



Tracking down obsolete parts

Component obsolescence hits the headlines in national newspapers - you might think that would be an unlikely news story to make the daily papers, but it happened in the UK at the end of 2004. It arose because the national news media discovered that a company

involved with the maintenance of the London Underground railway system had been buying parts on the eBay auction website in order to keep older electronic systems operating.

It is hardly surprising, given the relative speeds of product development in railway traction and in electronic systems, that problems of component obsolescence should arise. A railway carriage might be in service for 20, 30, or more years, and in that time have at least one major refurbishment. The basic structure of the vehicle will not change - and major items such as traction motors can be stripped down and re-wound if necessary. But in the meantime, the construction of the electronics for the train will have changed dramatically. An obvious area of change is that of traction motor drives - over 15 or 20 years, the efficiency and performance of semiconductor devices in that area has progressed almost beyond recognition. However, you are unlikely to find those parts on eBay. You might, however, have to go looking for components for secondary systems. It is easy to imagine that a part could fail in some subsidiary area such as, say, lighting control or in an information display. The operating company does not want to replace the system, which might entail having a new design created - but could find that the faulty part has not been manufactured for years.

The options open to the engineers involved are then very limited. If they have access to redundant

examples of the same system they can resort to "cannibalising" those units and recovering the key components for re-use; or they can set about tracking down a replacement, as the engineers in this case did.

Why should the national press try to make a story out of this? It helps to understand this issue if you know that finding fault with the performance of the rail network is something of a national pastime here in the UK, following the controversial and complex privatisation programme of the 1980s. Maintenance practices put in place at that time have been held - by some commentators - to have contributed to at least one of a series of accidents that occurred on the system over several years - hence the interest of the newspapers. We might suppose that parts bought on eBay are not going to be used in safety-critical systems, and good practice would dictate that before using or re-using a part of such non-standard provenance it would be thoroughly tested. (Or, so you might hope.) But those are not the sort of details the newspapers will focus on when they write headlines.

Into this controversy stepped the UK's Component Obsolescence Group (www.cog.org.uk), a cross-industry specialist discussion forum. The COG's Chief Executive Michael Trenchard commented that the problem of component obsolescence should have been foreseen during the privatisation negotiations and a pro-active policy put in place for dealing with it. "There is a large body of knowledge about

how to deal with it, and buying components on eBay is not part of the lexicon! One critical aspect is being able to ensure that the component is genuine and fit for purpose. Counterfeit components are becoming quite commonplace and you either have to achieve full traceability of the origin of the component, or build up a network of trusted specialist suppliers. You can't do this through eBay."

Trenchard is being generous to the process of privatising the railway maintenance process. He says he does not know if component obsolescence was considered. A more realistic guess is that it is highly unlikely, in the politically-charged frenzy of activity and negotiation, that anyone thought about it at all. There are special problems in such a unique situation. At that time, responsibility was transferred for a vast range of equipment, from an equally large range of suppliers, with ages spanning years to decades. A coherent and comprehensive component obsolescence programme in that context would be a major, and probably impossible, undertaking.

Most of us do not have problems on that scale. Nevertheless, we are working with components whose life in the marketplace can be brief compared to the life of the systems they are designed into. The network of suppliers mentioned by COG's Trenchard, catering to the needs of those of us who need to ensure maintainability of our designs for years to come, does exist. It is just one more aspect of the design process and one that will only become more important as time goes by. Will we reach the point where no one has to employ what Trenchard calls, "Hasty measures to overcome immediate problems.?" Almost certainly not. □

Contact me at
gprophet@reedbusiness.com.