08 & 09th April 2002
Hilton Hotel
Amsterdam, The Netherlands

IN CO-OPERATION WITH CEMENT DISTRIBUTION CONSULTANTS

GENERAL BULK CARRIERS VERSUS SELFUNLOADING SHIPS

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Biography

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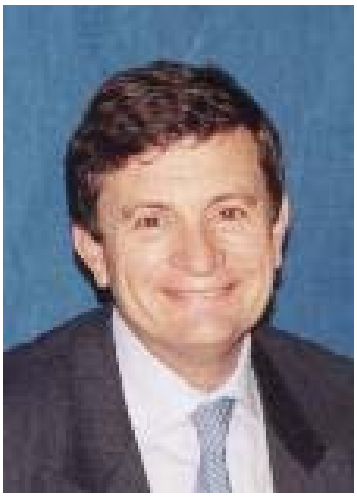

Born in 1958 in the City of Barcelona, Spain, where he graduated as a telecommunication engineer in 1981 from Barcelona's Polytechnic University .

In the shipping business since 1983, as owner and manager of Auto Chartering s.a. , brokering company specializing in cement transportation that chartered during the year 2001 more than 4.2 million tons of cement and clinker, he is also shareholder in other maritime companies focused in shipowning, stevedoring and warehousing.

AUTO CHARTERING, S. A.

SELF DISCHARGING VESSEL VERSUS BULK CARRIER

Today we are going to talk about differences between selfdischarging vessels (pneumatic ones) and ordinary bulk carriers.

When it come to the supply of cement in bulk, the big question made by the person in charge of a terminal is whether they should import via a selfdischarging vessel or through a conventional bulk carrier!

The truth is that the answer is not that easy..., what I intend to do through out this expose is to try to bring out the pros and cons of each discharging system.

In a first part, we will talk about the investments for each system, then we will discuss the logistic difference between both, and last but not least we will of course run through a very important issue which is the cost per Metric tonne for each system.

So, let's move on with the Investment:

INVESTMENT

Needless to say that the purchase of a land discharging system (Kovako, Siwertell or similar) represents a substantial investment.

It is therefore very much important to be sure of the volume we intent to import and commercialise through our land silo as we can easily make an error in choosing the capacity of our land discharging system.

If the imports are much higher than the ones we initially forecasted, then we will understand that we have made an error and we should have bought a more efficient discharging machine and most of the time, we are forced to invest in a second and bigger machine, which will then increase the initial budget.

On the contrary, if at the end we import much less tonnage than the one forecasted we would have invested in a machine without using its full capacity, which is a waste of money!

On the other hand, with a selfdischarging vessel, the solution is very simple as you would freight a vessel according to your imports needs and should you make an error on import volumes, you would always solve the minor problem freighting a bigger or smaller vessel.

The chartering of a selfdischarging vessel (Pneumatic) has no requested investment from the Charterers side, as the only one, which bears this investment, is the shipowner.
Now on the long run, if you invest in a shore machine, you will repay it after some years and it will have a residual value. It will not happen with a chartered vessel.

Now that we have seen the investment aspect, let look into the logistic side of the matter which is one of the most important factors which will make you chose one discharging means from the other.

LOGISTIC

The logistic of a selfdischarging vessel is of course different from the one of an ordinary conventional vessel:

First of all the Flexibility:

It is very difficult to freight a pneumatic vessel on spot basis as usually you have to charter it on semester basis or even on yearly basis.
On the other hand it is much easier to find conventional vessels of any size on the market and take her on spot basis or if requested on consecutive voyages.

The good thing of freighting a bulk vessel on spot basis is that sometimes you will freight the vessel on "return basis " which will enable you to lower the freight.
This is the case of the important cement traffic from the Mediterranean region to the US, which is a clear example of what I'm saying.
Grain and coal is the main traffic you will find between the US to the Mediterranean regions, now the other way around (med region to USA) is what we would call a "positioning freightment ", which would mean that the freight would be much cheaper from Med to Us then the other way around.

As mentioned before, there are not a lot of selfdischarging vessels on the market where on the other hand, you will find a great deal of conventional Bulk carriers.
It is difficult to find selfdischarging vessels of more then 25.000 MT, where you can find plenty of bulk carriers of this tonnage.

Second lets talk about the possible damages for having wet cement in holds

Bulk carriers trading cement are usually overaged vessels, which sometimes also have problems with the watertightness of their hatches.
When there is bad sea weather, theses vessels usually have water filtration's in their holds which always causes headaches and important discharging problems if on the other side you discharge the cement with a sucking or screw system (breakdown of crew conveyor belt / clogging of sucking machines, etc…). According to shipping law, it is charterer's obligation to discharge wet cargo from holds.

On the other hand, these problems never appear on a pneumatic vessel as they do not have hatches.

Third of all we have the Stevedores and discharging means aspect

In some countries like Spain or Italy, port laws are very strict in this matter, as you are most of the time forced to use the services of stevedores or at least pay for their presence at the port, even though you are paying them for nothing!
On the other hand, in some countries, the cleaning of the holds have to be done by local stevedores, which unfortunately, apart from extra cost which this represents, it also causes big problems if vessel has to be cleaned during weekends or holidays.
With the pneumatic vessel, you will not have any problem with the holds cleaning which does not exist in such vessels.

Fourth of all the breakdown of the discharging systems is also an important aspect.

Needless to say that the discharging means can breakdown, the cement is an abrasive material and therefore maintenance is very much needed. If the land discharging means breakdown, the vessel will have to wait and charge you for possible demurrages which will mean an extra cost, on the other hand, it is the vessels discharging means which breakdown, at least, no demurrages will be charged. In underdeveloped countries, it can be difficult to find qualified staff to operate and maintain shore equipment.

Dust free is an other issue

In some regions of Europe, it is totally prohibited to load or discharge cement with open hatches because of environmental problems (dust, pollution, etc….). If shore means are used, they have to be fitted with special antidust system.

Another issue is the rain

In all rainy countries, when you discharge conventional bulk vessels, discharge has to be interrupted when it starts raining, and this of course may cause you an extra cost of personal and demurrages and in worst case your cement can get wet during hatch closing.
When you discharge with a pneumatic vessel, you can do it day or night snowing or raining.

And last but not least the supply to various terminals is also an important logistic issue

When it comes to supplying to various terminals, which are not well road connected or which are located in several ports of an archipelago, it is better to use a pneumatic vessel instead of moving the land discharging mean from one port to the other or to purchase as many discharging means systems as land silos you have.
Chartering a selfdischarging vessel, this problem can be easily solved.

Now that we have talked of the investments, logistics lets talk about the cost per metric ton

COST PER METRIC TONNE

Now, that we have talked of the investments and logistics, lets talk about the cost per metric ton.

Lets look in each figure:

First of all lets see the approximate Time Charter cost for each type of vessel:

dwcc	Selfdischarging	Bulk carrier - 20/30 years age
3,000 mts	US$ 3,000/day	US$ 2,000/day
6,000 mts	US$ 5,000/day	US$ 3,000/day
10,000 mts	US$ 6,000/day	US$ 3,500/day
20,000 mts	US$ 9,000/day	US$ 4,500/day
30,000 mts	US$ 10,000/day	US$ 6,000/day

If cement sales are going down and the silo is full upon vessels' arrival, demurrages incurred will be higher with a self discharging vessel.

The formula I used for the calculations of the cost per tonnage is the following one:

Cost per ton = ((daily time charter x voyage duration) + bunker + port expenses) / tons loaded

Let's see how this affects each system:

+ Daily time charter: as per above figures.

+ Duration of the trip:	The loading & steaming time for both vessels will be the same. Discharging time will depend on the power of the pneumatic vessel or the land discharging means.
+ Bunker:	In the case of the pneumatic vessel, the consumption at loading and during the sailing will be approximately the same, but it will be increased when discharging.
+ Port D/A's :	They will be the same for both types of vessels as long as the discharging rate is the same.

Now if round voyage duration is the same for both types of vessels, the difference of cost will be as following:

Cost difference = ((TC SD - TC BC) x duration of trip + difference in bunker)/tons loaded

Where TC SD = Time charter for selfdischarging
TC BC = Time charter for bulk carrier

What comes out of the above is that a pneumatic vessel will always be less competitive if the sourcing is far away, therefore when it comes to pneumatic vessel you should always bear in mind that it is important for the source to be as close as possible from the destination.

Let me give you a specific example and lets compare the cement supply from Turkey to the Spanish Med region for shipments of about 10.000 Mtns which would move in a year time about 200.000 Mt of cement.

Duration of the trip:	12 days of sea + 6 days for loading and discharging: total 18 days
Cost of TC of the Pneumatic vessel:	6,000 US$ per day
Cost of TC of the conventional vessel:	3.500 US$ per day
Saving in bunker between Pneumatic vessel and BC:	1.800 US$ per day

To get the difference in cost per tonnes between both types of vessel we shall apply the formula I indicated before:

Cost difference: = (6,000 - 3,500) x 18 + 1,800/10,000 = US$ 4.5 per mt

This means that the pneumatic vessel will cost us about 4.5 US$/MT more than a bulk carrier.

Now what will we save on the discharging?

- Amortisation of the discharging mean

- Maintenance cost of the discharging mean (spares and staff)
- Fuel for the running of the discharging mean
  - In some case stevedores at discharging port
  - Cleaning of the holds (Bobcat, personal, renting of cranes to put bobcat in holds; etc…)
- Possible demurrages in case land system breakdown

CONCLUSION

It is impossible to say which mean is better than the other, the proof is that both means are still widely used around the world.

The truth is that both means have their advantages and their inconveniences, it is only up to the importer to study carefully what means will suit him better bearing in mind the cost difference but also the logistic and investment factors which we stated before and which are very important and will determine what means is to be chosen.