

A safer way to transport batteries

By Jacqueline Ong

WHAT started as an act of kindness has turned into an invention that may transform the way toxic waste, including used lead batteries, is transported.

When an "old, unkempt looking stranger" who said his utility was stolen and he needed to pick up "some things" approached UNISEG founder and managing director Fenton Goddard near his home in Como, WA, Goddard decided to help him out. It turned out that these "things" were in fact used lead batteries.

"He had me driving along and stopping and he would run into homes and come out with old car batteries. He explained that there was really good money collecting old batteries people actually wanted removed for free and selling them to scrap metal dealers," Goddard recounted.

"So off we went and collected around \$200 worth of batteries in an hour. Not a bad hourly rate, I figured!"

About six months passed before Goddard had an epiphany that the transportation and storage of used lead acid batteries was neither safe nor efficient and a year later, Uniseg developed the specification for a purpose designed storage and transportation pallet.

In the early days, UNISEG built a number of composite steel and plastic prototypes and tried them out "in the real world".

"Storage was quite simple. The regulations called for a bunded (liquid retaining) pallet and dangerous goods

load capacity of one tonne. It weighs 100kg and stands at 1260mm high by 1050mm wide and 1150mm long. When flat packed for reverse logistics, it shrinks to a height of 480mm.

It has also been certified for collection of used lead acid batteries under the Australian Dangerous Goods Code 7 and United Nations Model Regulations for Transport of Dangerous Goods 18th Revision for the Transport of used lead acid batteries (UN2794).

Additionally, the first production pallets will undergo certification for use as a segregation box and combination intermediate bulk container.

Goddard said the pallet, with its various features, is for "everyone" in the supply chain.

"The pallet meets the specific requirements of everyone in the supply chain, from used battery generators to transport companies and equally important, it is suitable for end-of-life battery re-processors who turn old batteries into new ingot quality lead to make new batteries," Goddard said.

"Our main clients to date include scrap metal yards, automotive workshops, companies, local government and new battery sales companies."

Goddard said regulation compliance was a key reason for the interest in the pallet, noting that safety continues to be a big driver. However, he pointed to the scrap metal industry, which currently collects most of the used lead batteries, and said it saw the pallet as a means to increase their profits.

"They seem attracted by the opportunity to significantly increase their profit margins by selling directly

safety will negate the price point issue."

Although mixed dry cell batteries are of particular interest to Goddard, given the historically poor performance record of managing this stream of waste in an environmentally sustainable manner, UNISEG may look at other applications.

"Very recently we had significant interest in the pallet for medical and pharmaceutical waste, class 3 flammable liquids, liquid and solid poisons and even as a storage device for diet food for animals!

"We will be supplying everything from pallet washing machines and pallet forklift attachments to the reprocessors to cloud based data management services for our RF (radio frequency) meshing pallet tracking technology that we are imbedding in each pallet.

"Incidentally, we think this feature alone is a game changer for the transport industry. The internet of things has definitely arrived," Goddard said.

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The Uniseg pallet – simple, safe and secure.

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signage, but transportation was a lot harder," Goddard said.

UNISEG decided to create a fully enclosed container with signage as well as bunding for storage but went one step further by developing a collapsible pallet to improve the efficiency of reverse logistics, that is, pallets returning empty.

The pallet is also "extremely strong", acid proof and can be front loaded to meet occupational health and safety requirements for loading heavy batteries by hand.

Now ready for production, the pallet has a volume of 850 litres, a bunded capacity of 25 litres and a

to the used battery reprocessors and by-pass the large scrap metal aggregators," Goddard said.

When asked about cost, Goddard said price should not be the main consideration.

"Safety, environmental sustainability and regulation compliance should be the issue," Goddard said.

"However, return on investment needs to be addressed. The very significant efficiency benefits of our product will deliver an acceptable ROI for even the very lowest volume used battery generators. After all, this is a waste stream that is actually worth something. For some applications,



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