employer. In all these systems, individual parts function to support a whole.

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Leighton's
beloved 1978
Triumph Spitfire



In chatting with Leighton, I have heard many great stories of his time at Parker, but there is one he shared that, on first listen, does not seem to support this idea of systems being of primary import. But, after our interview wrapped early on a Sunday morning during the coronavirus lockdown, I realized that it is a great example of how a strong and robust system can survive even when a small piece is off kilter.

In the production line to create tips for Parker's ballpoint pens, there was a machine process that involved precise setting and control of 24 machining and forming elements to ensure the tight tolerances for manufacturing an excellent tip, including placing and retaining the ball inside the tip for optimal ink flow. On this line, there was a certain "curmudgeonly" gentleman who took his job very seriously and by all accounts operated the machines with a high degree of precision and skill. However, whenever he went on vacation, the quality of the tips took a small but perceptible dip—not enough to prevent them from working well, but still not as good as they were when he was manning his station on the line.

As it turns out, before he would leave for "holiday," he would tweak the settings on all the machines just enough to change the output for the tips, but not enough to throw off the entire system. The totality of the ink system, tip, and ink, had been engineered in such a way that even one worker, and his desire to be seen as key and useful until the day he retired, was not enough to compromise the whole.

As Leighton said in our first interview, a phrase he repeated in our second chat, "It's not an ink problem, it's not a tip problem, it's a system problem."

Towards the end of our conversation, I had one final question that I wanted to ask Leighton: What are his hobbies? For so many of us, collecting pens is our hobby, with maybe something like watches, bags, vintage ads, or comics thrown in. However, I was curious how someone whose profession *is* our hobby spends his off hours. When I asked, though, I probably should not have been too surprised by his answer.

First, he mentioned music. He had recently ordered a new digital piano and was eager to get back to playing after around a three-year layoff when he had to sell his baby

grand when the family moved. Second, and probably the biggest thing he enjoys, are technical "home projects." He is currently enmeshed in a multi-year renovation of the master bathroom, which included stripping everything down to the studs and joists, understanding how things work together, and redesigning the space to improve convenience, aesthetics, and function.

And for after he finally retires? He would like to get another vintage car and work on it. As a teenager he had a Triumph Spitfire, named for the RAF planes made famous for fighting the Luftwaffe to a standstill during the Battle of Britain. He admits he could never get it working perfectly, yet he loved it. For Leighton, there is no better experience than "taking things apart, understanding how everything works together; sourcing, procuring, and replacing parts; and putting it all back together with hopefully no pieces left over, and having it work like a dream. The experience of 'I can do it!'"

By the time Leighton and I wrapped our conversation, I had probably half-a-dozen more questions I would have liked to ask about product development or Parker Newhaven, but what I gained in this second interview was even more valuable: a portrait of a scientist, an engineer, and leader in our beloved industry, and a man whose perspective on how things work—how systems work—is a valuable lesson for all of us to know.

Dr. Davies-Smith has recently updated his consulting website, scribetc.com, to include information on obtaining a new line of inks made by him and "Reminiscent of the PARKER Penman Fountain Pen Inks." You can also email him directly at leightondaviesmith@gmail.com.