

GPS keeps boxes in order

The phenomenon of lost containers may become a thing of the past, writes **Gavin van Marle**

THE FOLLOWING STORY is familiar to shippers the world over:

A container was due to be transported from Cork in western Ireland to Kunming, deep in south-west China.

The proposed route appeared relatively simple: feeder to Antwerp, where it would be transhipped onto a deepsea container vessel and then taken to Hong Kong, where it would be trucked over the border and put on a train for the final leg.

Transit time should have taken not much more than a month, but almost a year later the consignee was still awaiting delivery, and the box – it was later discovered – had embarked on a circuitous route that saw it left on a South African quayside for several months before eventually entering China through Shanghai.

Shippers rightly feared transshipment because boxes get lost, and the more times a box needs to be transhipped the higher the probability of something going wrong.

However, container tracking systems installed in transshipment hub yards have gone a long way to eliminating errors, according to Richard Lambert, MD of UK-based International Terminal Solutions (ITS), although he also admits that actual figures are difficult to come by.

“Unfortunately there are no hard statistics about productivity gains achieved

through these type of systems. Nevertheless, the advantage is forcing the RTG to put the box in the position it was planned to be. This eliminates double handling and eliminates the incidence of lost boxes, which is historically a problem in transshipment terminals.”

As reported last month, ITS recently completed the installation of position detection systems on 20 RTGs at APM Terminals’ giant facility at the Spanish port of Algeciras – where almost all of the volumes comprise Maersk Line’s transshipment traffic – which handled just over 3.2m teu in 2005.

The system includes a radio data network that links the quay crane and RTG drivers with the yard operating system, and records the movements of the terminal’s fleet of tractor units when they pass under a gantry crane or feed an RTG.

“When the vessel docks, the crane driver receives a move instruction from the Navis system over the wireless network. A further message is sent to Navis once each box is grounded,” explains Lambert,

“A dot matrix messageboard under the crane then tells the tractor driver which yard slot to take the box to. The whole experience is rather like shopping in Argos. The information goes back to Navis, which then sends a message to the RTG. When the truck arrives, an infrared transmitter on its cab sends a signal within a defined field to the RTG.

“There are two sensors on



Twistlock override functions prevent RTG drivers doing wrong moves or picking the wrong boxes

the RTG cab, and depending on which sensor picks up the signal shows you which 20ft box – on a trailer carrying two of them – you are handling.”

By recording the movements of the yard equipment through GPS transmitters, the terminal operating system (TOS) is able to track the movements of the all the boxes around the yard. ITS has thus been able to build blocks into the system that stop RTG drivers from doing wrong moves.

“If the wrong truck turns up and the RTG driver tries to pick up the box he gets a warning, and there is a further twistlock override that stops it locking in the corner castings and being able to pick up a container if it’s the wrong one.

“But if he has the right box then the twistlock works automatically. By the same token he won’t be able to unlock if he puts it on the wrong yard slot,” he says.

ITS has a long history with the operations at Algeciras. Its management was part of the former Morris team that

supplied the terminal with a transponder-based position detection systems a number of years ago, much of which remains in operation.

“The old transponder RFID system is still selling well and is about 20% cheaper than a GPS system. The unit price difference is offset against the fact that the GPS system is lower maintenance because it’s positioned much higher from the ground, whereas the transponders are at truck level and are often knocked by the truck drivers.

“We are right now upgrading some of the transponders, and the two systems work fine together,” he adds.

The next phase of deployment of the system is to work on the XML interfaces between the system and the Navis TOS.

Lambert says: “From our point of view, XML is much more flexible and means you can generally interface with existing Navis software. It allows for speed of development and future flexibility.” ■