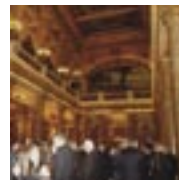


31st Logistics Meeting

M O N A C O



23 - 27 October 2004

CHEMICAL LOGISTICS:
FASTEN YOUR SEATBELT - START YOUR ENGINE



THE EUROPEAN PETROCHEMICAL ASSOCIATION



1. INTRODUCTION

The EPCA's 31st Logistics Meeting was held at the Monte Carlo Grand Hotel in Monaco on 23-27 October 2004. Welcoming delegates, the EPCA Logistics Committee Chairman, Dennis Tual of Arkema, said that this had been another busy year for the Association in the logistics field. A joint EPCA/European Chemical Industry Council (CEFIC) Think Tank had spent a good part of the past year considering excellence in the supply chain. The findings of this group had been distilled into a brochure and were to be discussed in a special panel session at the 31st Logistics Meeting.

In addition, said Dennis Tual, the joint CEFIC/European Chemical Transport Association (ECTA) Working Group on Behaviour-based Safety (BBS) had completed the Guidelines for Safe Driving of Road Freight Vehicles, as part of an initiative by the chemical industry to upgrade the chemical driver training regime and extend its Responsible Care safety remit beyond the plant gates. The relevant BBS requirements have been incorporated in the latest revised edition of the Safety and Quality Assessment System for Road Transport (SQAS Road). Another joint CEFIC/ECTA Working Group, on Subcontracting, was in the process of finalising Guidelines on Subcontractor Agreements for Chemical Land Transport. Following their expected approval in the next few weeks, these are likely to be available for application by the industry in January 2005.

Looking to the future, Denis Tual told Logistics Meeting delegates that the Association plans to combine the EPCA Annual and Logistics Meetings, beginning in 2006 in Monaco. Although the conference sessions for the two meetings would be held on separate days, there would be sufficient overlap and considerable opportunity for networking across the industry spectrum.

The chairman then handed proceedings over to Michael Buerk of the BBC, in whose capable hands the task of moderating the Association's Annual and Logistics Meetings has now rested for the past 11 years. Michael Buerk said that he had followed numerous chemical industry cycles over that period. This year there is more optimism than there has been for some time. Industry players are more upbeat and some money is being made. However, Michael Buerk admitted that this is the short-term view. For the longer term, many are gloomy about the European chemical industry's prospects in the face strengthening global competition, stagnating markets, regulatory constraints and rising costs.

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2. CHALLENGES FOR EUROPEAN PETROCHEMICALS

2.1 What industry in general has to do

The first speaker was Frans Noteborn, Chief Executive Officer of SABIC EuroPetrochemicals, who provided a sobering insight into the future challenges facing the European chemical industry in his keynote presentation "Challenges for the European Petrochemical Business". The rapidly growing demand for chemicals in Asia and expanding production capacity in the Middle East are placing Europe's traditional role as the leading chemical production centre at risk.



Frans Noteborn pointed out that it behoves Europeans to note the Winston Churchill quote: "A pessimist sees difficulty in every opportunity; an optimist sees opportunity in every difficulty." Europeans must not let the opportunities

thrown up by this change in the global petrochemical axis pass without making use of them.

The recent CEFIC-sponsored study "Chemical Industry 2015: Roads to the Future" provides the industry with a valuable working tool, as it identifies the comparative weaknesses of the European industry and provides a focus for the most appropriate remedial action. One of the greatest challenges is the regulatory burden borne by the industry. Over the past 15 years the European Parliament has imposed 527 different environmental regulations, for example. It costs 10 times as much and takes three times longer to introduce a new substance in Europe than it does in the US. While not disputing the merit of many of these European requirements, the cumulative effect of the full body of these rules is debilitating, and the industry is calling for a rationalisation of the regime. European regulatory constraints also hamper restructuring amongst the region's chemical producers.

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The CEFIC study posits four scenarios for the European chemical industry in 2015: sunny, cloudy, rain and stormy. The sunny scenario represents a continued expansion of the industry at a rate of 3.3 per cent per annum while, at the other end of the scale, the stormy scenario entails a 6 per cent per annum shrinkage.

Frans Noteborn told EPCA delegates that for the sunny scenario, or even the cloudy scenario, to be realised, all the stakeholders will need to take enlightened, unified action. That the fate of the European chemical industry is closely tied to that of many other industries across the region adds pressure for the correct decisions to be taken. Actions required include drives for improved energy efficiencies; liberalised energy markets; improved logistics infrastructures; free trade; a regulatory framework conducive to innovation; an improved industry image; and rules that are fair and universally applied worldwide.

2.2 The SABIC approach

Frans Noteborn concluded by pointing out that the long-term strategy of his own company encompasses not only becoming one of the world's top five petrochemical producers by 2015, built upon its access to competitively priced feedstock in the Middle East, but also strengthening its position in Europe. Truly global players need a presence in each of the main markets, which Europe certainly will remain. SABIC remains strongly committed to Europe; the aim is to be the best in class, with a worldscale petrochemical presence in the region.

The company anticipates having only two production sites in Europe by 2015 but these will be supplemented by a major North West Europe distribution hub. As far as logistics service providers (LSPs) are concerned, this will mean a significant growth in bulk and containerised shipments of SABIC chemicals from the Middle East to Europe, amongst other destinations. In addition, movements of SABIC chemicals within Europe will rise.



Logistics is key to realising SABIC's growth ambitions, said the speaker. The company is linking its supply chain management systems worldwide, including in Saudi Arabia and Europe. In Europe SABIC will be looking for LSPs able to help the company realise its region-wide ambitions with a performance that is best in class. In these trust-based partnerships, SABIC will be seeking LSPs able to assist with aspects such as modal shift solutions and payload optimisation.

"For the best possible outcome for all those with a stake in the future economic well-being of Europe, we will need the support of regulatory authorities willing and able to establish the right business environment," concluded Frans Noteborn. "We need governments with an appreciation of the benefits that a healthy European chemical industry can bring to us all."

3. EXCELLENCE IN THE SUPPLY CHAIN

3.1 Think Tank work

Prior to a panel discussion on the topic, Professor Alan McKinnon of Heriot Watt University in Edinburgh described the results of the EPCA/CEFIC Think Tank on Excellence in the Supply Chain. The Think Tank was established at the end of 2003 in recognition of the need to take steps to maintain the long-term competitiveness of the European chemical industry. With limited opportunities for wringing any further cost savings out of chemical production, the Think Tank focused on ways in which the supply chain can yield additional economies. The Think Tank studied how other sectors manage their supply chains in advance of defining a future supply chain best practice for the European chemical industry. The final task of the Think Tank was to devise a package of measures to help industry achieve supply chain excellence.

Chemical supply chains are influenced by developments in the political, economic, social, technological, environmental and legal fields. For example, industry consolidation and increasing overseas production are serving to lengthen

chemical supply chains. At the same time increasing congestion on European roads, fuel price rises, wage demands and tightening environmental controls, including on engine emissions, are also pushing up supply chain costs.

3.2 Recommended actions



The EPCA/CEFIC Think Tank came up with a number of recommendations, said Prof McKinnon. At a company level, there are supply chain savings to be made by chemical producers by rationalising the range

of commodity products on offer; improving the degree of functional coordination within an organisation; making more rational use of transport modes; abandoning the monthly payment cycle in favour of a rolling credit system; increasing the percentage of goods shipped in bulk; applying vendor-managed inventory more widely; and practising a greater diversity in delivery service by customer group.

For participants in the chemical supply chain as a whole, the Think Tank recommends the development of swap arrangements; the pooling of logistics assets; improving the backloading of vehicles and containers; and generally raising the level of supply chain skills in the chemical industry. Looking at LSPs specifically, the Think Tank advocates the development of stronger relations between producers and their LSPs; making greater use of lead LSPs; overhauling the measurement of LSP performance; and extending the use of container terminal infrastructure.

Bearing in mind the comments of Frans Noteborn, the Think Tank also concluded that the European Union and national governments also have a key role to play in creating an environment in which cost savings in the supply chain can be achieved. The Think Tank recommended a full liberalisation of the rail and waterborne freight markets; risk funding for new intermodal markets; harmonisation and standardisation of

transport, telematic and electronic tolling systems; and the provision of financial support for transport infrastructure.

Taken together, said Prof McKinnon, these recommended actions represent a three-dimensional action plan. The first axis represents vertical change, within the chemical production company itself. The second axis is horizontal change, across and amongst all chemical producers in unison. The third axis is LSP development, covering the strengthening of relationships between producers and their LSPs.

3.3 Future priorities

"The EPCA/CEFIC Think Tank found that there is a compelling need for action, and identified what course this action needs to take," said Professor McKinnon. "With this report they have provided a road map for the future which the industry now needs to carry forward. Chemical producers and their LSPs need to read and consider this report. Managers need to tell their boards, and "champions" who will help in the realisation of these recommendations need to be identified. It is important that the report, and all the good work which underpins it, does not wither and die on the vine."

As part of this road map for action in the chemical supply chain sector, the Think Tank has identified five specific tracks to be followed up, based on the recommendations outlined above. Each of these should have a team of committed individuals and champions to drive their part of the initiative forward. Prof McKinnon concluded by telling the EPCA Logistics Meeting delegates that, in recognition of the "compelling need for action" we have identified, this work needs to start now.

3.4 Panel discussion

Following his presentation, Prof McKinnon was joined at the top table by Frans Noteborn and four other speakers for a panel discussion on the EPCA/CEFIC Think Tank on Excellence in the Supply Chain. The participants were as follows:

Moderator:

- Michael Buerk, BBC

Panellists:

- Professor Alan McKinnon of Heriot Watt University
- Frans Noteborn, SABIC EuroPetrochemicals
- Alan Braithwaite, LCP Consulting
- Mark Eggleston, Phillip Townsend Associates
- Mark Major, European Commission, Transport & Energy Directorate (DG TREN)
- Frank Otten, DSM



The discussion provided an opportunity for each sector representative to voice opinions on the Think Tank recommendations and the main challenges facing the industry as it seeks to cut supply chain costs and maintain a robust presence.

Mark Eggleston started out by saying that US chemical distribution costs are much lower than they are in Europe, primarily because such a large share of the US production moves in bulk form in large volumes by rail. Traditional constraints make it difficult to replicate US practices in Europe.

When chided about the lack of progress in rail liberalisation in Europe, Mark Major pointed out that liberalisation is a long, difficult process but progress is being made. Everything that the European Commission does is done with the good of Europe and its citizens foremost in mind. Shippers, said Mark Major, need to be much more engaged with Brussels, both as a unified industry and in tandem with other industries with



common interests. On the positive side, Europe is a unique and leading market, which is getting bigger, and the political and social systems are the envy of the world.

Shipper responsibilities were also highlighted by Alan Braithwaite. Chemical LSPs are beleaguered in today's competitive market, and downward pressures on rates do not incentivise innovation. Shippers have a responsibility to find new ways of interacting with their LSPs to create pathways to progress. Frank Otten reiterated the fact that five working groups are being established to progress the Think Tank recommendations and pointed out that these groups will facilitate such interaction.

All the panellists concluded on a relatively upbeat note. The European chemical industry, and its supply chain, are functionally excellent. However, as the Think Tank concluded, steps have to be taken to safeguard the industry's competitiveness in the global marketplace. All the stakeholders will have to work in unison if optimum benefit is to be derived from the Think Tank recommendations.

4. CHEMICAL TANKERS

4.1 Fleet prospects and challenges



Jacqueline Richardson of Richardson Lawrie Associates in London provided EPCA Logistics Meeting delegates with a review of (a) the key elements of the global chemical tanker market and (b) the factors impacting

the development of the chemical tanker fleet. As regards deepsea chemical tanker operations, the trade patterns remain diffuse, even though the Middle East continues to increase market share. Middle East exporters despatched 15 million tonnes of chemicals in 2003, or about 26 per cent of

all petrochemicals shipped on deepsea routes. This share is expected to rise to 34 per cent by 2010.

Another key element in the global traffic patterns is the slowing pace of trade growth. Nevertheless, the chemical trades are still robust compared to other tanker sectors. In addition, the number of "important" chemical products moved in significant volumes is growing. In Europe chemical imports are increasing due to enlargement of the community and curtailment of production capacity in the region.

The chemical tanker fleet can be characterised as a perpetually "young" fleet, said Jacqueline Richardson. Over 60 per cent of the fleet has been delivered since 1995, and the newbuilding orderbook is equivalent to 18 per cent of the existing fleet in capacity terms. The tradition in the chemical tanker sector is to "downgrade" ships into less-demanding trades as vessels age. However, tightening legislation, not least the accelerated phaseout of single-hull tankers and the pending requirement to carry certain polluting cargoes, including a number of vegetable oils, in higher specification ships than was previously the case, is making it more difficult to utilise older tankers in this way.

Although the chemship fleet is a relatively consolidated fleet, the list of significant operators is currently increasing, in line with the diffusion of trade. In 1997 there were 10 chemical tanker operators each controlling more than 1 per cent of the world fleet. Today, the number of such operators is 14.

As a general observation, chemical tanker earnings have been increasing steadily over the last four years from historically low levels. The improvement has been due to a relatively good fleet supply/demand balance, itself brought about by the strengthening performance of the global chemical industry and the relatively modest newbuilding orderbook.

4.2 Panel discussion

Following her presentation, Jacqueline Richardson was joined at the top table by four other speakers for a panel discussion

on the issues and challenges facing those involved with the chemical tanker market. The participants were as follows:

Moderator:

- Michael Buerk, BBC

Panellists:

- Jacqueline Richardson, Richardson Lawrie Associates
- Jan Arthur Hammer, Odfjell
- René Van Laeken, ExxonMobil
- Peter van Loef, Broere Essberger Chempool
- Martin Whittle, Chemical Distribution Institute (CDI)



Jan Hammer started the panel discussion by pointing out that while chemical tankers may be making more money now than four years ago, the returns are still modest and not enough to justify the cost of a sophisticated chemical parcel tanker.

As an illustration, the current cost of such a ship, at about US\$100 million, is the same as that for a new very large crude carrier (VLCC). Whereas VLCCs are currently earning spot cargo freight rates of US\$150,000 per day, chemical tanker owners are not making one-quarter of that amount.

Furthermore, said Jan Hammer, many of the ships in the current chemical tanker orderbook are stainless steel ships being built in Japan. They are less robust and less sophisticated ships than the previous generation of European-built chemical parcel tankers. Owners have been forced to opt for such ships due to a reluctance by charterers to be associated with older tankers of 20 years old or more following the Prestige and

Erika accidents in recent years. Both accidents involved older, single-hull petroleum product tankers that suffered hull structural damage and subsequently sank.

Chemical tanker owners point out that their ships are built to more rigorous specifications than older, single-hull product tankers and that it is unfair to group their ships into a blanket ship age restriction policy. Age restrictions encourage owners to build cheaper ships which is the opposite of what is intended from a sound tanker safety regime.

Martin Whittle stated that the number of chemical tanker incidents has continued to fall in recent years, in line with the tightening tanker safety regime and the general improvement in the safety record for all types of tanker. However, from the start of 2004 there has been a worrying increase in the number of reported incidents on chemical tankers. With human error identified as the root cause of 80 per cent of marine casualties, there are concerns that the increasing number of chemship incidents is related to the loss of experienced seafarers.

Whenever, the freight markets are tight, there is a tendency to target operational costs, including crew wage bills, as a means of reducing overheads. René Van Laeken confirmed that the loss of experienced manpower is a danger, especially as the high-profile liquefied natural gas carrier (LNGC) sector is growing rapidly and crews with experience of labour-intensive chemical tanker operations make attractive fodder for LNGC service.

Peter van Loef, representing the European shortsea chemical tanker sector, said that the European market is one of the most mature, while the fleet serving it remains relatively fragmented. Again, because the returns are not high enough to justify sophisticated newbuildings, and because there is little incentive from charterers to construct such ships, European shortsea operators are having to consider newbuildings that are cheaper and simpler than existing ships. "The more quality that is taken out of the ships, the more you need quality crews," said Peter van Loef. "This



is a major challenge for the industry when it is becoming more and more difficult to retain and motivate experienced crews." The panellists agreed that is also a challenge which charterers must help shipowners to meet, as charterers, too, have a direct interest in well-operated ships.

5. EUROPE AND THE GLOBAL ECONOMY

5.1 The global picture

Michael Buerk introduced the first speaker on the second day of the Logistics Meeting conference as the first woman to lead one of the world's major business schools. Dr Laura D'Andrea Tyson, Dean of the London Business School, addressed EPCA delegates on "Interdependencies and Imbalances in the Global Economy: Implications for Europe".



Dr Tyson stated that, as a result of vibrant global trade and monetary exchange over the last 50 years, the networks of economic interdependence between countries are now deeper, broader, more complex

and involve more people and regions than at any other time in world history.

At the same time, the global economy has become more dependent on the US economy as the engine of growth. The logic of global growth over the last decade is that the US spends and the rest of the world - especially Asia - lends. As a result, the US current account deficit, at a predicted 6 per cent of GDP for 2004, is at its highest ever level.

This state of affairs creates a co-dependency, which is not necessarily a good thing, and growing macroeconomic imbalances. The key question is thus, can the situation be

sustained? Will the rest of the world continue to lend to the US in the amounts necessary to finance projected current account deficits and to fuel global growth. The optimists, pointed out Laura Tyson, believe the answer is yes. Because Asian central banks are financing about 50 per cent of the current US fiscal imbalance, Asian currencies are pegged to the dollar, thus keeping Asian exports competitive. The pessimists are not so sure, fearing that the growing imbalances will trigger a sharp drop in the dollar.

5.2 European role in global imbalances

Europe is one of the regions dependent on the US economy as an engine of growth, primarily because its own growth has been slower than expected over the past 15 years. The primary disappointments have been the slow growth and rising unemployment in the core economies of Germany, France and Italy.

Economic growth depends on population and productivity growth, neither of which are happening in Europe at the moment. In fact, an ageing, low-growth population has been identified as one of the causes of Europe's disappointing growth record. The others are social welfare systems that discourage work and impede business restructuring; regulatory policies that restrict entry for new firms and constrain choices for existing firms; and the European Central Bank's (ECB) overly restrictive monetary policy.

The European condition, said Laura Tyson, is summed up in Andre Safir's 2003 report where he states that the European economies are caught in a vicious cycle. Slow growth has led to higher unemployment which has led to higher social expenditure. This, in turn, has led to higher tax rates which, again, result in slower growth.

It is expected that the 10 countries which recently became EU member states will have comparatively little impact on European growth - the cumulative effect is unlikely to be less than 1 per cent in European GDP, even after 10 years. However, the indirect effect could be significant if the

accession process prompts governments and companies to speed structural change in the core European economies.

5.3 Oil price impact

Laura Tyson then told delegates that higher oil prices could have a noticeable impact. Every sustained rise of US\$10 per barrel in the price of crude oil reduces global annual GDP by about 0.5 per cent. All three major post-war recessions have been triggered by sharp rises in crude oil prices. If the current level of high oil prices is maintained, the US current account deficit is likely to rise to 7 per cent of GDP while the probability of a sudden loss of confidence in the US dollar will increase.

Dr Tyson believes that if the current oil price level continues, European GDP will shrink by more than 0.33 per cent this year while additional upward pressure will be placed on the Euro. This will help contain the inflationary effects of the oil price increase but will exacerbate the contractionary effects on growth and employment in Europe.

5.4 The way forward

Concluding her presentation, Dr Tyson reported to delegates that here were some positive signs, not least new, more flexible labour agreements and challenges in France to its 35-hour working week legislation. However, US fiscal policy over the past five years has done little to ameliorate the risks associated with the current over-reliance on the US.

As regards China, the country has been a good corporate citizen, but there are doubts whether the Chinese economy is sufficiently strong to take on the role of "engine for global growth".

Laura Tyson is a supporter of globalisation and the benefits it can bring. "However, for globalisation to work, we need stability and enlightened legislation from governments which supports business," concluded Dr Tyson. "Companies also need to pay attention to their currency exposures."

6. CONTAINER TRAFFIC

6.1 Shipowner view

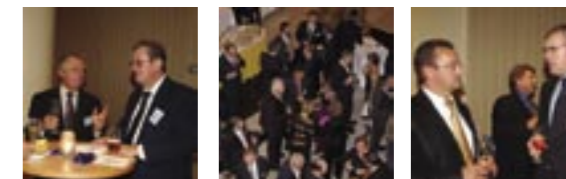


Michael Hassing, chief executive officer of the Maersk Company Ltd, London, told the EPCA delegates that container shipping bore many similarities to chemical production. Both are large, global industries

which are competitive and where tight margins prevail. The container shipping market is strong at the moment, driven by a surging global economy and Chinese export growth. As a result, ship time charter rates have jumped sharply in recent years, by 100-300 per cent, depending on ship size. Furthermore, vessel utilisation is likely to remain high until at least the 2006-07 period. Another characteristic of the current market is the growing trade imbalances, as typified by the 4.3 million twenty-foot equivalent units (TEU) that moved transpacific westbound in 2003 and the 9.4 million TEU moving eastbound.

For continued success, container shipping lines are likely to undergo further consolidation in the years ahead, building on a situation in which 80 per cent of the container-carrying capacity is now in the hands of 20 leading shipping lines. Good management of equipment flows is another essential ingredient for success, as is continued investment in IT solutions and close cooperation between industry and government to ensure that the new maritime security regime is rigorous enough without being too onerous. Over-zealous security measures could entail prohibitive implementation costs and result in major trade disruptions.

Other key players in the container supply chain are ports and inland transport links. It is important, said Michael Hassing, that these other sectors keep pace with the expansion of the container ship fleet if optimum benefit is to be derived from



the potential offered by containerisation. A measure of the extent to which the chemical industry derives benefit from boxes is given by the fact that UK containerised chemical cargo moving internationally by sea has increased by 32.9 per cent over the past three years, in contrast to a growth of only 5.6 per cent for conventional UK cargo over the same period.

6.2 A shipper's view

A shipper's view on the question of secure and efficient container supply chains was given by Paul Gooch of Dow Chemical. He introduced his presentation with a statement made by Colonel Oliver North at a recent US national security conference: "Ensuring weapons of mass destruction do not enter the US in cargo containers from around the world is the number one national security concern today."

Ensuring security in containerised transport offers considerable challenges due to the sheer scale and complexity of the global supply chain, and the difficulty of determining precisely what is in each box. An advanced cargo manifest alone does not assure supply chain integrity.

Inevitably, there has to be some trade-off between security and efficiency, said Paul Gooch, but there is much that can be done through good cooperation amongst the stakeholders to enhance governance, and hence security, of the supply chain. In this respect the Chemical Distribution Institute's recently developed Marine Packed Cargo (CDI-MPC) safety and quality assessment scheme, which covers all stages of the international container supply chain for chemicals, provides a valuable tool for achieving good governance. Although only about 5 per cent of containers in international commerce carry chemicals, the main elements of the CDI-MPC regime hold great potential for wide applicability across the freight spectrum.

Paul Gooch finished his presentation by identifying the following six steps that need to be considered in developing the CDI-MPC approach for industry-wide use:

1. **Due diligence**
Assessing the movement of goods from both a security and efficiency point of view
2. **Metrics**
Good data management; increased use of IT
3. **Partnership**
Strong central partnership between shipper and carrier
4. **Technology**
Cross-fertilisation of ideas to promote optimum use of technology
5. **Best practice**
Amalgamation of best practices from across freight industry spectrum
6. **Collaborative solutions**
Encouraging input from all stakeholders

6.3 Panel discussion

Following their presentation, Michael Hassing and Paul Gooch were joined at the top table by three other speakers for a panel discussion on container logistics issues. The participants were as follows:

Moderator:

- Michael Buerk, BBC

Panellists:

- Michael Hassing, Maersk Co Ltd
- Paul Gooch, Dow Chemical
- Marc de Kort, Vos Logistics
- Renato Chiavi, DHL Danzas Air & Ocean
- Reg Lee, ITCO



The panellists all agreed that the current state of flux of the container ship market presents considerable challenges in terms of both logistics and security. The container ship orderbook is equivalent to 50 per cent of the existing fleet in capacity terms, and many of the new ships are large mega-carriers, each able to carry 25 per cent more boxes than the largest containership of recent years. The large ships will focus on serving the major hub ports of the world so there will also be a need for significant numbers of smaller ships in future to serve as regional feeder vessels.

Against this background, there are the imbalanced freight flows, and imbalanced revenue streams. Michael Hassing pointed out that the deepsea container shipping lines now earn 75-80 per cent of their revenues on "headhaul" routes and only 20-25 per cent on backhauls. In the past the split was a more balanced 60/40 split. He said that there needs to be more coordination between industries, e.g. computer shippers in Asia linking with beer exporters in Europe, with a view to minimising the repositioning of empty containers. It was pointed out that the chemical industry is not getting the most out of these opportunities. Reg Lee stated that tank container operators delivering cargoes to Asia, for example, incur high repositioning costs as they seek to find slots for their empty tanks on container ships loading in the region. Demand for space is so high that container shipping lines tend to give priority to their own freight containers.

Renato Chiavi said that DHL encourages liaison between the chemical and other industries in attempts to streamline the supply chain, but admitted that, as a general observation, his company had also found that the chemical industry had traditionally been slow to partner other industries. Marc de Kort explained that shippers need to freely provide relevant information to their logistics service suppliers in order to gain a full appreciation of the task in hand and, thus, drive costs out of the system.

Reg Lee added that it was his experience that chemical shippers do not like to change established practices unless they themselves introduce the change. In the same vein,

Michael Hassing said that the chemical industry in general is still showing a lack of urgency in facing up to the new challenges. There is great competition now coming from Asia and there is a need for the main chemical industry players in Europe to work together to make the best out of their acknowledged efficiencies and expertise base. Now, with the great emphasis on security there is even more of a need for timely, concerted action on the part of the entire European chemical industry.

7. CONCLUSIONS

Summing up the wide-ranging proceedings of the 31st EPCA Logistics Meeting, Dennis Tual said that the discussions had shown that the chemical industry was not resting on its laurels and that it had succeeded in identifying those areas in which further progress needs to be made. Logistics has been shown to be an area where significant gains in efficiencies can be made, and that such progress can provide the overall European chemical industry with improved levels of competitiveness. This is evidenced in the work of the Think Tank on Supply Chain Excellence, for example.

In this respect, the 31st Logistics Meeting served to promote the improved communications and cooperation which everybody agrees is needed if this further progress is to be achieved. However, the meeting also showed that today's challenges are exceptional and that timely, brave and concerted action is needed if the available opportunity is to be grasped. Delegates had been given much food for thought to take back to their respective companies.

Referring to the Monaco racing theme of the meeting, Dennis Tual closed by saying that the lights are now flashing green and that it is time to get this Formula 1 race underway without further ado. The window of opportunity will not remain open for long.

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