

LINCAD'S RESEARCH & QUALITY MANAGER, GAVIN DURHAM, TALKS ABOUT BATTERY TRANSPORTATION



Q. Gavin, I understand there have been a number of changes regarding the transport of batteries by air. Can you start by expanding on that?

A. Yes, basically there has been a strict tightening of the regulations for air transport, especially for lithium batteries, over recent years. Until just a few years ago, you could transport lithium primary cells and lithium-ion rechargeable batteries by either passenger or cargo aircraft. The International Air Transport Association (IATA) then prohibited the transport of lithium primary cell by passenger aircraft because there had been a few incidents, particularly in America. In the last couple of years, they've extended that ban to cover lithium-ion rechargeable batteries as well.

So, there's been a gradual ramping up of the rules on the shipping of lithium batteries by air. In addition, a couple of years ago, they introduced a state of charge rule on lithium-ion rechargeable batteries being transported by cargo aircraft. They must now be in a state of charge of 30% or less. Effectively, at that state of charge, they contain less energy and they are therefore far less likely to have a problem if they get crushed, punctured or something else happens to them.

That's where we are with air transport. Other types of battery, like nickel-metal hydride, nickel cadmium and lead acid, are not regulated to anything like the same extent as lithium batteries.

Q. Apart from air, are other forms of transport similarly regulated?

A. Certainly the strictest rules are on air transport. If you're shipping batteries by multi-modal transport (a combination of two or more of road, sea and air), normally if they're packed suitably for air freight, they should be OK for the other two modes of transport. Basically, if there's a major incident in the air, the implications are much more serious than if it happens on the ground.

With road transport, small lithium batteries can still be shipped as non-dangerous goods, exempt from road transport regulations. By air, all lithium batteries are now classified as Class 9 dangerous goods and have to be shipped under a UN number with specific packaging and labelling requirements. So, in general, the road regulations are less strict than the air transport regulations. The situation is similar for transport by sea, although in certain circumstances an extra packing certificate is required. There are also special arrangements for nickel-metal hydride cells for shipping by sea. Even though they aren't treated as dangerous goods for air and road transport, if they





are being shipped in quantities of more than 100kg by sea they are treated as Class 9.

Q. How do all of these regulations affect Lincad?

A. By far the majority of our lithium batteries are transported by road but many of our contracts will state that the batteries have to be suitable for shipping by all modes of transport. So even though we're only shipping them by road, we still have to pack them as if they were going by air. For example, a customer may ask us to send the batteries by road to a depot in the UK but they will then ship them by air to a final destination. So they don't have to repack them, with all the added costs that might entail, we provide the correct packaging and labelling to make their job more straightforward. As a qualified Dangerous Goods Safety Adviser (DGSA), it is my job to ensure that battery products dispatched from Lincad comply with the regulations.

Q. I can see that it can be quite a complex process. Do you think there are further changes in the pipeline?

A. It's hard to predict. The air regulations come out every year, typically in November for the following year. Apart from two years ago when they introduced the restrictions mid-term on lithium-ion batteries, it is unusual for something to happen between the annual updates. The ADR road regulations get updated every two years and we already have the regulations for the next twelve months, so we're not really expecting any changes before the end of this year. The IMDG maritime regulations also get updated every two years. We expect that the road and maritime regulations will fall into line with the air regulations at some point in the medium term but it's difficult to be certain whether they will or not, and if so, when. ●

