

## How Lincad is delivering a focused, customer-driven service

An Interview with Mike Hendey, Systems Engineer, Lincad



makes them particularly interesting from my point of view.

**Q. Does that mean you get involved in R&D work?**

Yes, I do also get involved in R&D. There's a lot of R&D activity going on at Lincad at the moment, particularly into new cells coming onto the market, and we're concerned with evaluating them, making sure we have a full understanding of what is available. So, for me, R&D involves asking how the results of the testing be applied to customers' applications.

**Q. You say there's a lot of R&D work going on. What sort of developments are happening?**

Well, the energy needs of customers are becoming more complicated – it's much more than just 'a man with a battery' these days. Customers are looking for complete power management systems and that means thinking about issues such as energy efficiency and recharging capability. For example, the new charging systems we're developing will offer a single charging application for most, if not all, of the user's batteries rather than a need for multiple chargers for the diverse range of batteries a user may be required to carry.

We're also involved in renewables, particularly solar. It's a technology that is becoming increasingly well understood and with solar panels becoming more efficient, the potential is there for soldiers to be able to recharge batteries in theatre without having to worry about the logistics of returning units to base. They can charge on the go, making their power management protocols

far simpler.

We're also looking at how to adapt 'spare' power sources like vehicle batteries to be used for recharging in tactical situations.

**Q. What are the main uses for Lincad batteries?**

Whilst there are certain specific applications – powering remotely operated EOD vehicles would be one example – most of our batteries can be used for almost any electrical equipment. Essentially, our batteries are used wherever there's a requirement for a very heavily tested, heavily managed and heavily regulated battery which is both safe and electro-magnetically quiet.

Those are the areas we excel in because we've spent a lot of time working very closely with those markets, particularly the MOD. In fact, it's not uncommon for a situation to arise where a customer will ask for details of one of our batteries because they want to design a piece of equipment around it – which is a fantastic validation of what we do.

**Q. Mike, can you start by telling us what being a Systems Engineer at Lincad involves?**

I'm quite lucky as it means being involved in most aspects of the product design life cycle, right from discussing a customer's requirements with them through product inception and creating an engineered solution to meet those requirements. I'm usually also involved with the design into the testing phase and occasionally even the introduction into use by the user.

In my case, I'm primarily involved on a day-to-day basis with the product documentation and mechanical design, the packaging, rather than the electronics or the software, even though my background is in electronic engineering.

**Q. Can you expand on that?**

I studied for a National Higher Diploma in Electronic Engineering in South Africa and worked there for a few years before joining Lincad in 2002. I started as a fairly junior engineer, carrying out a lot of testing work, and worked my way up to my current role.

The first product I actually designed at Lincad was a small charger and I've remained interested in the charging side of things – mainly because chargers tend to be more mechanically complicated which



*Power Scavenger which charges batteries from any available DC input*



*Caravel MK2, Lincad's new cutting edge multi-chemistry charger*



*LIPS 14, Lincad's most energy dense product to date*

**Q. Can you tell us a bit more about the markets you mention?**

Historically, our association has been with the MOD and predominantly with land forces. The security industry, the police, the fire service, the oil & gas industry, for example, are all of great interest to us because they have to face extreme environments and have a need for the same level of safety, reliability and portability as soldiers do.

**Q. How safe are your batteries?**

As you know, we are particularly focused on lithium-ion batteries because lithium-ion cells have an extremely high energy density and, as with mains electricity in a house for example, there are risks associated with that. But the key to lithium-ion battery safety is to understand what you're dealing with because you can then work towards mitigating the risks and making the battery as safe as possible.

We spend a lot of time testing products to the limits and we have built up a great deal of experience with the necessary safety systems. So the fact is that modern lithium-ion batteries, if they are well designed, managed and looked after, really are relatively safe.

**Q. And how long do your batteries last?**

That's actually a very difficult question to answer because the life of lithium-ion batteries depends very much on how they're stored and used and the environment they're used in. You also have to consider the kind of treatment they may be subjected to when they are being used in a combat situation. Having said all that though, if a battery is well maintained, it should have a useful life of many hundreds of cycles.

**Q. Finally, how positive are you about the future for Lincad?**

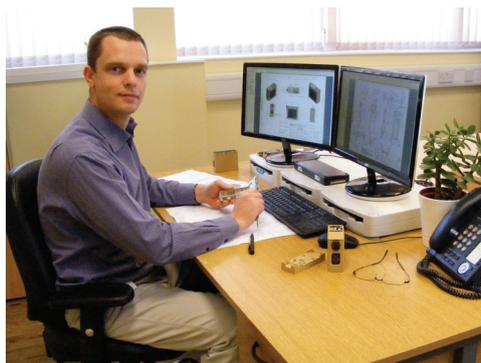
Very. As I mentioned, we have a number of exciting developments underway and, as a company, we are well placed to exploit them. Not only do we have very strong ties with all the major cell manufacturers, we have also developed some very strong relationships within the MOD both directly and through the defence primes. In other words, we can see both sides of the picture – the customer's needs and the technologies available to meet those needs.

On top of that, being a relatively small company with a compact engineering team, we are able to offer a highly focused, highly customer-driven service.



*Lincad Headquarters*

[www.lincad.co.uk](http://www.lincad.co.uk)



*Mike Hendey, Systems Engineer*



*LIPS 10, 11 & 12, part of the LIPS range first developed in 2000*