

Origin, development and spread of the 45' PW

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Ladies & Gentlemen

First of all, I would like to apologise for having to speak in English today. I had my last French lesson when I was 15 years old and I can assure you that was a very long time ago. I have worked in the shipping industry since 1970, firstly as a journalist and then from 1978 onwards, in public relations. I have worked for clients in the UK, Taiwan, Turkey, Iceland, Sweden, Spain, Germany and the Netherlands, Finland, Sweden, Italy and the German-speaking part of Switzerland but never France – so I do have an excuse!

In 2004, together with my Deputy Chairman Gavin Roser, we started Coastlink. It was only meant to be a UK organisation but that changed very quickly. We are totally European now – and we do have French members but I fear it is too late to learn the language!

Coastlink seeks to educate, create debate and provide networking opportunities. Our conferences are designed to do all three things and out of this, we hope also new business, new services come. We promote shortsea container shipping and therefore also multimodal transport. We don't hate trucking companies but we would like to see more cargo on shortsea container ships.

But it is back to my PR business that I first became involved with 45ft palletwide containers. One of my first clients was Geest North Sea Line, a Dutch company that pioneered shortsea container transport. Geest operated a fleet of 20ft and 40ft containers and its 40ft containers were initially just the same as deepsea containers. However, 40ft palletwides were introduced during the 1980s to enable customers to get more pallets into a container. Typically you can get 30 Euro-pallets in a 40ft palletwide but only 25 in a 40ft deepsea container.

This was all in the days when the maximum permitted semi-trailer length was a problem for shortsea shipping lines because they always considered that they competed with road hauliers, not with each other. If they couldn't carry as many pallets on a vehicle as a road haulier could, they would be seriously disadvantaged. Their response was to begin building 45ft palletwide containers.

A 45ft palletwide container was the optimum unit size in Europe. It matched the maximum dimensions permissible for transport by road and two can today be transported on a single twin-car articulated rail wagon.

As most of you will appreciate, this is very important. A 40ft deepsea container carries eight fewer pallets than a 45ft palletwide but still costs the same to transport by road: both need a driver, tractor unit and fuel. The millions of 40ft containers that travel around the world are not that efficient or cost effective, despite what the deepsea lines may claim.

In the USA, the situation has become so serious that many importers are now unloading deepsea containers in the West Coast ports and transferring their goods to 53ft trailers or domestic containers. The savings on transport easily offset the additional labour costs in the port areas. In Europe, this has started too; I did hear that Maersk was de-vanning into Samskip 45s for one traffic flow.

Of course this is not what containerisation is supposed to be about – it's supposed to be about door-to-door transport. To address this situation, APL is now offering 53ft deepsea containers for loading in Chiwan, Southern China to US inland destinations.

But back to history. In 1995, the EU revealed its plans for harmonising road vehicle weights and dimensions across the member states. In itself, this was seen as a good idea but one particular proposal relating to the dimensions of a semi-trailer immediately rang alarm bells within the shipping community. If the new regulations were to be adopted without change, it would be impossible to transport these containers by road within the EU without infringing the law.

In those days, the two biggest shortsea operators were Bell Lines and my client Geest North Sea Line. Jointly, we led a campaign aimed at securing minor changes to the proposed regulations that would allow 45ft (13.7m) containers to continue being used on the European road network. After all, we were talking about just a few centimetres! Sadly though, with the notable exception of Maersk, no deepsea shipping line seemed interested in supporting the shortsea lobby.

Despite the environmental implications of a shift from shortsea/intermodal to road, the EU was intransigent and EU Directive 96/53/EC came into force in July 1996. All that the shortsea operators were able to secure were 'grandfather' rights allowing containers built before that date to be exempt from the regulations for a period of ten years.

European legislation lays down the requirements for the length and width of transport by road. The total length of the truck-trailer combination must not exceed 16.5m. From the king-pin to the rear end of the trailer, the limit is 12m, with a swing radius from the king-pin forward of 2.04m. The standard maritime 45ft container extends 8cm at the rear and therefore does not conform to EC directives.

Simply shifting the container forward is not an option. In this case the so-called swing clearance requirements present a problem. The front of the container must remain within a 2.04m radius. The front corners of the container extend more than 2.04m!

A solution was found

Fortunately for the shortsea operators, a solution was found to the problem. It was an Archimedes moment although history does not record whether Wout Pronk, the Managing Director of Geest North Sea, was in the bath at the time.

Engineers said it couldn't be done but by chamfering the front corner castings and corner posts, it proved possible to meet the new regulations without losing cargo capacity. This design was subsequently patented and rights to this patent currently lie with Geest Patents BV, a company headed by Jacob van Geest, the owner of Geest North Sea Line until its sale to Samskip in 2005.

Let's remind ourselves of the regulations

Just knocking off the corners and we have a solution.

Shortsea operators then began to purchase 45ft containers fitted with 'Geest' corner castings but the deepsea lines, almost without exception, ignored the situation. They continued to build standard 45ft containers - primarily it should be said, for the US market - and they are still today risking prosecution by using standard 45ft containers on the roads in Europe.

A slight compromise

The deepsea lines did win a slight dispensation in that the EU now permits individual countries to allow standard 45ft containers to be operated within their own countries but they are not allowed to cross into other EU countries. In practice, this means that a 45ft deepsea container can be unloaded at Rotterdam and trucked to anywhere in the Netherlands but it can't be transported across the Dutch border into Belgium, Germany or any other EU country.

The importance of the palletwide container

Many believe that European intermodalism owes a great debt to the 45ft palletwide container with its chamfered corner castings. Back in 1996, the industry was facing a situation where intermodal operators were building all sorts of equipment and standardisation was fast disappearing out of the window. 13.6m swapbodies that couldn't be stacked or even top lifted were causing big problems for rail, barge and terminal operators.

You can see here that swapbodies can't be block stacked even one-high. The handler needs space between the containers to be able to bottom lift them.

Suddenly though, we had a unit that met virtually the entire needs of the European intermodal industry. Notice how these can be stacked densely, reducing the amount of land they need, saving the terminal a lot of money.

Operators say that the additional cost of the chamfered corner castings is really quite negligible.

In Europe, the standard unit, the 45ft palletwide dry box container, also offers much greater effective capacity than an 8ft wide 40 or 45 footer. Although it is only slightly wider than a deepsea container, taking advantage of the 2.5m width possible on Europe's roads, it is designed to accommodate packaging that conforms to metric standards. This means they can carry up to 33 Euro pallets, significantly more than can be carried in deepsea boxes.

This is true for reefers too.

Other types are evolving too and companies like the supermarket giant Tesco are enthusiastic.

They go on ro-ro ships too, very efficiently as they can be double-stacked on many ships.

Some deepsea lines are able to carry European 45ft palletwides on their existing vessels but only in limited numbers, their extra width creating significant stowage difficulties on deck. Under deck, the situation is even worse; very few deepsea ships have 45ft bays, only 20ft/40ft bays.

Is it time to re-design deepsea ships in the interests of the environment?

Very few deepsea container vessels, even the latest post-Panamax giants, are designed to carry 45ft containers in any great number. In America, they have 53ft containers operating domestically but only APL has built 53ft containers able to be transported by sea across the Pacific. As they are 8ft 6in wide instead of 8ft, they must be a nightmare to accommodate.

I have often thought that deepsea lines should take a look at their own outdated shipboard systems that force them to use predominantly 20ft and 40ft long, 8ft wide containers. Since these have less capacity than the 'domestic' containers now common in Europe and North America, the landside operations of the deepsea carriers require more truck movements than they would if they optimised the sizes of container they employ. The current situation is hardly an environmentally sustainable solution.

This problem, which is partly a matter of inertia or resistance to change and partly one of ship design, is not insurmountable. European shortsea operators have tackled this successfully and shipbuilders like Sietas and Damen are now building ships that can accommodate both standard ISO containers and 2.5m palletwides. It is about time the deepsea lines took note.

Thank you.