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COVER PHOTO
Storage at Barcelona, Spain
Photo courtesy of GATX Terminals Corporation

In Brief

Esso Production Malaysia has signed *a long-term gas production sharing contract with Petronas. Together with an existing natural gas project and sales agreement, the contract covers the supply of over 12 tncuft of gas, meeting about two-thirds of the projected gas demand in peninsular Malaysia for more than 25 years.*

OPEC announced at its recent 102nd *meeting in Vienna that it planned to freeze the current total production ceiling for member states at 25.03 million b/d until the end of 1997.*

Elf Petroleum Nigeria Ltd is to operate *the Amenam oilfield in the south-eastern Niger Delta on behalf of its joint venture with Mobil Producing Nigeria Ltd. Once onstream, the field will produce 90,000 b/d.*

BG Exploration & Production's first *exploration gas discovery well in the North Sinai offshore area concession in the Mediterranean Sea, offshore Egypt, has tested in excess of 25 mncuft/d. The natural gas is of high quality with less than 0.5 per cent impurities.*

Russia's state Duma lower house has *approved seven energy and mineral deposits eligible for development under production sharing agreements. Foreign investors will be allowed to participate in just two projects however – the Kuranakh gold group and the Prirazlomnoye oil deposit in the Barent's Sea shelf.*

Mobil is to raise up to $400 million *from the sale of non-core oil and gas assets. These were previously held by Ampolex which was acquired last year for $1.8 billion. Assets include a 25 per cent stake in the Harriet oil and gas project and a 35 per cent interest in the East Spar gas and condensate field, both of which are located in the Carnarvon Basin offshore Western Australia.*

Russia and Chechnya are reported to *be close to signing a deal securing the pipeline running from Baku, capital of Azerbaijan, through the Chechen capital of Dzhokar-Ghala (formerly Grozny) to the Russian Black Sea port of Novorossiysk that will help accelerate exploitation of Caspian oil reserves. The breakthrough in the talks, which have been hampered by the continuing political instability of the region, is said to have been brokered by Azerbaijan President Haydar Aliyev, who recently made his first state visit to Moscow.*

From the Editor

Readers will notice that in this issue a number of changes have been made to the appearance of *Petroleum Review*. The 'News in Brief' and 'Newsdesk' pages have been amalgamated and redesigned with the stories grouped as 'Upstream' or 'Downstream'. We have also applied the new design to our other regular features. The cover of the magazine is now being varnished to give better colour reproduction and a smarter appearance. We hope you like the changes.

Just as the oil and gas industry has to constantly review its operations and the public's perception of them, any magazine serving them must do the same. Over the next few months I will be making further changes with the aim of giving the magazine a newer and fresher look. People in the industry are generally busy and under pressure with only limited reading time. This means that information sources such as *Petroleum Review* are most useful when material is clearly flagged in terms of its content, and comprehensive in terms of the material covered.

A magazine, however, does not live in isolation – it must meet the requirements of its readers or it will fail in its primary task. I am keen to provide a forum for reader's views on developments in the industry and would like to publish more 'Letters to the Editor'. If any help or advice is needed with these, please don't hesitate to get in contact. As Editor I am always pleased to receive suggestions, criticism and even praise from readers, for only when a magazine meets its readers' requirements does it begin to achieve its full potential.

Chris Skrebowski

New extended reach drilling record in South China Sea

Phillips Petroleum China Inc and co-venturers China National Offshore Oil Corporation, Pecten Orient Company and Shell Exploration (China) Ltd report that they have set a world record for extended reach drilling at a satellite oilfield in Block 15/11 of the South China Sea.

The Xijiang 24-3-A14 well has a displacement of 8,060m from its base platform located 50km south of Hong Kong. It is currently producing 4,200 barrels per day (b/d) and is expected to flow more than 10,000 b/d once full production is reached.

Completion of the well has also set a record for China's longest measured-depth well, at 9,237m.

The field partners plan to drill more extended reach wells in order to tap a number of satellite fields in the South China Sea while maximizing the economic life of existing platforms.

Phillips holds a 24.5 per cent interest in the Xijiang 24-3 field and acts as operator. CNOOC holds a 51 per cent stake in the project, Pecten 12.5 per cent and Shell the remaining 12 per cent.

Enhanced recovery boost for Prudhoe Bay

A $160-million project that will add incremental production of 20,000 barrels of liquids per day (b/d) at Prudhoe Bay and increase total liquids recovery by approximately 50 million barrels has been approved by Arco Alaska Inc, BP Exploration (Alaska) Inc and Exxon Company USA.

The Miscible Injectant Expansion (MIX) project, scheduled to complete by late 1999, will increase the amount of solvent, or miscible injectant, made at Prudhoe Bay by 20 per cent. This solvent will be used in the field's gas enhanced oil recovery project which is the largest of its kind in the world to date.

The MIX project will also increase the amount of natural gas that can be produced, processed and re-injected into the reservoir from 7.5 billion to 8 billion cubic feet per day (bncuft/d) and will allow field operators to produce oil from a larger number of wells at any given time, states Arco.

Significant modification of the Prudhoe Bay central gas facility will be required to allow for installation of the 2,500-tonne compressor module currently being constructed for the project.

NEWS Upstream

Statoil swaps North Sea assets ...

Statoil has agreed asset purchase and swap deals on 21 licences on the Norwegian and UK continental shelves in a bid to strengthen its position in selected core areas, such as Sleipner, and improve its long-term production profile. Estimated to be worth in the region of NOK5 to 6 billion, the agreements cover some 340 million barrels of oil and 36.5 billion cubic metres (bncum) of natural gas resources.

The company is taking a 12 per cent stake in the Alba oilfield in Block 16/26 in exchange for Chevron acquiring a 7.56 per cent interest in the Draugen field in the Haltenbank area of the Norwegian sector.

Chevron is also to acquire 30 per cent interest and operatorship of licence P157 and between 15 to 20 per cent stakes in PL156, PL158 and PL176 in the Draugen area, together with Statoil's interest in licence PL182 in the Barents Sea.

Statoil is also to assume British Petroleum's 16.9 per cent interest in the Jupiter gas fields in the UK southern sector of the North Sea and its 3.9 per cent equity in the Glitne field.

In return, BP will acquire a 12.5 per cent interest in Statoil's Ula oilfield and 20 per cent interest in the Gyda oilfield – increasing its share in the fields to 80 per cent and 56 per cent respectively – together with 7.56 per cent of the Norwegian company's equity in the Draugen oilfield.

Also included in the asset swap is BP's stake in Norwegian exploration licence PL152 in Block 33/12 in the Statfjord area and its interest, including operatorship, in PL196, Blocks 35/6 and 36/4, north of the Troll field.

Statoil is also purchasing a 15 per cent interest in PL025 from Total in order to strengthen its position in the Sleipner field. It is also acquiring a 20 per cent stake in PL025 (Block 15/3) together with the operatorship, and a 4.5 per cent interest in PL048 (Block 15/5) which includes the Glitne field. In exchange, Elf is to take over a 10 per cent holding in PL90, reinforcing its position in the Oseberg/Heimdal area of the Norwegian North Sea.

Statoil and Norsk Hydro have agreed to swap equity interests in four exploration licences. Statoil will acquire a 10 per cent interest in PL187 in the Sleipner area and a 5 per cent stake in PL196 in its Møre Margin core area. Norsk Hydro will take over a 20 per cent interest in PL143 west of the Gyda field and 10 per cent in PL195 in the northern North Sea.

Statoil reports that it expects the deals to add an extra 20 bncum of gas to its portfolio while its oil holding will 'decline slightly'.

... Elf and Norsk Hydro follow suit

Meanwhille, Elf Norge and Norsk Hydro have agreed to swap interests in four licences on the Norwegian continental shelf. Under the agreements, Elf will transfer 15 per cent of Norwegian licence 036 which corresponds to 9.57 per cent of the Heimdal field and the operatorship to Norsk Hydro.

According to Norsk Hydro, the deal will secure the future use of the Heimdal facilities after the depletion of the field's gas reserves.

In addition, Elf is to transfer to Norsk Hydro 10 per cent of licence 102, Block 25/5 (with the exception of the Frøy field) where Elf is operator, and 2 per cent in licence 120, Block 34/7 and 34/8 (Visund) where Norsk Hydro is operator.

Meanwhile, Norsk Hydro is to transfer its 5 per cent stake in licence 193, Block 34/11 (Kvitebjorn) to Elf.

Two additions to central North Sea infrastructure

Elf Exploration has awarded McDermott-ETPM (UK) two pipelaying contracts for the Central Graben area of the North Sea.

The first contract covers the engineering, procurement, installation and commissioning (EPIC) of a 470-km long, 34-inch diameter pipeline linking the Elgin/Franklin/Shearwater fields to the Shell/Esso Bacton terminal in southeast England. The £200-million contract is claimed to be the largest pipeline contract ever awarded for the UK Continental Shelf. The co-venturers in the Elgin/Franklin field will hold a 55.725 per cent interest in the new SEAL (Shearwater Elgin Area Line) gas pipeline, the remaining 44.275 per cent held by the Shearwater project partners.

The second EPIC contract is for a 24-inch diameter liquids export pipeline linking the Elgin/Franklin/Shearwater fields to the Marnock field where it will be tied-in to the liquids pipeline connecting ETAP to the BP Forties system.

First exports of gas and condensates through the new lines are expected in the year 2000.

In Brief

The world's first downhole multi-*phase pump – developed by Weir Pumps – is reported to have successfully completed its final performance test and will shortly be installed in Texaco's Captain field in the North Sea.*

Total is to drill an oil exploration well *in the Porcupine Basin, off the southwest coast of Ireland. Marathon Petroleum is also expected to drill a well in the Porcupine Basin later this year. Meanwhile Statoil is conducting a two-well appraisal programme on the Connemara Field to determine whether oil can be produced on a commercial basis.*

Energy Equity Corp reports that its *Singa 1 gas well in Indonesia has tested at 566,000 cum/d, confirming a significant gas find that could be in production before the end of 1998.*

British-Borneo is to acquire BHP *Petroleum's interests in Block 9/28a, which contains the Crawford oilfield, and Block 9/29a in the North Sea. The terms of the deal have not been disclosed.*

The Vietnamese government has *given permission for BHP Petroleum to transfer its 43.8 per cent stake in the Dai Hung oilfield to Malaysian state-owned company Petronas.*

Total has signed a three-and-a-half-*year agreement with Kuwait Oil Company covering the provision of technical knowledge and support for KOC's upstream petroleum operations.*

Arco, Texaco and Phillips Petroleum *have formed a joint venture with Corpoven in Venezuela as part of a $3.5-billion extra-heavy crude oil deal. The Petrolera Ameriven venture will develop the Hamaca area, south of El Tigre in Anzoategui state.*

Santos claims to have made one of *Australia's largest onshore gas discoveries. Its Beeree 1 wildcat well in the Barolka field complex in southwest Queensland tested at a rate of 3 mncuft/d. The company used a new air drilling technique that is said to minimize the sort of downhole formation damage caused by conventional drilling methods which utilize drilling muds as the coolant and lubricant for the drill bit. The company has also announced another gas find with its Dorodillo 1 wildcat well in the Cooper/Eromanga basin. The well tested at a rate of 10 mncuft/d.*

In Brief

***It has been reported that** Westdeutsche Landesbank of Germany is to grant Iran a $90-million loan to fund the expansion and renovation of the Soroush offshore oilfield.*

***Reading and Bates Corporation and** Falcon Drilling Company are merging their operations under a $5-billion deal. The new R&B Falcon Corporation venture will operate a fleet of some 14 vessels capable of drilling in water depths of over 3,000 feet as well as a number of conventional drilling rigs and support vessels.*

***Gazprom has released its first set of** accounts prepared under international accounting standards. The 1996 figures confirm the company's position as Russia's most profitable business with sales of Rbs126,239 billion and assets of Rbs506,074 billion at the end of last year. The figures also showed that Gazprom paid Rbs15,799 billion in penalties and interest payments on its overdue tax bill, even though it is, in fact, owed far more by its customers. This helped depress net profits to Rbs8,980 billion ($1.54 billion). The accounts also indicate that the company is one of the largest energy businesses in the world.*

***It is reported that Venezuela's state-**owned PDVSA is to close its Maraven, Lagoven and Corpoven subsidiaries next year as part of a major restructuring programme aimed at saving some $10 billion over the next decade. The three businesses will be replaced by holding companies that will group 16 of PDVSA's operations into exploration and production, manufacturing and marketing, and services units.*

***Tengizchevroil has announced the** award of a $250-million contract to a Bechtel-Enka joint venture for a new oil and gas processing plant at the Tengiz field in Kazakhstan. This will increase production capacity by about 30 per cent to 240,000 b/d by the end of 1999.*

***The Brazilian Senate has approved a bill** that will open up the country's oil and gas sector to private competition. The legislation will remove state-owned Petrobras' 40-year monopoly and allow it to discuss partnerships with foreign investors.*

***The UK Offshore Operators Association** (UKOOA) has set up a task force that will assess the impact of the UK government's wide-ranging review of North Sea taxation on the UK oil and gas industry. The task force is headed by Francis Gugen, Managing Director, Amerada Hess.*

NEWS Upstream

British-Borneo adds to Gulf of Mexico portfolio

British-Borneo has acquired Conoco's 50 per cent interest in Gulf of Mexico blocks Green Canyon 472, 473 and 517 which contain the King Kong gas field. The field is estimated to hold up to 250 bncuft of recoverable gas reserves. It is likely to be developed with two to four production wells which will be completed subsea and tied back to one of the other discoveries in the area, such as Ensearch's Allegheny project to the north of King Kong, Shell's Gilder discovery to the northwest or British-Borneo's Morpeth field to the northeast.

First gas is expected around the year 2000 with initial production rates of up to 180 million cubic feet per day (mncuft/d).

In addition to the gas development, British-Borneo believes that significant oil potential exists within the King Kong area at deeper stratigraphic levels.

The company has also announced a two for nine rights issue at 1,200 pence per new ordinary share in a bid to raise some £167.3 million.

Largest oil find yet in PNG

The Moran oilfield in Papua New Guinea's central highlands may hold more than 300 million barrels and could be the largest oil discovery to date in the country, according to the reported results from the Moran 2X exploration well.

Reserves have been estimated at up to 600 million barrels, far exceeding those in the adjacent Kutubu oilfield which began production three years ago.

According to Peter Botten, Managing Director, Oil Search Ltd which holds a 7.76 per cent interest in the Chevron-operated project, it could take up to six months for the Moran discovery to be properly defined.

The company also holds interests in the Kutubu and nearby Gobe fields, the latter of which are reported to be on target to begin production by March 1998.

Rush to explore Cooper Basin before deadline

The South Australian state government is planning to create up to 30 new oil and gas exploration licences in the Cooper-Eromanga Basin following the compulsory relinquishment of the PEL 5 and 6 licence areas granted to Santos and Delhi Petroleum. The companies have been directed to relinquish the 73,000km² acreage in the north east of the region by February 1999.

Santos and partners plan to drill about 30 wells this year and a further 30 in 1998 in an attempt to prove up as many potential oil and gas reserves as possible before the licence expiry.

Shell and Cairn join forces in Bangladesh and India

Shell Hydrocarbons Holdings and Cairn Energy have signed definitive legal agreements governing their strategic alliance in Bangladesh and certain areas of India.

The agreements provide for a two-stage transaction, with the first stage initiated by the parties' joint applications in the second Bangladesh bidding round. The second stage will be linked to the outcome of the bidding round.

The current position of the parties following their joint application is outlined below:

- Bids for new blocks in Bangladesh have been submitted on a 50:50 basis, with Cairn as exploration operator and Shell as development and production operator
- Shell has purchased Holland Sea Search Bangladesh (HSSB), previously a wholly owned subsidiary of Cairn, for $65 million in cash.This gives it an 18.75 per cent stake in the Sangu gas field and associated field development in Block 16, a 25 per cent stake in the remainder of Block 16, a 17.5 per cent holding in the Sernutang field in Block 15, and a 25 per cent interest in the remainder of Block 15.
- The two companies have signed an area of mutual interest agreement over Bangladesh, under which either may initially acquire a 25 per cent share of the other party's interest in any upstream, power, gas processing or pipeline project in Bangladesh. This share may be increased to 50 per cent in the event of a full alliance being formed in the future.
- The companies have also signed an area of mutual agreement over the Assam and Tripura regions of India on a 50:50 basis.

NEWS Downs am

France's largest gasline gives direct link to North Sea

French state utility Gaz de France (GdF) reports that construction work has begun on a major pipeline to bring supplies of natural gas from Norway.

'For the first time, France will have a direct pipeline link with gas fields in the North Sea,' comments Project Director Gérard Le Moal.

The project has been hailed as the country's largest-ever gas pipeline. The 1.1-metre diameter 'Hauts-de-France Artery' will run 185km from Loon-Plage, near Dunkirk, to an interconnecting station at Gournay-sur-Aronde, north of Paris, from where it will join GdF's 28,000-km supply network.

It will connect to the subsea NorFra pipeline. Currently under construction, NorFra will cover a distance of 840km linking the North Sea Sleipner gas field to Loon-Plage.

When the new pipelines enter service, Norway will be well placed to become France's principal supplier of natural gas with its market share rising from 28 per cent in 1996 to 33 per cent around 2005, well ahead of the other main suppliers, Russia and Algeria, who will each have an estimated 22 per cent share.

French natural gas consumption has increased by 53 per cent in the past 20 years and is reported to be currently growing at 3 per cent annually.

Data Protection cracks down on Centrica

The UK Data Protection watchdog has issued an enforcement notice against Centrica, the gas supply arm of the recently demerged British Gas.

The notice relates to a leaflet entitled 'Your Data Protection Rights' that Centrica had sent to its 19 million customers offering the opportunity to 'opt-out' of receiving information about other gas-related services – such as home gas appliance insurance and payment protector insurance – currently offered by the gas supplier.

The Data Protection Registrar, Elizabeth France, argues that any opt-out scheme is both unlawful and unfair under the First Data Protection Principle.

She wants Centrica to ask customers to 'opt-in' instead, a move which would require customers to write to the company in order to request information about additional products. Furthermore, she wants this to be done on a once-only basis.

Centrica argues that its actions have been neither unfair nor unlawful and states that the one-off edit would mean it would be unable to offer customers the chance to use any new services in the future. It also objects to the registrar's view that only home and address information should be used. The company states that additional information such as volumes of gas used per household would allow it to target customers more effectively rather than sending information about all its products to all its customers.

Centrica has 28 days in which to appeal against the enforcement notice.

Interconnector deal marks two gas sales firsts for Centrica

Centrica and the fuel purchasers for the Elsta cogeneration project in the Netherlands have signed a contract for gas deliveries through the UK-Continent Interconnector pipeline.

Under the agreement, Centrica will sell, through its subsidiary British Gas Trading, some 1 bncum of gas per annum to Inkoopcombinatie Elsta, which buys electricity and steam from the Elsta project on the Dow Benelux site at Terneuzen, for an eight-year period.

Deliveries, which are due to start in October 1998, will be made to the Interconnector outlet in Zeebrugge. The buyers will be responsible for onward transportation through Belgium and the southwest of the Netherlands to Terneuzen.

It is the first agreement that Centrica has signed to supply direct to a major continental European end-user, rather than a gas trading/transmission company. The deal also represents the first UK gas export sale to a power project.

Omission: The photograph of Lord Simon of Highbury and Prime Minister Tony Blair on page 297 of the July issue should have been accredited to *The Guardian*.

In Brief

***Britain's refining and marketing** sector lost in the region of £110 million last year following a pre-tax profit of £94 million in 1995, according to statistics from the UK Petroleum Industry Association. The industry specialists expect continuing tight margins and overcapacity among refiners to lead to further consolidation in the UK petrol retail sector this year.*

***Van Ommeren has announced plans** to invest an initial sum of $8.5 million for a 50 per cent interest in United Storage & Tank Terminals' Madras-based subsidiary in India. The company has terminals at Kandla, Karwar and Goa and plans to construct a new facility in Mangalore in the near future.*

***Turkmenistan's oil and gas industry** ministry has opened a $200-million tender for the construction of a gas processing plant at the Saman-Depe gas field in the east of the Central Asian republic. Some 10 companies from Russia, Ukraine, Germany and France are taking part. Further details have not been released.*

***The partners in the Amerada Hess-**operated South Arne field in the Danish sector are to supply some 600 to 700 mncum of natural gas per year from the field to the state-owned oil and gas company Dong. The company plans to expand the current gas pipeline system in the Danish sector of the North Sea with a new 13 mncum/d capacity pipeline running from South Arne to the Nybro gas processing centre.*

***Petrozuata, a joint venture between** Maraven and Conoco, has awarded the Contrina consortium – comprising Brown & Root and Parsons of the USA, French companies Technip and Projecta and DIT Harris of Venezuela – a $500-million contract for the construction of extra heavy crude oil processing facilities, related utilities and offsites near Puerto La Cruz in eastern Venezuela. The new facilities will process extra heavy crude oil from the Zuata area of the Orinoco Belt.*

***Sabic Terminal Services Company, a** 75:25 joint venture between Sabic Services and Paktank Terminals, has announced plans to expand its operations by providing services at Yanbu, Saudi Arabia. Costs for the project, which includes the construction of a new berth and storage facilities, are estimated at $90 million.*

In Brief

***Shell Malaysia Trading has signed a** RM250 million floating-rate term loan with Malayan Banking, RHB Bank and Citibank in Kuala Lumpur to part-finance construction of the Petronas-Shell multiproduct pipeline project. The 145-km long pipeline will transport petroleum products from Petronas' Malacca and Shell's Port Dickson refineries to the Kuala Lumpur International Airport at Sepang and the new Klang Valley depot terminal at Putrajaya and Cybercity. The five-year loan also covers investment in modernising Shell's existing service station network in the country and the construction of new outlets.*

***Petronas has announced that it may** borrow at least $1.5 billion in 1998 to fund a number of petrochemical plants on the east coast.*

***Castrol has launched a new semi-**synthetic motor oil to the Malaysian lubricants sector in which it currently holds a 20 per cent market share. The domestic market as a whole is expected to increase by 10 to 12 per cent in 1997, according to Castrol.*

***A consortium led by Spanish gas** distributor Gas Natural has purchased state-owned Companhia Estadual de Gas and Riogas from the state of Rio de Janeiro for $576 million in Brazil's first ever privatization auction.*

***The German government has** announced that it plans to raise DM400 million ($226 million) this year through the sale of some 2.8 million barrels of its strategic petroleum reserves. The remainder of the 54 million barrels of stock will be sold off by the close of 1999, raising some DM1.4 billion in total.*

***Shell, Texaco and Saudi Aramco have** merged their US east coast and Gulf coast downstream operations in the USA. The companies have already merged their western and midwest US refining and marketing activities.*

***Petrol prices in Venezuela rose by an** average of 27 per cent on 17 July as the country prepared to open up its domestic petrol market. Motor fuel has traditionally been heavily subsidized in the country. The price adjustment is reported to be a prerequisite to the extension of an International Monetary Fund standby agreement, due to be signed later this month.*

NEWS Downstream

Statoil sells German service station network

Statoil has announced that it plans to sell its 48-strong service station network in Germany to Shell, stating that the 'limited network is too small to achieve adequate efficiency in a highly competitive market'.

The transition, due to be effective from October 1997, is subject to approval by the Germany anti-trust authorities.

Shell says that the Statoil network, which features larger shops than are currently found at its service stations, 'fits well' with its long-term strategy of placing more emphasis on the convenience store side of the petrol retail business in Germany. Rebranding of the acquired sites is expected to be completed by 1 April 1998.

Statoil's other German operations – LPG, aviation and natural gas – will be unaffected by the sale and will continue to be managed from Berlin.

Statoil's German service stations will soon be rebranded in the Shell colours

Gas supply deal for Philippines power plant

First Gas Holdings, in which BG plc holds a 40 per cent interest, has agreed in principle a gas sales contract with Shell and Occidental in the Philippines. The deal covers the purchase of natural gas for a new power project on Luzon Island that will supply Manila with electricity from 1999.

Gas will be supplied from the offshore Camago-Malampaya field for a 22-year period beginning January 2002. Enron has been contracted to supply the project with condensate from 1999 until 2002 when the natural gas becomes available.

First Gas Holdings states that it plans to develop other gas-related business opportunities in the country, including the supply of gas to additional power plants and the construction of a high pressure gas pipeline system linking the major areas of industrial and commercial growth.

Proposals for UK-wide gas competition

Ofgas, the UK gas industry regulator, has published a consultation document detailing proposals for the final stages in the development of full competition in the UK domestic gas market.

It is proposed that the next stage begin in Scotland and northeast England on 1 November 1997 instead of in 1998 as originally planned.

Competitive gas supplies are already available to over 2 million customers in southwest and southeast England. According to Ofgas statistics, over 370,000 customers in this region have been able to reduce an average gas bill of £325 per year by around 20 per cent by switching supplier from the previous monopoly supplier, British Gas Trading (BGT).

There are 14 companies currently competing with BGT in the domestic market.

Ofgas says that the introduction of competition in Scotland and the north-east of England will provide some 2.5 million gas customers with the opportunity to save around £10 per month on their winter gas bills.

Deregulation will be progressively implemented across the rest of the country early next year.

NEWS Downstream

Drivers hit by green taxes in UK budget

The UK Chancellor of the Exchequer, Gordon Brown, increased the tax on leaded, unleaded and super unleaded petrol and diesel by 4 pence per litre in his first budget on 2 July. Effective as of 6pm the same day, the new duty rates for leaded petrol rose to 45.10p/litre, for unleaded petrol to 40.28p/litre, super unleaded petrol to 43.60p/litre and diesel (both conventional and ultra-low sulfur) to 40.28p/litre.

Duties on gas oil and fuel oil were also increased by 0.08 pence per litre and 0.06 pence per litre respectively – in line with UK inflation.

The duty on road fuel gases, however, was held at the pre-budget rate of 21.13p/kg in a bid to promote the use of such cleaner burning fuels and help motorists offset the costs of vehicle conversion.

HM Customs and Excise estimated that the changes outlined above will yield a net revenue of £230 million in 1998/9 on an indexed base.

The Chancellor also announced that, in future, road fuel duties will increase on average by at least 6 per cent a year in real terms. Previously such changes have averaged 5 per cent. Such a move is expected to reduce carbon emissions by some 2.5 million tonnes annually and will make a significant contribution to meeting the government's target to reduce emissions of carbon dioxide by 20 per cent by 2010.

The Chancellor also implemented his manifesto pledge to reduce the rate of VAT on domestic fuel and power from 8 per cent to 5 per cent, the lowest rate possible under current EC law. The change will take effect from 1 September 1997 and is expected to save the average household £18 per year. The cut in the rate will cost £220 million in 1997/8 and £485 million in the first full year (1998/9), according to HM Customs and Excise.

The North Sea gas levy was also abolished by the Chancellor. The tax, levied at a rate equivalent to 4 pence per therm, was introduced some 18 years ago in order to raise extra North Sea revenue from some of the early North Sea gas fields which were exempt from Petroleum Revenue Tax.

The decision to remove the levy may help lessen the burden of the windfall tax on Centrica, the demerged gas supply and trading arm of British Gas. Payable in two instalments, the windfall tax has been imposed on a number of utilities, including the electricity and water industries, in a bid to generate funds for Labour's 'welfare to work' programme. Some funds will also be invested in the education sector.

The government is also reported to be planning a series of reviews, in particular of environmental taxation. As a result North Sea oil producers may face new taxes in the next Budget expected in spring 1998. It is understood that the tax regime is being reviewed to ensure an 'appropriate' share of profits are taxed while maintaining a high level of oil industry interest in the future development of reserves.

BG takes strategic step in India

BG plc is to acquire a 44.31 per cent stake in Indian gas distributor Gujarat Gas Company Ltd from Mafatlal Industries Ltd and the Hindustan Oil Exploration Company. The £25.7-million deal is being made through BG's wholly owned subsidiary British Gas Asia Pacific Holdings (BG(APH)).

Takeover regulations in India require that BG(APH) also conducts a public tender for up to an additional 20 per cent of the equity shares of Gujarat Gas Company. The total consideration for the public offer is up to £11.6 million, giving a total acquisition cost of up to £37.3 million.

Gujarat Gas is India's largest gas distribution company, supplying customers in Gujarat State, in the west of the country, from its 1,000-km gas pipeline network. Company turnover in 1995/6 was some £19 million with a net income of £4.2 million. Sales growth has averaged 30 per cent over the past three years.

According to BG the deal provides 'a major strategic opportunity' for it to 'link related energy projects in the region and to exploit synergies with existing investments'.

BG has been a 50 per cent partner with the Gas Authority of India in Mahanagar Gas, which has been developing a gas distribution system in Mumbai (Bombay), since 1994. The network currently supplies more than 3,000 domestic customers and 10 per cent of the city's taxi fleet. Industrial customers will also be connected to the system in the near future.

BG is also involved in a 615-MW gas-fired power station plant at Pipavav in Gujarat State. It is also seeking to develop a liquefied natural gas import terminal in the state with an initial capacity of 2.5 million tonnes of LNG per year.

In Brief

***Mobil plans to launch a range of** lubricants in Pakistan. The company aims to capture some 10 per cent of the 250,000 tonnes per year domestic market share within a one-year period.*

***Statoil reports that it is to invest some** $350 to $400 million on the expansion of its Polish service station network over the next three years. The Norwegian company plans to increase the number of outlets in its network from 47 at present to 150 by the year 2000.*

***It has been reported that the price of** natural gas in Azerbaijan will increase by 40 per cent from the fourth quarter of 1997. The increased revenue will be used to repay a loan from the World Bank which was used to rehabilitate the country's national gas sector.*

***Gazprom has signed an agreement** with the government of Bashkortostan, a republic of the Urals, covering the supply of gas and gas products and participation in the development of the republic's industrial infrastructure, including the construction of new pipelines and expansion of the underground gas-storage network. In return, Bashkortostan is to grant tax concessions and other privileges to the Russian oil company.*

***It is reported that Burma has** announced a seven-fold increase in domestic petrol prices and eased the consumption quota in a bid to stabilize petrol prices in the black market.*

***The Senate of the Australian parliament** has voted to lift export controls on bauxite and alumina, minerals sands, coal and liquefied natural gas. Export controls on uranium have been retained because of safeguards required for international sales.*

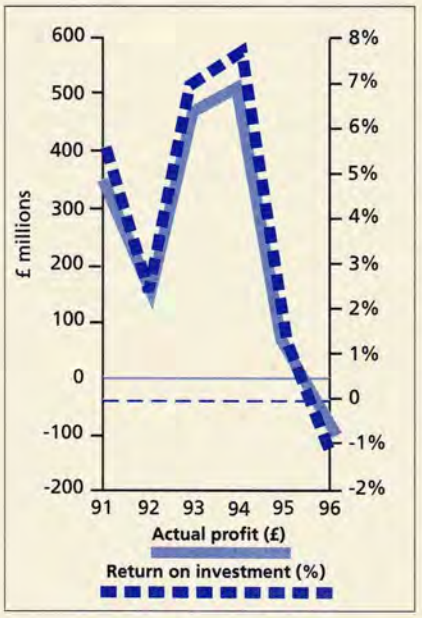
UK downstream – industry review

The trends in the downstream oil industry over the past five years have been of declining financial performance and escalating investment pressures from environmental measures. Cash flow has been minimal, and UKPIA member companies have felt the impact of limited resources. During the 1990s, pre-tax operating profits dropped sharply from the 1991–93 average of £327 million, to a loss in 1996. Projections indicate that 1997 will also be difficult, as concerns remain over the fuels industry for several reasons.

Figures at a glance '96 versus '95

- Net sales and operating revenue increased by 28.5 per cent. This gain was more than offset by an increase in operational costs of 30 per cent.
- Operating profit decreased from £94 million (before tax and interest) to –£110 million.
- Return on capital employed fell from 1.27 per cent to –1.32 per cent.
- Capital employed grew by 11.6 per cent from £7.4 billion to £8.3 billion.
- Annual investment in fixed assets decreased by 25 per cent to £458 million.
- Net cash flow decreased by £6 million to –£45 million.

Refiners continue to face new challenges in products demand mix, notably for petrol and diesel. Demand for road fuels has been essentially flat since the early 1990s, a situation which the industry believes is unlikely to change. There is increasing discussion of measures to restrict road transport on environmental grounds, while various regulatory and commercial pressures have resulted in a fiercely competitive operating climate. The EC in its 1996 report described the refining sector's profitability as 'very poor' but noted that a healthy Community refining sector is critical to the achievement of Europe's environmental policies – the refining sector thus being viewed as a European asset.



Weak financial performance has also been a result of intense competition in the retail markets, overcapacity in refining, the expenditure and changes in the crude slate in accommodating product demand.

Despite falling profit margins, capital employed has been maintained at similar levels to previous years. UKPIA's most recent investment survey shows that necessary future investment projections exceed the rate at which capital is being generated; purely environmental spending is expected to be up by over 50 per cent by the year 2000. Outlay will be on VOC controls and increasing unleaded petrol manufacture and distribution. All are essential to meet EU directives.

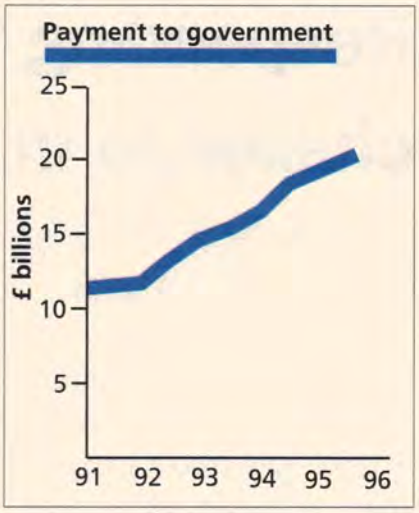
There is strong pressure to reduce emissions from vehicles as a contribution to improving air quality. Advances in fuel and lubricant specifications play a limited role in achieving this. However, improved specifications depend on an economically sound oil industry which is capable of devoting the necessary resources towards this end – knowledge, research and investment.

In 1996 diesel sulfur was reduced from 0.2 per cent to 0.05 per cent at an investment cost to British refiners of £300 million. Current EC proposals to tighten vehicle emission limits by the year 2000 are now being debated. If adopted, the industry will need to invest its share of an estimated 2000 to bring new fuels of changed composition to market.

Demand for petrol has fallen since 1990, and total transportation fuel demand is projected to rise by less than 1 per cent per annum. The oversupply of road fuels from British and northwest European refiners has been growing. British refiners now produce nearly 25 per cent more petrol than this country needs due to the switch from petrol to diesel use. These excess volumes are exported and earn income for the economy. In 1996 this resulted in a contribution by UK refineries of over £1 billion to the UK's balance of payments for the fourth successive year.

In response to market and industry changes some company restructuring is

- Pre-tax operating profits have remained low in recent years and were negative in 1996 despite significant increases in gross sales and operating revenues.
- Net book value of fixed assets decreased slightly in 1996 (–3 per cent) although overall capital employed rose sharply (+11.6 per cent).
- Staff numbers continued to fall and reflect a decrease in direct employment of 19.4 per cent since 1991.
- Major restructuring of the industry involving mergers and plant rationalisation has begun in an attempt to reduce costs and return to profitability.
- Payment to Government continued to rise drastically following the trend of recent years.



underway. This includes mergers in Europe and the UK and will result in some refineries rationalizing in an effort to cut costs.

UKPIA believes that free-market forces are important for any business and excessive, unnecessary legislation would put UK industry competitiveness and additional jobs at risk. However, there are inequalities in treatment between the refiners and importers of finished product, such as duty point location and compulsory storage stipulations, which benefit importers in comparison to UK refineries. Both these disadvantage the refiners and are a serious cause for concern.

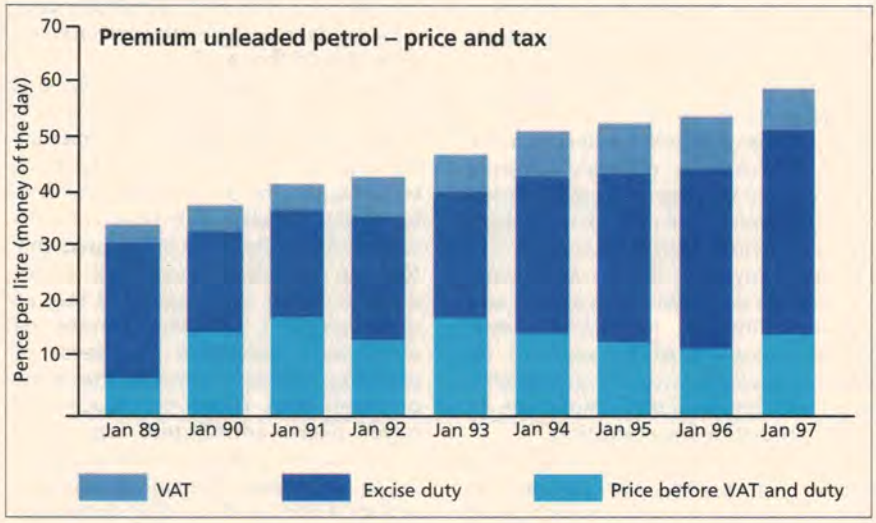
For industry restructuring to succeed, a balanced approach to transport fuels, which weighs real benefits and costs for the vehicle population, fuels supply mix and the economy, is essential. It is also vital that a good climate for industry investment is maintained.

The industry advocates the reform of tax and pricing structure for transport to encourage cleaner vehicles which, in a cost-effective combination with fuels, can reduce pollution overall.

Incentives for energy saving and more efficient fuel use in other sectors as well as transportation, for example in home insulation, provide a better return than less rational increased year on year taxation on transport fuels.

Economic sustainability of transport

The taxman takes over £20 billion a year from the motorist. Excluding duty and tax, British road fuel prices are now the lowest in Europe. In money terms they are slightly less than in 1980, in real terms over 50 per cent lower. The consumer has been largely unaware of this situation as, during the same period, fuels duty and VAT have risen more than threefold.



In 1993 the Government introduced a policy to increase prices at the pumps by 5 per cent plus inflation every year. The total tax take on a litre of fuel is currently nearly 80 per cent of the price or around 50 pence per litre. To date, the policy has had no impact on fuel sales and has proved to be rather ineffective as an instrument for controlling fuel consumption.

In 1997 the UK petroleum industry will collect yet a further £1.5 billion increase over 1996 from UK motorists on behalf of the Treasury. Taxation in this way is a very blunt instrument which serves to fill the coffers of the Exchequer but appears to have little direct benefit to consumers in terms of improved transportation systems.

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Responding to the media challenge in a crisis

By Philip Algar

Decades ago, some companies involved in an emergency or a crisis opted to ignore the media entirely. Then, as it gradually became clear that such behaviour could create problems, effectively inviting journalists to investigate deeply, groups started to communicate as soon as the crisis was resolved.

Now, as corporate and even senior executive accountability assumes ever greater economic and legal importance, most companies recognize that they have no choice: they must cope with the media challenge whilst simultaneously dealing with the crisis. Equally, press, radio and television journalists, faced with acute competition in their own sector, are pushing more persistently for instant information on what has happened. Furthermore, many journalists, unlike senior executives, have direct experience of emergencies, so an unprepared company will soon encounter difficulties if it fails to respond positively to the media.

Companies enmeshed in a crisis may concede that dealing with the media is a necessary chore but often argue that there is no return, even for a positive approach. That is wrong. Whilst an effective response will not convert polluted water into wine, the damage to corporate reputation will be less than might result from total silence: the story will not vanish if the company ignores the media. On the contrary, journalists will seek others' views, but nobody will (or can) defend the organization as well as the company itself. Silence, rightly or wrongly, will be construed very negatively. It will be assumed that the company was ill-prepared to deal with an accident and that the same lack of planning might have contributed to the emergency.

Another benefit is that by having a constructive relationship with the media, the company improves its chances of communicating speedily with all the sectors that it needs to address. In such circumstances, commercial organizations have many messages to disseminate: above all, they need to express regret that the accident has occurred and to explain what they are doing to minimize the repercussions on the people involved and on the environment. The media, whilst deciding for themselves how to cover the incident, will nevertheless be keen to include information from the company. Consequently, the prospects of conveying company messages to key audiences, often around the world, very rapidly, will be advanced.

Some companies, despite all the accidents seen in the UK in recent years, still do not fully understand the need to create a different internal organization to cope with emergencies. Similarly, many have not acknowledged that an environmental emergency can last for many days, during which time the outside world will take a keen and sustained interest in developments. Whilst groups must be seen to be dealing properly with the emergency, it is also commercially important to maintain day-to-day operations.

The key to successful crisis management is planning. Groups which believe that swift organization and improvisation on the day of an accident will suffice are guilty of a massive self-deception that could result in their total demise.

Planning

The first step for a company is to decide on what is the worst kind of crisis that could occur. Planning must then assume that the worst will happen, probably at the least convenient time, possibly in the night, or in the summer when many staff members are on holiday. Mobile phones may be intrusive but they do enable key personnel to be called back to their place of work when they are homeward bound. In the past, this was often when companies were most vulnerable.

An effective and comprehensive crisis management manual must be written, detailing precisely how the company would be organized to deal with a crisis, which individuals would be involved and what would be their duties. Mundane but crucial matters, such as the call-out procedure after an accident and how to gain access to an office or terminal building, in the middle of the night, should be addressed. Many exercises have floundered because those personnel who arrived at the right place at the right time did not know how to gain access to the appropriate dedicated rooms or how to operate key equipment, such as computers or even fax machines. Another element, often overlooked, is how to deal with early telephone calls: who will be charged with that task and what should they say?

These and many other questions should be addressed and the answers incorporated in the emergency manual. Some groups err in including too much information. This deters personnel from becoming familiar with the contents and results in the tome being used only to keep the office door open in hot weather. It has to be accepted that all questions and problems cannot be anticipated: whatever the level of planning, each emergency creates some problems that could not reasonably have been anticipated, so some improvisation is always necessary.

The emergency manual should also include a brief draft holding statement,

or press release, that can be completed quickly on the day and subsequently used for media enquirers early in the evolution of the emergency.

Teams

The next stage is to create the organization that could respond effectively to both the emergency and the media, whilst ensuring that some key personnel remain active to deal with day-to-day business.

At least two specialist groups must be selected in advance. Most companies choose a crisis management team, which consists of senior managers and is charged with the overall control of the reaction to the incident. Clearly, some team members will be required for all types of accident, because of their particular skills or experience. Others will be called in on an ad hoc basis as the nature of the incident will determine who is involved. More, rather than less people should be convened when an incident occurs. It is easier to allow individuals to return to their posts than to call them in some time after an accident develops.

One permanent member of the crisis management team should be a senior executive from the public affairs group. That person needs to be readily available to advise senior management on key external aspects of the accident. These might include, for example, serious accusations being made by or through the media, interest from government ministers and an alleged lack of communication with relatives of those on site. Equally, he or she serves as a conduit through which information can be channelled to the outside world, via the media response team.

The media response team, the majority of whose members may not work in public affairs, as few companies have sufficient specialists on the staff, should be supported by a co-ordinator with knowledge of both the company and the media. This team will be responsible for answering the media's telephoned questions and they will also take details of requested interviews.

All responders must give the same, accurate and authorized information

The tanker *Braer* on the Shetland rocks

Photo: Graham Burns Courtesy: Environmental Images

so, in this respect, detailed experience of a refinery or rig, for example, would be a handicap. Manifestly, responders must not reveal their usual occupations because those with relevant experience would be bombarded with questions whilst their colleagues remained idle. Worse still, they would find it difficult to avoid answering some questions that the company might prefer not to address at that stage.

Consequently, telephone responders must rely solely on three sources of information. A 'fact' book giving basic information on the company and its activities is useful early on in an incident as it allows the media to include some background material when information on the accident is scarce. The second source is the press release and more up-to-date but authorized information should be written up on 'white boards' around the response room.

Some teams have difficulty in deciding what can be released to journalists on the telephone. That should never be a problem as all information from these three sources, by definition, can be released.

Companies must also decide in advance on who, from the ranks of senior management, would represent the organization in radio and television interviews and who would front a press conference. Undertaking these and all the other crisis-related responsibilities successfully needs training from a specialist external organization that can bring experience gained from hundreds of such sessions given to many different organizations in different countries and industrial sectors.

It is of prime importance to test the structure and personnel. The unique pressures of an accident can be simulated realistically in an exercise, providing the scenario is chosen carefully. The exercise sessions should allow for pressure on the telephone response team from professional journalists, television interviews and a press conference. It is useful to have experienced observers present to help determine where, for example, liaison between the two teams was poor or where a serious error was made. Their input, as well as that from the teams involved and the evidence of the video, as the exercise should be recorded, will be valuable only if the company takes note and makes changes to ensure a more professional approach on the next occasion.

All this may sound bizarre and even masochistic but most exercises, although very demanding, can be fun. That said, is it not better to detect defects in systems and in people in training and exercises, rather than in the unwanted glare of worldwide publicity, when a mistake could have devastating effects?

DeepStar – frontier technology at reduced cost

By Judith Gurney

In 1992, Texaco persuaded a group of 17 oil companies, along with 45 contractors, vendors and manufacturers, to form an unusual alliance called DeepStar. Its purpose was to pursue ways to solve technical problems, and thereby reduce costs, in the development of deepwater fields in the Gulf of Mexico.

There have been a number of cost-reducing initiatives in recent years, notably the UK's CRINE and Norway's NORSOK, designed to realize offshore cost reductions. These have encouraged the growth of more co-operative relationships between operators, contractors and sometimes vendors. DeepStar differs from these in its concentration on technology. Its formation largely results from oil companies' decisions to reduce their staffs in order to lower operating costs. Downsizing has resulted in significant reductions in company R&D operations; many companies now find that they lack scientists and engineers capable of solving technical problems and administering technology programmes.

Committee structure

An impressive list of 21 major oil companies have been involved with DeepStar since it began work; British Gas and Occidental are the newest members with DeepTech, Oryx and Total no longer taking part in current projects. The US Minerals Management Service, which oversees the leasing of offshore acreage and the collection of royalties for the federal government, is not a paying member but its officials meet regularly with the DeepStar Regulatory Issues Committee.

Each DeepStar member pays an annual fee which varies according to the magnitude of the programme for that year, and cumulative fees to date have amounted to approximately $600,000 each. Members, and sometimes outside organizations, propose projects to the seven technical committees staffed by company nominees: Regulatory Issues, Flow Assurance, Subsea Equipment, Vessel, Mooring & Risers, Drilling, and Reservoir. Once the appropriate technical committee accepts a proposal, the choice of who will administer the project is decided either by committee consensus or by competitive bidding. Some project work is contracted to members; participant work assignments amount to about 17 per cent of the DeepStar 1997 budget. The remainder of the work is outsourced to contractors and occasionally to research organizations. All members have access to any technology developed in projects. Most of the projects – and 90 per cent of the total budget – are directed at creating engineering solutions on the grounds that the most critical issues, and the largest costs, in commercializing new technologies lie in application development and not invention. The consortium occasionally sponsors basic research, but only that with a short time-frame.

Phased programming

DeepStar planning has been divided into phases, with each successive phase devoting more attention to testing of production system prototypes. In general, members have been mainly concerned with subsea equipment and the problems using long subsea tiebacks to produce deepwater fields. The major focus in Phase I was identification of the economic potential of such tiebacks and their technical difficulties. The focus of Phase II, and later Phase IIA, was broadened to consider solutions to problems currently being encountered in developing deepwater fields as well as subsea production issues. Phase II included field demonstrations and the testing of metal tube umbilicals and pipeline leak repair equipment. Phase IIA included testing hydraulic electrical couplers, wellhead tree gaskets, communications equipment in subsea umbilicals, and threaded pipeline connectors.

The Phase III programme, which began in 1996 and runs to the end of 1997, has a budget of approximately $5.2 million. Its major focus, involving 35 per cent of the budget, is on the resolution of flow assurance problems. It is also concerned with a number of other issues, including well service vessels, innovative mooring and riser components, subsea well intervention, and problems caused when shallow water aquifers are encountered while drilling in deep waters. Phase IV, which is scheduled to begin in February 1998, has received a large number of proposals for new projects on these areas of continued interest. It is also expected to consider issues involved in the deployment of floating production systems. Its estimated cost for members is in the order of $150,000 to $200,000.

Major projects

Flow assurance. Hydrate and paraffin formation present serious obstacles to the widespread use of subsea production technology in many Gulf of Mexico deepwater sites. Hydrates – ice-like solids composed of gas and water and precipitated at low temperatures – form in hydrocarbon flow lines, deposit on flowline inner walls and agglomerate in the flow stream. With time, they can block a flowline. Operational problems with hydrates are most severe in high-pressure

flowlines in cold environments where the seawater temperature is typically between 1°C and 4°C and (34°F and 40°F).

Hydrate blockages in onshore flowlines often may be cleared by reducing the pressure on both sides of the blockage but this procedure is difficult, if not impossible, in a deepwater flowline. It has been suggested that one-sided depressurization might also be effective in clearing hydrate blockages. However, there is currently insufficient understanding of one-sided depressurization, as a function of flowline and hydrate blockage conditions, to predict the conditions under which this procedure could succeed.

In February 1997, DeepStar sponsored a field test to evaluate the effectiveness of depressurizing one side of a hydrate plug for removing hydrate blockages. The test was done on a 3-mile, 4-inch onshore gas flowline in Wyoming, owned by Kerr-McGee and Devon Energy. DeepStar members Amoco, Arco, BP, Chevron, Kerr-McGee, Shell, and Texaco provided equipment for the test, as well as analytical and computer services.

In the course of the test, naturally occurring hydrate plugs were allowed to form by stopping methanol injection. One-sided depressurization was then administered. It was found that the reduction of pressure on one side of a plug resulted in a substantial pressure drop across the plug as well as partial disassociation of the low-pressure end of the plug that was outside the hydrate region. Five data stations along the line monitored plug formation and decomposition. They noted pressure drop across plugs as a function of time to determine plug permeability while a plug was stationary. The pressure drop across plugs in connection with plug length were used to determine plug yield strength at breakaway. The final plug size was assessed when plugs came away from the pipe wall and were propelled down the pipeline by pressure. Three oil company simulation groups analyzed and predicted plug behaviour using state-of-the-art simulation tools and their results were analyzed to determine the accuracy of prediction methods.

Another aspect of flow assurance with which DeepStar is concerned is paraffin (wax) formation. It has tested the feasibility of using extended-reach coiled tubing to remove paraffin blocks from pipelines up to a distance of 5 miles – the reach of such tubing historically is limited to a range of 1 to 11/2 miles. In addition, the consortium awarded a contract in 1996 to a research organization to develop molecular models of paraffin and paraffin inhibitors which could be used to develop more effective chemical treatments for paraffinic crudes. Another project involves investigating the feasibility of heating deepwater production lines.

Well service vessels. Rigs suitable for work in deep waters are currently in short supply as they are being used both for exploration and for development and maintenance. Companies which are successful in finding deepwater fields are sometimes forced to curtail either their exploratory programme or their development plans when they cannot secure enough rigs. As a solution to this problem, DeepStar has proposed the construction of vessels designed solely for well completion and workover services, replacing drilling rigs for this work. Such a vessel would cost significantly less to build than a full drilling rig, and could provide all the completion and long-term field maintenance services required in a producing field. DeepStar is investigating the design of a prototype well service vessel.

Moorings and risers. Both simple steel risers and flexible pipe risers have potential fatigue and stress problems in deepwater production applications. DeepStar has initiated experiments with hybrid riser systems with a range of production vessels and environments. It is also testing the proposition that Taut Leg Mooring (TLM) systems can provide reduced mooring system costs if synthetic materials are used to replace the steel used in conventional mooring ropes. In 1996, Aker Marine Contractors, under contract to DeepStar, installed a single-leg polyester TLM near Shell Offshore's deepwater Auger tension leg platform. This is being used as a standby mooring to allow supply vessels serving Auger to be secured during delays in offloading. It will remain on station until September 1998 under careful monitoring, and will then be removed and its three polyester rope section types tested.

Pipeline specifications. DeepStar has commissioned a study to investigate if the current American Petroleum Institute (API) and American Society of Mechanical Engineers (ASME) design codes for wall thickness of pipelines are too restrictive for high-pressure subsea flowlines. Several members argue that these codes are overly conservative in view of advances in pipe manufacturing, design engineering and in steel pipe composition, and that they lead to unnecessary high costs for long-distance subsea tiebacks. The study will evaluate the feasibility of using Burst Limit State criteria for the design of subsea tiebacks.

Downsizing error?

There are definite gains arising from the interaction and R&D information exchange which has occurred in DeepStar. The alliance provides a wide technological skill base for tackling problems. It has resulted in better contractor and vendor relationships and has undoubtedly advanced industry acceptance of new materials and processes. But the system also has real disadvantages, including a cumbersome decision-making process in which powerful company's projects are apt to prevail. A much more significant drawback is the members' loss of proprietary rights to technology developments discovered by projects. For this reason, the achievements of DeepStar may lead some companies to reassess the wisdom of having downsized their own R&D departments.

DeepStar Participants

Texaco	Kerr-McGee
Amoco	Marathon
Arco	MMS
Agip	Mobil
BHP	Oryx*
BP	Occidental
British Gas	Petrobras
Chevron	Phillips
Conoco	Shell
DeepTech*	Total*
Elf Aquitaine	
Exxon	

* Not involved in Phase III.

Stopping exploration and production of oil and gas in the Atlantic Frontier – is this the real Greenpeace agenda?

By Cliff Johnston

Greenpeace's use of present scientific evidence for global warming and the possible effects of burning fossil fuels, etc is dangerously emotional, an irresponsible extrapolation to a 'doomsday' scenario, recently supported by a colourful 'Armageddon' video designed to grossly mislead the public. However, the main threat is the risk of a similar misleading of policy makers and industry, claims Professor Cliff Johnston of Environment & Resource Technology Ltd in response to the extracts from Greenpeace speeches printed in the July issue of Petroleum Review.

In a recent letter to the UK Prime Minister, Greenpeace claimed that the 'carbon logic of our campaign is not disputed by climate scientists'. This is simply untrue, climate scientists with pedigree in this subject have never assessed any 'logic' from Greenpeace. Greenpeace has taken some key findings of international scientists and used these in a series of extrapolations to justify its target 'to put the lid on the use of fossil fuels'. The key scientific statement, in a 1995 report by the Intergovernmental Panel on Climate Change (IPCC), was: 'nevertheless, the balance of evidence suggests that there is a discernible human influence on climate.' It took several days of debate to agree on the wording of this sentence, with hours alone spent on the choice of the word 'discernible'.

Several key scientists, who themselves strongly support the link between burning fossil fuels and global warming, emphasize that there are still critical uncertainties. Schneider uses as a subtitle to a recent book 'the planetary gamble we can't afford to lose', yet also states 'it's possible that everything in the last 30 years of temperature records is no more than noise'. Earlier, Revelle emphasized... 'the scientific base for greenhouse warming is too uncertain to justify drastic action at this time.'

Our way forward must be to take greenhouse gases and global warming seriously but not be panicked by misplaced hype. Despite uncertainties on CO_2 and fossil fuels, the discipline of reducing CO_2 emissions is sensible but needs cautious assessment of the options and a balanced view of the likely consequences. Major attention must be given to minimizing CO_2 emissions from the use of fossil fuels, for example through efficiency improvement and CO_2 sequestering. Obviously, the encouragement of renewable energy sources must play a key role, as may a reconsideration of nuclear power if we have to meet increasing global energy demands without increasing the use of fossil fuels.

Whichever future global energy policy develops, fossil fuels will continue to play a key role, with oil and gas representing an essential fuel over the next 20 to 25 years.

Although virtually ignored in Greenpeace statements, any changes in energy policies must be integrated with consideration given to social, economic and political issues. If industrialized nations attempt to impose extreme energy policies we could create new world crises, linked to 'environmental security' strategies (**Figure 1**). Is global warming to replace the pressures of the cold war?

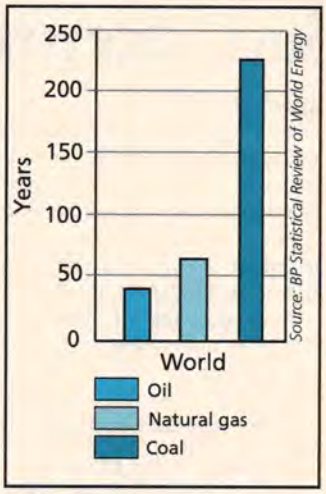
It is interesting to note that Greenpeace has chosen to 'fight' this global climate battle on the UK Atlantic Margin. The UK oil and gas industry has contributed £140 billion to the exchequer (currently £4 billion/year) and has invested over £138 billion, employs 28,000 onshore and a further 300,000 onshore. It has enabled us to develop an economy self sufficient in oil and gas. However, we are but a 'drop in the ocean' in terms of global reserves and production. Current UK oil production represents 4% of world production and a mere 0.4% of world reserves. Atlantic Margin reserves currently represent a fraction of 1% of world production but will help slow the UK's return to oil dependency and the need to import from across the globe. Any global policy should focus on on the massive coal deposits such as those in Russia and China, which currently produce considerably higher CO_2 emissions rather than just oil and gas (**Figure 2** and **Table 1**).

It might be suggested, therefore, that Greenpeace, with its claimed international dimension, move its efforts from the minuscule reserves of the Atlantic Margins, or might its 'eco-warriors' find problems operating in the Middle East, China or the former Soviet Union?

Marine environmental issues associated with present Atlantic Margin exploration focus primarily on whales, deep-water corals (and associated diversity), and deepwater fish. Linked

Figure 1: Impact scenarios – 'environmental security'

Figure 2: Fossil fuel R/P ratios at the end of 1996



to consents for development of present fields and new exploratory activity, the industry has been required to undertake detailed marine studies, both through collaborative programmes (eg the Atlantic Frontier Environmental Network) and single operator studies.

Although internationally there has been considerable debate about the impact of seismic operations on marine mammals, notably whales, there is no evidence of significant impact. There is occasional reference to whales re-routing clear of operations. Of particular interest are data from studies on the Atlantic Margin suggesting healthy numbers of several whale species moving through the area despite over 20 years of exploratory seismic and drilling activity (over 150 wells). Recent acoustic studies confirm that whale communications can be easily detected over oil exploratory noises (as presented by Mark Tasker of the JNCC at the June Greenpeace conference). These studies, still in their early phase will hopefully provide more definitive evidence of oil industry activity-whale interactions.

Another species believed to be at risk along the Atlantic Margin is the cold-water coral, Lophelia, which is known to develop very large 'reef-like' structures off northern Norway and the Faroes. This species grows relatively slowly and provides shelter for several hundred species of benthic animal. It is found in areas of strong currents; these carry the particulate food source for the coral and its associated fauna, but are also strong enough to prevent sediment settlement and 'clogging'. It has also been suggested that the coral may obtain food from local hydrocarbon seepage. The industry has recognized the importance of these coral outcrops, but to date no large coral structures have been located along the UK margin (as erroneously claimed in the media at the time of the Greenpeace conference in June). Further detailed side-scan surveys/sampling are being undertaken and will be extended into new exploratory areas. To date the main threat to this coral is from deepwater trawling, with direct side-scan sonar evidence of trawl impacts on outcrops.

Another concern is the possible risk to the slow growing deepwater fish along the Atlantic Margin, fish with such colourful names as 'orange roughy', 'black scabbard' and 'greater forkbeard'. However, a recent publication by Greenpeace confirms that the main threat appears to be from fisheries, particularly French deepwater trawling activities. It can be argued that oil activities, by their physical presence, will create 'havens' for these fish; it is even possible that a dumped Brent Spar would have provided a such a haven.

There is much talk about the 'precautionary principle'. Should the main application of such a principle be the acceptance of Greenpeace claims and their full agenda? Is industry and government to continue to allow physical interference with the legal activities of others, activities which are not only contributing to the financial wellbeing of our country but the employment of over 300,000 workers?

At the same Greenpeace conference, Peter Melchett admitted that its 'campaign' to stop oil exploration and production in the Atlantic Frontier 'was within its budget... which could not extend to larger global targets' – or is it really a rerun of 'Brent Spar' to gain more recruits and funds?

References

Schneider, S H (1996). *Laboratory Earth: the planetary gamble we can't afford to lose.* Weidenfeld and Nicolson.

Greenpeace (1997). *Is Deepwater a Dead-End?*

Country (region)	Primary energy	Coal	Oil	Gas	Nuclear	Other (Hydro)
USA	2,069	494	807	560	183	26
China	833	640	158	16	3	16
Russian Federation	624	119	146	318	26	15
Japan	490	86	267	55	74	8
Germany	336	93	135	67	40	2
France	235	13	89	30	97	7
India	227	128	73	17	2	8
Canada	225	25	80	67	25	29
UK	219	48	82	66	23	0.5
	8,136	**2,211**	**3,227**	**1,884**	**596**	**219**

Table 1: Energy consumption (1995) (million tonnes oil equivalent)

CRINE – standard contracts off the shelf

The first suite of standard contracts for the UK offshore industry has now been produced by the CRINE Network's Standard Contracts Committee. The initial group of contracts covers construction, design, offshore services, onshore services and well services. These will shortly be followed by standard contracts for the remaining areas – marine construction, mobile drilling rigs, purchase order terms and conditions (short form) and the supply of major items of plant and equipment.

The development of the standard contracts is a major breakthrough for the offshore industry in an area which the original CRINE (Cost Reduction Initiative for the New Era) had identified as one of inefficiency. All previous efforts, and there have been many, failed because of a lack of trust between operators and contractors.

The result is that new contracts will no longer have to be written for every job. Resources will be freed up within companies to concentrate on workscope issues and in other areas where true value is added.

At the contracts launch in June 1997, Heinz Rothermund, Managing Director, Shell Expro and UKOOA President, committed his company to using the contracts. 'I urge all operators to use them,' he added. Recalling his own days as a project manager, he said: 'There will now be no reason to check contracts line by line and change a comma here or there. These standard contracts will reduce the bureaucracy. They will eliminate all that time spent on previewing and qualifying contractors. There will be a less adversarial approach to contractors. They will provide a greater understanding of the terms and conditions under which we do business. The whole environment of contracting will be very much improved.'

Eric Johnston, Assistant General Manager of Amerada Hess in Aberdeen, chairs the Standard Contracts Committee. 'The preparation of standard contracts has been one of the major objectives of CRINE,' he said. 'It was always seen as one of the most difficult projects to tackle, although one of the most important. The aim has been to reduce significantly the inefficiencies associated with the repeated drafting and reviewing of contracts, and to facilitate a greater sense of partnership between contractors and operators. We believe that by standardizing the main terms and conditions it will not be necessary in future for all sides to carry out in-depth reviews of all tenders. The savings in time and resources will be vast.'

Crine Standard Contracts Committee

Chairman:	Eric Johnston, Amerada Hess
Draftsman:	John Chandler, contracts consultant
Facilitator:	Lynnette Marne, CRINE Network

Daniel Bell	Santa Fe/IADC
Nick Brown	Wood Group
Peter Foreman	Kvaerner
David Goulding	European Gas Turbines
Mike Hobson	Arco
Peter Holland	Shell Expro
Ian Kelly	Santa Fe/IADC*
Seamus Kilgallon	Shell Expro
Jim McGregor	BP Exploration
Steve Nutall	Scottish Enterprise
Johan Rasmussen	Stolt Comex Seaway
Judith Tocher	Baker Hughes

* Ian Kelly replaced David Richardson of Sonat/IADC

Each standard contract is issued with a separate booklet of Guidance Notes, suggesting how the contract might be adapted for individual company use. It is, however, acknowledged that some companies will on some occasions require special conditions which will be added as appendices to the standard contracts.

Welcoming the development of the standard contracts – published by the Institute of Petroleum – Ian Ward, IP Director General, told *Petroleum Review*: 'The IP is pleased to be involved in the important work of the CRINE Network. The administration of the Functional Specifications and Common Working Practices is in keeping with our objective of forging stronger links with CRINE. The publication of the standard contracts is an important step forward for the whole industry.'

Francis Gugen of Amerada Hess and Chairman of the CRINE Network urged the industry to take the standard contracts onboard as soon as possible. 'Who said the industry can't do the impossible?' he said. 'We have failed many times before but I remember in 1995 saying "We've got to get contract simplification." A lot of people have worked very hard to achieve this success. It's your choice if you want to make use of them. I urge you to grab this opportunity.'

Speaking on behalf of the contractors, Nick Brown of John Wood Group Engineering stated that both his company and the Offshore Contractors' Association (OCA) fully support the initiative. 'It is something we have wanted for a long time,' he added. He also pointed out that the contracts are exportable to some areas of the world.

Neil Potter

The standard contracts have been published by the Institute of Petroleum on behalf of the CRINE Network and are available from the IP library at a cost of £24 each inclusive of postage in the UK and Europe (add £5.00 for postage outside Europe). A complete set of all nine contracts costs £195.00. There are substantial discounts for bulk orders. For further information contact the IP Library on +44 (0)171 467 7113.

Tough time for European bulk storage independents

By Kim Jackson

Independent storage operators in Europe have faced tough market conditions in recent years. Not only have they been forced to invest heavily in upgrading their terminal operations in order to meet ever-tightening European environmental legislation, they have had to do so against a background of generally unfavourable trading conditions which has kept demand for petroleum product storage tight and margins under pressure.

Futures forecasting

Traders require the futures market to be in a contango – where forward prices are higher than current prices – before it becomes attractive to hold product speculatively. However, over the past two to three years, the market has been in backwardation – with forward prices lower than current prices. While there has been talk of a small contango in the market with much storage filling up in the past six months, many of the operators do not believe that it heralds a radical change of fortunes.

Margins have been further tightened in recent months as oil companies have cut stock levels in a bid to reduce operating costs. In doing this they are relying on Europe's large refining overcapacity, together with the increased flexibility of refining operations, to meet any unexpected surge in demand for product.

In addition, it is expected that future demand for independent storage will be restricted by the growth of refining and marketing alliances between oil companies, such as that agreed by BP and Mobil last year (see *Petroleum Review*, March 1997). Such alliances allow the companies to utilize more intensely all their resources, including storage. However, this trend may be less important than commentators initially believed. Earlier this year, at a very late stage in the discussions, Gulf, Elf and Murco decided against an alliance in the UK, claiming that it would not bring about the financial benefits originally forecast (see *Petroleum Review*, April 1997).

The standardization of fuel grades in European Union member states is reported to have reduced the demand for storage capacity over the last year. For example, since 1 October 1996 only one grade of diesel fuel – containing 0.05 per cent sulfur – has required storage (see *Petroleum Review*, December 1996), whereas three grades required storage and distribution a few years earlier. The growth in demand for diesel is also reducing overall motorfuel storage requirements as diesel engines offer better fuel consumption than gasoline engines. Compounding this effect is the fact that there is only one grade of diesel requiring storage and distribution compared to two for gasoline.

One of Oiltanking's terminals

A changing business

Independent storage operators have increasingly found that they have had to change their business philosophy in order to survive such market conditions. Some of the smaller operators have looked to forming alliances with the larger players such as Van Ommeren and GATX, while the larger operators have moved away from trade-linked operations and focused on logistically driven operations and the provision of a worldwide terminalling network offering a complete package of storage and distribution options.

Explaining the reasoning behind such a move, Van Ommeren's Commercial Director, Jet van Ruitenburg says: 'We are no longer so sensitive to fluctuations in the marketplace as we now have a number of long-term agreements and other business in place, including that from major oil companies, petrochemical companies and government agencies holding strategic reserves.' The decision to move in this direction appears to have payed off as the company is reported to have been busier than most in the European bulk storage sector over the past few years.

However, as van Ruitenburg points out, 'playing safe', by avoiding being dependent on trading companies, does mean that the company will not reap the rewards from future contangos. It is a drawback

that Van Ommeren is not unduly concerned by, as the company is currently evaluating other sources of additional revenue.

As part of a continuing programme of expansion in its global terminalling network, Van Ommeren has been on the acquisition trail this past year. Purchases include the UK terminals at Ipswich, Barry and Purfleet, previously owned by Powell Duffryn, together with that company's terminals in South Africa and Australia.

The company also acquired, through its subsidiary Van Ommeren Tank Terminals, a 128,000 cubic metres (cum) oil distribution terminal from the BP/Texaco joint venture Nerefco. Located adjacent to Van Ommeren's Botlek bulk liquids terminal, the facility will be used primarily for the storage of bunker fuels under an existing long-term contract.

According to van Ruitenburg, such acquisitions not only broaden the range of services that it can offer, but also allow operations to be integrated and cost savings to be made. 'There is a need now, and in the future, for experts in the bulk storage business. The market is too labour intensive and expensive for the smaller players to survive. By taking such operations over, it allows us to offer expertise worldwide.'

Royal Pakhoed, too, has made the move towards logistically driven operations. The company has divided its operations into two core areas – logistics (covering storage and shipping) and chemicals distribution – following a recent business review. As part of this reorganization, the company sold its Furness harbour operation and acquired two new chemical businesses – Lambert Rivière of France and US company Univar, in which Pakhoed already held a 28 per cent interest.

Tough time in Germany

'The German bulk storage sector has had a particularly tough time of it over the past few years following the government's decision to implement the EU's vapour recovery requirements by December 1996, ahead of the "official" 2000 deadline', says Aat van Spronsen of Hamburg-based Oiltanking. 'The operators found it difficult to recoup the heavy investment in vapour recovery equipment as they were unable to significantly increase storage rates *and* stay competitive in the market. As a result, we initially lost some business to terminals in Belgium and France where the rates were lower as the operators had yet to invest in upgrading their operations. This is not so much the case now as the 2000 deadline approaches.'

Fluctuating prices

According to operators that spoke to *Petroleum Review*, storage rates have fluctuated tremendously over the past year, making it virtually impossible to identify a specific pricing trend. Furthermore, as one operator pointed out, much storage is now done on a long-term contract basis in which prices are fixed and may not truly reflect the prevailing spot market conditions.

However, using Rotterdam rates for a low-flashpoint product such as gasoline – which are considered fairly typical – it appears that operators have received between Fls1 to Fls4 ($2.02 to $8.08) per cubic metre (cum) over the past two years. Indicative of a slight improvement of the current state of the European bulk storage sector, rates have moved towards the higher end of this range in recent months, one operator stating that it was getting Fls3.5 ($7.07)/cum in July.

The high levels of funding required to upgrade facilities has also 'shaken out' the domestic storage market to leave only those companies with a solid base from which to operate, according to van Spronsen. He believes that, as a result, there will be little takeover activity in the German market in the near future.

With the worst of the financial burden behind them, the German operators are now more positive about future prospects. Oiltanking, for example, is currently undertaking a major development at its Ghent, Belgium site, expanding storage capacity in anticipation of an upturn in business. It has also begun the construction of a pipeline connection to Amsterdam (Schiphol) Airport following the award of a long-term contract for handling a major part of the airport's jet fuel consumption. It has a similar contract with Copenhagen Airport, but on a smaller scale.

UK pressures

In the UK, the ongoing petrol price pump war (see *Petroleum Review*, March 1997), together with the rationalization of BP and Mobil's refining and marketing operations, has had a detrimental impact on the domestic storage sector. 'Uncertainty about the future strategy of the oil companies means that people are reluctant to commit to long-term agreements on storage capacity and short-term contracts are generally the norm,' says Peter Hughes, Managing Director, GATX Terminals.

Generally, demand for petroleum product storage in the UK over the past year has been relatively low. However, due to a unique quirk in UK law, November last year saw the usual slight upturn in business ahead of the government's Budget statement. This is because duty has to be paid when product leaves the refinery instead of when it leaves storage for distribution, as is the case in most other countries. Duty-paid cost of product is several times that of ex-duty cost, providing a powerful incentive for the oil companies to keep their stocks outside of the refinery for as short a period as possible.

The current duty arrangement has played an important role in encouraging the early uptake of vapour emission control equipment in the UK, providing a financial incentive to reduce the volume of cargo 'lost' by vapours escaping during transit, loading/unloading and storage. According to one industry spokesperson, the current duty arrangements quadruple the cost of such losses for the oil company.

Although a number of industry associations representing the oil companies and storage operators have

been calling for the UK to be brought in line with the rest of Europe, little action has been taken by the authorities to date. This may well be because if changes were made the government would receive no revenues until product actually left the storage terminal. It has yet to find a way around this situation to ensure a continuous stream of revenue.

On a positive note, Peter Rendall, Marketing Director, Simon Storage, believes that the increasing quantities of oil and natural gas liquids that will be landed from newly developed fields in the North Sea will provide a boost to the UK storage sector and the UK economy as a whole.

He also reports that business has picked up at its Seal Sands and Immingham terminals in Middlesbrough and South Humberside respectively as there is an increasing demand for the storage and distribution of petroleum products from the local petrochemical industry. The company has fitted new bottom loading gantries, meeting both current and future vapour recovery legislation, at both its terminals. The new facilities have significantly reduced tanker turnaround times.

Business has picked up at Simon Storage's Immingham terminal in recent months

Meanwhile, Simon Management, a subsidiary of Simon Storage, has expanded its pipeline operation and maintenance contract with UK gas distributor Kinetica to cover new links supplying the combined heat and power (CHP) facilities at the Lindsey and Humber refineries at Immingham. Both refineries will be supplied with gas via a spur from the existing Theddlethorpe-Killingholme pipeline.

According to Rendall, the Simon group is becoming more involved in third-party support services such as aviation refuelling and pipeline distribution management. 'Companies increasingly want to buy from suppliers with a range of services rather than negotiate with lots of suppliers. We aim to be one of those "preferred suppliers".'

BULK STORAGE SURVEY

Country	Capacity ,000s cum	% of total
Belgium	1,656	4.54
Denmark	355	0.97
Eire	500	1.37
Estonia	196	0.54
France	7,079	19.41
Germany	7,436	20.39
Italy	210	0.58
Malta	359	0.98
Netherlands	12,548	34.41
Portugal	90	0.25
Spain	573	1.57
Sweden	1,034	2.84
Switzerland	347	0.95
UK	4,082	11.19
Total	36,465	100.00

Petroleum Review would like to thank all the companies who have provided us with details of their storage operations. Every attempt has been made to ensure that the information in this survey is comprehensive and accurate. However, if you know of any omissions please contact us to ensure that they are included in our 1998 Bulk Storage Survey.

1997

BULK STORAGE SURVEY

Bantry Terminals LTD

Terminal Office: Bantry Terminals Ltd, Reenrour, Bantry, Co Cork, Ireland
Tel: **+353 27 50346** *Fax:* **+353 27 51065**
Commercial Enquiries: Seamus Fahy, Irish National Petroleum Corporation Ltd, Warrington House, Mount Street Crescent, Dublin 2, Ireland
Tel: **+353 1 660 7966** *Fax:* **+353 1 660 7952**
Bantry Terminals Ltd, a subsidiary of Irish National Petroleum Corporation (INPC), owns and operates a crude oil storage terminal on Whiddy Island in Bantry Bay, SW Ireland. A single point mooring (SPM) discharge and loading facility has recently been installed and is currently being commissioned. The SPM is designed to handle vessels up to 320,000 dwt and is situated in an area where water depth is in excess of 30 metres.

Onshore there are 12 main crude oil storage tanks, each with a capacity of approximately 80,000 tonnes. Whilst not all these tanks are currently in service, there is a working crude oil storage capacity in the range of 300,000 to 400,000 tonnes.

The facility is suitable for both storage and transhipment of crude oil.

Barrow Storage Co LTD

Head Office: 15 Fitzwilliam Square, Dublin 2, Eire
Tel: **+353 1 676 3524** *Fax:* **+353 1 661 4704**
Three installations: One at Marshmeadows, New Ross, Co Wexford, Eire. Storage for 16,000 cubic metres of petroleum products, including LPG. The berth on the River Barrow is capable of handling vessels up to eight metres draught. Tankage includes a 4,500 cubic metres tank which is heated and insulated. One at Dundalk with 2,500 tonnes of gas oil and kerosene. A sea-fed chemical storage plant in Tivoli, Cork with 2,000 tonnes of caustic liquor soda and plans for further chemical, oil and LPG extensions.

Bominflot Tanklager GMBH

Tankweg 1, 2103 Hamburg 95, Germany
Tel: **+49 40 740007 0** *Fax:* **+49 40 740007 32**
Seventy-five tanks with a gauging volume of 240,000 cubic metres available for storage of mineral oils, chemicals, alcohols, vegetable oils, greases, paraffins, waxes and fertilizers. The A1 tank space is equipped with security devices to prevent overfilling and is provided with double bottoms. The A111 tank space is equipped with heating coils, security devices to protect from overfilling, partly with double bottoms and in most cases it is insulated. The size of the tanks is between 50 and 25,000 cubic metres.

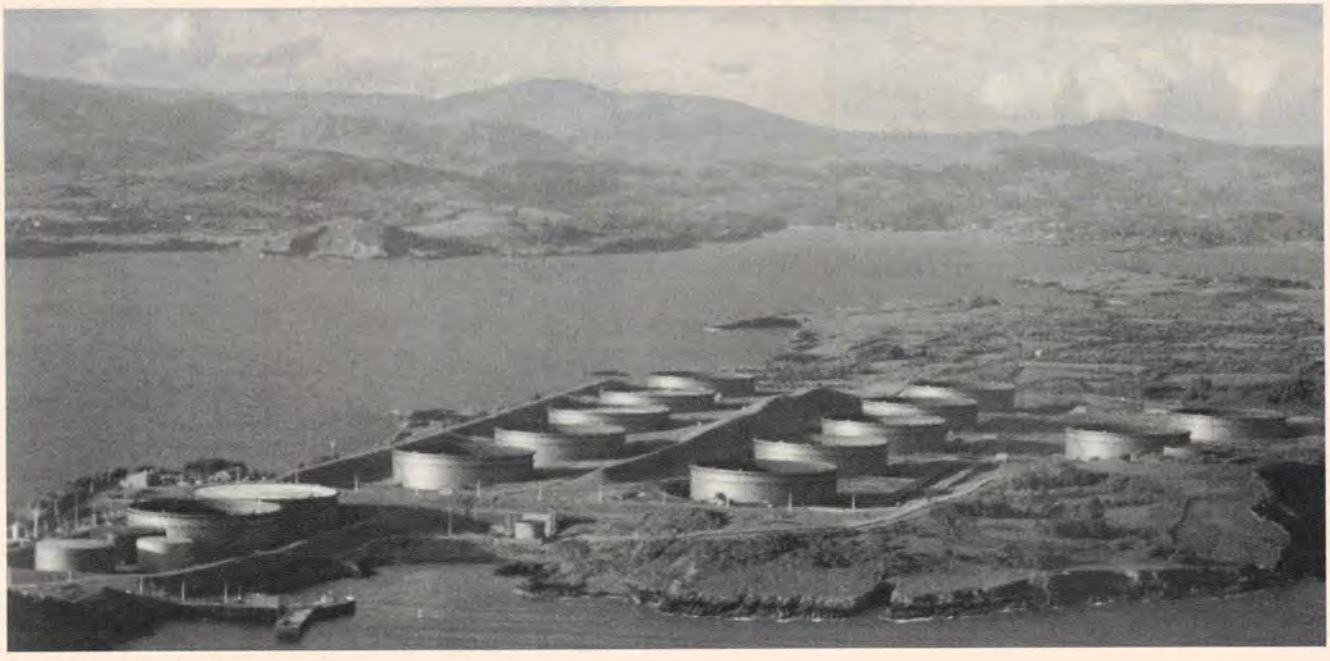
There are six berths with a maximum tonnage of 80,000 dwt, maximum length is 260 metres and maximum draught is 9 metres. There is a discharging and charging station. For tank vehicles there are six platforms with volume meters, scales and four other discharging/charging stations.

BTP Storage LTD

Hayes Road, Cadishead, Manchester M30 5BX, UK
Tel: **+44 (0)161 775 3945** *Telex:* **669938** *Fax:* **+44 (0)161 775 3970**
Part of the BTP plc group of companies. The installation occupies a 20-acre site on the north bank of the Manchester Ship Canal. Total tank capacity of over 100,000 cubic metres with a range of tanks up to 6,000 cubic metres capable of handling most types of petroleum and chemical products. Blending, drumming and weighbridge facilities available. Rail sidings for up to 1,400 tonnes. Berth: maximum draught 24.5ft, approximately 6,000 tonnes. Easy access to the M6 and M62 motorways.

Chemical Manufacture and Refining (CMR) LTD

Sunderland Tank Storage Division, Hendon Dock, Sunderland, Tyne & Wear SR1 2ES, UK
Tel: **+44 (0)191 568 0004** *Fax:* **+44 (0)191 568 0020**
The terminal can receive ships of up to 6,000 tonnes dwt capacity and has mild steel and stainless steel import lines. There are 36,000 cubic metres of storage contained in 20 tanks. Products stored include petroleum refinery products, petrochemicals and chemical solvent by-products. Nearby associated company has large distillation units for processing of specification and contaminated cargoes. Drumming-off facilities, drum storage and bonded facilities also available.



Bantry terminal, Co Cork

Compagnie Industrielle Maritime (CIM)

36, rue de Liège, 75008 Paris, France
Tel: **+33 1 43 87 33 49** *Telex:* **280330 CIMDGPA.** *Fax:* **+33 1 43 87 43 08**
Contacts: Mr B Salaün (Sales Manager) Direct Line: **+33 1 43 87 43 14**
Fax: **+33 1 42 94 02 81**
Mr C N Malcolm (UK Representative) Tel: **+44 (0)1235 763005**
Fax: **+44 (0)1235 768687**

CIM is an independent French company which owns and operates a modern and highly sophisticated storage, transhipment and break-bulk facility capable of handling crude oils, distillates and all clean petroleum products. The complex, which is situated in France at Le Havre and Antifer, has a total capacity of some 5.2 million cubic metres. At Antifer, only crude oil tonnage in excess of 250,000 tonnes dwt is handled with the port capable of handling the world's largest tankers. At Le Havre, the smaller crude oil carriers (under 250,000 tonnes dwt), light distillates and all other clean petroleum products are handled.

There is a pipeline link allowing cargo to be transferred from Antifer to Le Havre (where it can be back-loaded after storage if required). All cargoes stored and handled are in a customs bond warehouse and CIM prides itself on maintaining its clients' confidentiality.

CIM now owns all equipment at the Antifer terminal, which consists of four tanks of 150,000 cubic metres each, and two of 22,500 cubic metres each with an overall capacity of 645,000 cubic metres. Access is by sea. Sea berths with draughts of 98ft and 82ft respectively. Facilities for discharging ULCC-type vessels up to 550,000 tonnes and for transhipments.

Comos Tank BV

Octaanweg 14, 1041 AN Amsterdam, The Netherlands
Tel: **+31 20 587 2121** *Telex:* **13121** *Fax:* **+31 20 587 2150**

A subsidiary of VTG Vereinigte Tanklager und Transportmittel GMBH. Operates a terminal with an overall capacity of 700,000 cubic metres for storing all petroleum products and bulk chemicals. Tanks range from 3,500 to 40,000 cubic metres, some coated or insulated and equipped with heating-coils. Blending facilities for gasoline, heavy fuel oil and gas oil and facilities for leading, product washing and butanizing are available. Three jetties for seagoing vessels and eight jetties for barges. Distillation towers for processing are available to ensure efficient storage and transfer.

Dupeg Tank Terminal

Terminal: Tankweg 4, D-21129 Hamburg, Germany
Tel: **+49 40 740 440** *Fax:* **+49 40 740 44140**

Dupeg Tank-Terminal in the Port of Hamburg specializes in handling liquid cargoes. The handling facilities at Waltershof Petroleumhafen are some of the most modern in Europe.

On average, some 150 different liquid cargoes are stored each year in more than 100 tanks which can take virtually any kind of cargo, eg petrochemicals, chemicals, turpentine products, industrial alcohol, alcoholic beverages, acids, alkalis, vegetable and animal oils and fats.

Total tank capacity is 130,000 cubic metres of which one-third is fitted out with special linings, and the qualitative treatment of products, eg mixing, filtering, clarifying or standardizing, is part of the service Dupeg Tank-Terminal offers.

Individual tanks of 20 to 10,000 cubic metres, including 26 stainless-steel tanks totalling 17,500 cubic metres.

Dupeg's management system is accredited with the DIN ISO 9002 quality control standards. In accordance with the terms of the International Marine Pollution Convention (MARPOL), Dupeg Tank-Terminal serves as the recipient for chemical slops from ships calling at the Port of Hamburg.

Transport links include: two pontoon bridges for ocean-going ships of up to 35,000 dwt (depth of water: 13 metres); container ramps and lighter berths for handling barrelled cargoes; own sidings complete with tank wagon filling station; linked to European motorway system via neighbouring A7 Autobahn.

Felixstowe Tank Developments LTD

FTD House, The Dock, Felixstowe, Suffolk IP11 8SE, UK
Tel: **+44 (0)1394 676112** *Fax:* **+44 (0)1394 673590**

Ninety-two mild and stainless steel tanks, totalling 64,000 cubic metres storage capacity, equipped to handle a comprehensive range of liquid, edible, chemical and petroleum products. Road and container tank load and discharge. Tank capacities 30 to 2,800 cubic metres, product heating, steam, hot water and electric. Lined and insulated tanks, stainless steel pipelines, gas purging, water cooling. Alcohol, hydrocarbon and IDA bonds available. Tanker berth 9.1 metres draught – 180 metres length. With additional services including drumming, methylation, dilution, blending and 50,000kg capacity public weighbridge.

FETSA

Federation of European Tank Storage Associations, Avenue de la Joyeuse Entrée 1, B-1040, Brussels, Belgium
Tel: **+32 2 285 00 22** *Fax:* **+32 2 285 00 24**

FETSA embraces national associations of independent tank storage operators in seven EU member states, representing a total of 70 companies – with affiliates – owning 168 terminals with a total volume of about 36 million cubic metres of storage capacity.

FETSA is active at the interface with international government institutions and other federations with relevant adjacent interests. FETSA Board members: President, Mr Ph Marache; Vice-President, Mr P Govaart; Secretary-General, Dr H Abendroth; Treasurer, Mr J F Adriaens, Member, Mr G Bonetti; Liaison Officer (Brussels), Mr U Schröder.

Fox Petroli SPA

Via Senigallia N. 29, 61100 Pesaro, Italy
Tel: **+39 721 403465** *Fax:* **+39 721 403505**

Total storage capacity of about 130,000 cubic metres of oil products (clean and dirty). Terminal in Pesaro Harbour for loading and discharging vessels. Services available: Tank-Truck loading/unloading, heated and insulated tanks and pipes, tanks equipped with recirculating systems, petroleum products dyeing, blending of oils and fuels, heat supply, tank-truck weighing, bunkering of barges with tank-trucks and custom services.

Gamatex NV

Head Office: Haven 623, Scheldelaan 450, B-2040 Antwerpen, Belgium
Tel: **+32 3 561 15 00** *Telex:* **32459** *Fax:* **+32 3 561 15 27**

Gamatex is a 50/50 joint venture between GATX Terminals Corporation and Van Ommeren and has one installation in Belgium.

Antwerp: The terminal has 143 tanks with a total capacity of 486,100 cubic metres for mineral oils, petrochemical liquids and chemical gases. There are five jetties for seagoing vessels (draught 44ft) and five for barges. Access is by sea, rail and road and pipeline. Tankage is insulated, coiled, coated, mild steel as well as stainless steel. Heating possibilities

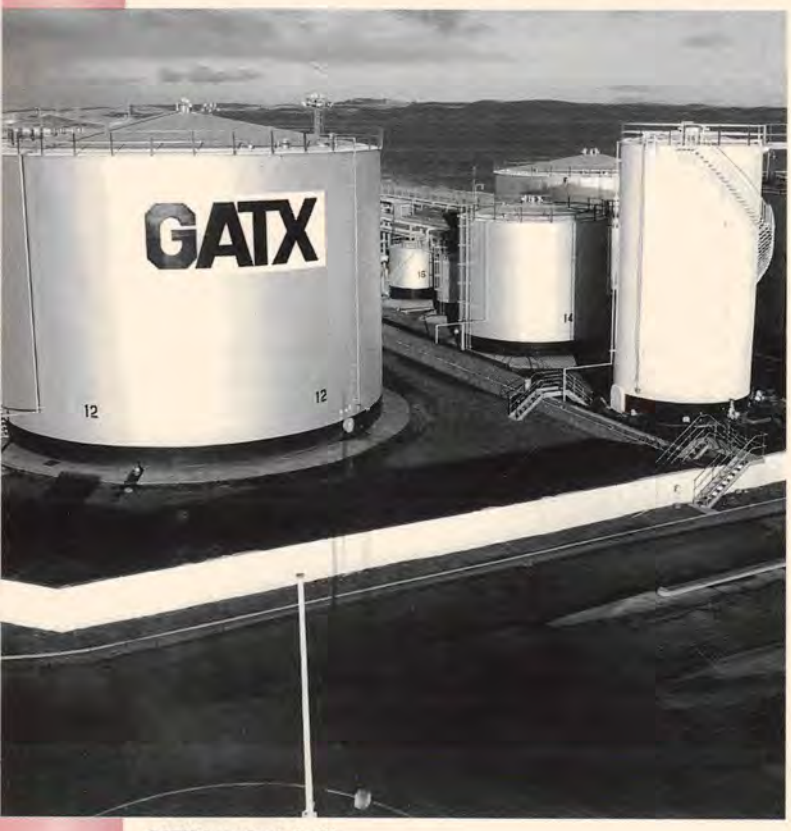
are steam, warm-water and electrical tracing. Tanks for chemical products are equipped with dedicated product lines and pumps and most of them with vapour return. Pre-pump, blending, drum filling and nitrogen blanketing are also available.

GATX Terminals LTD

Nicholson House, High Street, Maidenhead, Berkshire SL6 1LQ, UK
Tel: **+44 (0)1628 771242** *Fax:* **+44 (0)1628 771678**
A wholly owned subsidiary of GATX Terminals Corporation of Chicago. GATX Terminals Ltd operates eight terminals in the UK. Subsidiary: Manchester Jetline Ltd. Associates: Tees Storage Company Ltd; Unipen Ltd; Wymondham Oil Storage Company Ltd. GATX is BS 5750 part 2/ISO 9002 accredited.

Avonmouth, Bristol: Twenty-six tanks with a total capacity of 83,369 cubic metres, from 1,346 to 6,924 cubic metres in size, for high-and low-flash petroleum products and chemicals. Dock facilities comprise seven berths at the Royal Edward Dock (depth 9.8 metres, maximum length 210 metres, maximum beam 29 metres), five piggable docklines (three 10-inch lines, one 24-inch line and one 8-inch stainless steel line). Distribution is through fully automated top and bottom road loading facilities. Wensat pipeline connection. Easy access to M4 and M5 motorways.

Belfast: Thirty-eight tanks with a total capacity of 50,116 cubic metres from 498 metres to 5,000 cubic metres in size for high-and-low flash petroleum products and chemicals. A new jetty capable of handling vessels with 18,000-tonne cargoes is now operational (overall length 150 metres, maximum beam 29 metres and depth 9.5 metres). There are two 8-inch stainless steel and one 6-inch mild dockline. All docklines are piggable. Distribution through fully automated top and bottom loading facilities. Easy access to M1 and M2 motorways.



GATX terminal, Leith

Eastham, Merseyside: Site 1: Seventy-eight tanks with a total capacity of 261,988 cubic metres in tanks ranging from 35 to 10,800 cubic metres in size, suitable for high- and low-flash petroleum, lubricating oils and chemical products. Mild and stainless steel tankage, with and without coils and lagging. There are seven piggable docklines (two 6-inch stainless steel lines, one 10-inch stainless steel line, one 10-inch mild steel line, two 12-inch and one 14-inch).

Site 2: Eighty-five tanks with a total capacity of 91,407 cubic metres in tanks ranging from 30 to 3,950 cubic metres in size, suitable for high- and low-flash petroleum, lubricating oils and chemical products. Mild and stainless steel tankage, with and without coils and lagging. There are 12 shipping lines on site (seven mild steel and five stainless steel, ranging from 6- to 10-inch). There is also a semi-automatic drum filling facility.

Dock facilities consist of three berths in the QEII Dock (depth 10.1 metres, length 204 metres, beam 27.4 metres) and one berth bank of the Manchester Ship Canal for high-flash product. Both sites are capable of receiving and redelivering product by road, rail, barge and sea vessel. There is easy access to M53, M56, M6 motorways.

Grays, Essex: Fifty-two tanks ranging in size from 1,700 to 20,800 cubic metres capacity and providing a total capacity of 310,749 cubic metres for high and low flash petroleum products. There are two jetties (Wouldham Nos. 1 and 2, draught 11.3 metres, length 229 metres and unrestricted beam) with five piggable docklines (three 10-inch, one 12-inch and one 14-inch). Distribution through fully automated top and bottom road loading facilities. Easy access to M25 motorways.

Runcorn, Cheshire: Four tanks with a total capacity of 40,000 product tonnes for heated liquid sulfur. Dock facilities comprise one berth on the Manchester Ship Canal. Distribution is through road loading on two automatic weighbridges. Easy access to M53, M56 and M6 motorways.

Leith, Scotland: Thirty-four tanks with a total capacity of 72,902 cubic metres in tankage ranging from 55 to 13,400 cubic metres capacity in size for both high- and low-flash petroleum and chemical product. Dock facilities comprise one berth (maximum length 198 metres, maximum beam 30.5 metres, draught 9.5 metres). There are two new 10-inch mild steel petroleum docklines and two stainless steel docklines. Road loading is being upgraded to allow fully automated top and bottom loading facility. Access to M8, M9 and M90 motorways.

Glasgow, Scotland: This new GATX site opened on 1 June 1996. GATX Glasgow has 16 tanks for high- and low-flash products and a total capacity of 54,685 cubic metres which is distributed through fully automated top and bottom loading facilities. There is one jetty with draught 11.9 metres, length 200 metres and an unrestricted beam, and there are six wet docklines dedicated to each product. Easy access to M8, A8.

Wymondham, Norfolk: Joint venture between Mobil Oil and GATX Terminals Ltd. Eight tanks with a total capacity of 39,200 cubic metres ranging in size from 4,100 to 5,200 cubic metres. This terminal is pipeline fed and stores high- and low-flash petroleum products on a comingled basis. Distribution through fully automated road loading facilities. Easy access to A11.

Manchester Jetline Ltd: Joint venture between GATX Terminals Ltd and Penspen Engineering Consultants. The MJL pipeline system allows jet fuel to be transported to Manchester Airport. It started operating at the beginning of 1994. The system is such that most UK refineries could pump fuel to Manchester Airport if required.

Great Marsh LTD

Eling Terminal, Totton, Southampton SO40 9TN, UK
Tel: **+44 (0)1703 663444** *Fax:* **+44 (0)1703 873429**
Great Marsh is the new name for SWTD following the sale of the company's road contracting business. Founded 100 years ago, Great Marsh is a specialist chemical and oil services company located in the fast growing Port of Southampton. The services offered include a full round the clock tank storage operation.

Eling Terminal has over 125 tanks in a range of sizes up to 7,000 cubic metres on a site which covers over 40 acres. Total storage capacity is 36,000 cubic metres with planning permission and ample space for further expansion. Some tanks are stainless steel and a wide range of chemicals and oil products are handled ranging from low-flash product including crude oil, up to and including fuel oils and bitumen. Many tanks are insulated and heated.

A comprehensive blending service is also offered for aqueous and solvent products, including lubricants and anti-freeze. There is also a complete high/low flash drumming service with three drumming lines, including drumming from roadcars. The company also operates a number of toll chemical manufacturing and packaging operations.

The site operates on a 24-hour, 7 day/week basis and has its own wharf with the capacity to take vessels up to 2,000 tonnes of high- or low-flash product. Eling Terminal is also immediately adjacent to the M271 with direct links to the M27 and M3 motorways.

The terminal is approved to BS EN ISO 9002: 1994, and has a comprehensive Waste Transfer Licence for the storage of bulk liquid and packaged waste. There is also extensive covered and dutch barn warehousing for the storage of hazardous or non hazardous goods. The site has its own laboratory facility and can provide an inclusive service to meet customer needs.

Haltermann GMBH

Head Office: Ferdinandstraße 55/57, 200 95 Hamburg, Germany
Tel: **+40 33318-0** *Telex:* **2161815** *Fax:* **+40 33318-214**
Operates four terminals in Europe.
Hamburg-Wilhemsburg: Total capacity of 120,000 cubic metres, with tanks varying in size from 50 to 5,000 cubic metres, for all vegetable oils, petroleum product, solvents and chemicals. Some tanks are heating-coiled and insulated. Drumming and blending facilities are available. Access for ships, barges, road and rail tank cars and liner trains; two berths including a 33ft draught jetty.

Haltermann NV (Belgium): *Ketenislaan 3, B-2748 Beveren/Kallo Linker Oever.*
Tel: **+32 3 750 02 11** *Telex:* **33705** *Fax:* **+32 3 775 02 61**
All petroleum products, solvents, chemicals and vegetable oils can be stored in this 60,000 cubic metre capacity terminal. Tanks vary in size from 300 to 3,000 cubic metres. Some are stainless steel and coated with heating coils and insulation. Drumming and blending facilities are available, as is an associated custom processing plant. Access by road, rail and sea for vessels up to 28ft draught.

Haltermann A/S (Denmark): *Søndre Molevej, DK-4600 Køge (near Copenhagen)*
Tel: **+53 653370** *Telex:* **43565** *Fax:* **+53 657009**
Tanks ranging in capacity from 20 to 4,000 cubic metres make up this 15,000 cubic metres capacity facility. All petroleum products, solvents and chemicals can be stored. Some tanks heating-coiled and insulated; drumming facilities. Distribution by road, rail and sea, with berths for 12,000 tonnes dwt tankers.

Haltermann A/B (Sweden): *Petroleumgatan 5, S-21124 Malmö*
Tel: **+40 181220.** *Telex:* **32544** *Fax:* **+40 938485**
This 20,000 cubic metre capacity terminal has tanks ranging in size from 20 to 2,000 cubic metres for all petroleum products, solvents and chemicals. Some tanks are stainless steel, coated, heating-coiled and insulated. Distribution by road, rail and sea.

IBL Bulk Liquids

110 Lime Street, Hull HU8 7AS, UK
Tel: **+44 (0)1482 320736** *Fax:* **+44 (0)1482 226162**
132 storage tanks ranging from 50 to 830 cubic metres with a total capacity of 25,000 cubic metres. Specializes in the storage of non-hazardous chemicals, lubricating oil, additives and vegetable oils. The wharves are situated on the Hull River at Hull Forge Wharf and at 50–52 Lime Street, Hull. Facilities for receiving ex-road tankers or containers and good access to main roads leading to the M62 motorway. Steam heating, blending, packaging and vehicle steam cleaning facilities on site.

Alexandra Dock, Hull
First phase of new terminal now completed at East Quay, Alexandra Dock, Hull. Tanks from 600 to 1,760 cubic metres with a current capacity approaching 12,000 cubic metres. Heated coated and insulated tanks suitable for import and export cargoes with dedicated pipelines to ensure product integrity. Priority berthing for vessels up to approximately 7,500 dwt. Steam heating, blending, drying and undercover vehicle loading facilities are all available on site. Additional land is available to accommodate further expansion.

The Independent Tank Storage Association (ITSA)

Executive Secretary: J G Wort FInstPet, 58 Harnham Road, Salisbury, Wiltshire SP2 8JJ, UK
Tel: **+44 (0)1722 415572** *Fax:* (0900–1800hrs) **+44 (0)1722 415572**
The Association provides information and advice to government and other regulatory bodies in connection with the practical, safety and environmental health aspects of the bulk liquid storage industry. Membership is open to all companies operating in the UK whose main business is the storage of bulk liquids for third parties. A minimum capacity of 50,000 cubic metres is required for full membership and all companies with over that amount are currently members of ITSA. Associate membership is available to those with less than 50,000 cubic metres capacity. ITSA is a founder member of the Federation of European Tank Storage Associations (FETSA) which represents the industry and its particular characteristics in discussions with the European Commission (EC) on developing legislation.

King's Lynn Storage LTD

Head Office: PO Box No 2, Melton Constable, Norfolk NR 24 2QR, UK
Tel: **+44 (0)1263 860812** *Fax:* **+44 (0)1263 861491**
Terminal: Estuary Road, King's Lynn, Norfolk PE30 2HH, UK
Tel: **+44 (0)1553 764382** *Telex:* **817018** *Fax:* **+44 (0)1553 767942**
The activities of King's Lynn Storage are twofold: 1. Having sold its main storage terminal to its principal customer, Kuwait Petroleum (GB) Ltd, it manages the 15,000 cubic metres terminal on behalf of KPGB.
2. King's Lynn Storage Ltd operates another terminal comprising 10 storage tanks ranging from 55 cubic metres to 2,200 cubic metres with a total capacity of 4,000 cubic metres. It is served from Bentinck Dock, King's Lynn, where KLS has access to three berths by agreement with Associated British Ports. The port can accommodate vessels up to 3,000 tonnes dwt. One 6-inch fully pigged product line leads from the berths to the terminal which is approved for the storage of petroleum products and chemicals. There are facilities for the discreet delivery of all products to road tank wagons. Office and warehouse space is available to meet customers' requirements.

BULK STORAGE SURVEY

1997

La Petrolifera Italo Rumena SPA

Head Office: 40136 Bologna, Viale Aldini 190, Italy
Tel: **+39 51 331567** *Telex:* **511549** *Fax:* **+39 51 332451**
Terminal: Via Bajona, 260 – Porto Corsini-Ravenna, Italy Tel: **+39 544 538497** *Telex:* **550122** *Fax:* **+39 544 531535**
Total storage capacity for petro-chemicals and bulk liquids of 80,000 cubic metres. Has 57 tanks ranging from 250 to 5,000 cubic metres for high- and low-flash products. Some tanks in stainless steel, some rubber or specially coated; nitrogen blanketing facilities; hot water system for accurate temperature control. Each tank has its own pump and line to loading racks and its own loading point to avoid any risk of mixing or contamination. Two vessel berths, both of which can accommodate vessels up to 180 metres in length and up to 8.5 metres (28 ft) draught. sixteen pipelines, between 6-inches and 12-inches diameter (some insulated and of stainless steel) from berths to the storage tanks.

LBC (group Fimalac)

Storage of liquid products: LBChimie disposes over more than 1 million cubic metres of liquid storage spread over four European countries; Belgium, France, Portugal and Spain.
Warehousing: in France for hazardous, in Belgium for non hazardous goods. All terminals are ISO 9002 qualified.

Belgium

LBC Antwerpen (formerly General Tank Storage)
Haven 275, Leon Bonnetweg 28, B-2030, Antwerpen
Tel: **+32 3 543 0505** *Fax:* **+32 3 543 0501**
Storage: 185,000 cubic metres. Tanks: from 120 to 3,300 cubic metres. mild steel, stainless steel and coated. Products: all chemicals, mineral and vegetable oils, oil additives and bitumen. Handlings: heating, blanketing, filtering, blending and drumming. Accessibility: Rail, road and sea; 568 metres of quay with safety draught of 10.96 metres (36ft).

France

LBC Marseille (formerly MAVRAC)
Route de Port Pétrolier, 13117 Lavera, France
Tel: **+33 4 42 44 4244** *Fax:* **+33 4 42 44 4220**
Storage: 183,000 cubic metres. Tanks: from 120 to 10,000 cubic metres, mild steel, stainless steel and coated. Products: all chemicals, mineral oils, oil additives. Handlings: heating, blanketing, filtering and drumming. Accessability: rail, road and sea; two quays with a draught of 11.88 metres (39ft).

LBC Nantes (formerly SIC)
103, quai Emile Cormerais BP 53, 44801 Saint Herblain, Cédex France
Tel: **+33 2 40 43 43 25** *Fax:* **+33 2 40 46 52 52**
Storage: 32,000 cubic metres. Tanks: from 50 to 1,750 cubic metres, mild steel, stainless steel and coated. Products: chemicals, animal fats, vegetable oils, molasses and bitumen. Handlings: heating, blending, filtering and drumming. Accessibility: rail, road and sea; two jetties with a draught of 9.5 metres (31 ft).

Sogestrol
Route de la Chimie, BP 1194, 76064 Le Havre, Cédex, France
Tel: **+33 2 35 53 37 70** *Fax:* **+33 2 35 53 36 94**
Storage: 360,000 cubic metres. Tanks: from 50 to 15,000 cubic metres, mild steel, stainless steel and coated. Products: all chemicals. Handlings: heating, blanketing, binding, filtering and drumming. Accessibility: rail, road and sea; six jetties up to 40,000 tonnes.

LBC Le Havre (formerly Sotrasol)
Chausée Roger Meunier, 76600 Le Havre, France
Tel: **+33 2 35 42 22 62** *Fax:* **+33 2 35 42 47 49**
Storage: 105,000 cubic metres. Tanks from 135 to 5,080 cubic metres, mild steel, stainless steel and coated. Products: all products with flash-point above 100°C, chemicals, animal fats, vegetable oils and molasses. Handlings: heating, blanketing, blending, filtering and drumming, dehydrating. Accessibility: rail, road and sea; three jetties with a draught of 14 metres (46 ft).

LBC Bayonne (formerly Sotrasol)
Zone Industrielle, Route de la Barre, 40220 Tarnos, France
Tel: **+33 5 59 64 4800** *Fax:* **+33 5 59 64 4801**
Storage: 101,000 cubic metres. Tanks: from 600 to 15,000 cubic metres, mild steel, stainless steel and coated. Products: all chemicals, gas oil and crude. Handlings: heating, blanketing, blending, filtering and drumming. Accessibility: rail, road and sea; two berths with a draught of 8.7 metres (28.5 ft).

Portugal

Tanquipor: *Parque Industrial do Barreiro, 2830 Barreiro (Lisboa), Portugal*
Tel: **+351 1 206 03 48** *Fax:* **+351 1 207 5941**
Storage: 90,000 cubic metres. Tanks: from 800 to 30,000 cubic metres, mild steel and coated. Products: chemicals, mineral oils, gas oil and gasoline. Handlings: heating, blanketing, blending, filtering and drumming. Accessibility: Rail, road and sea; private jetty with a draught of 9.7 metres (32 ft).

Spain

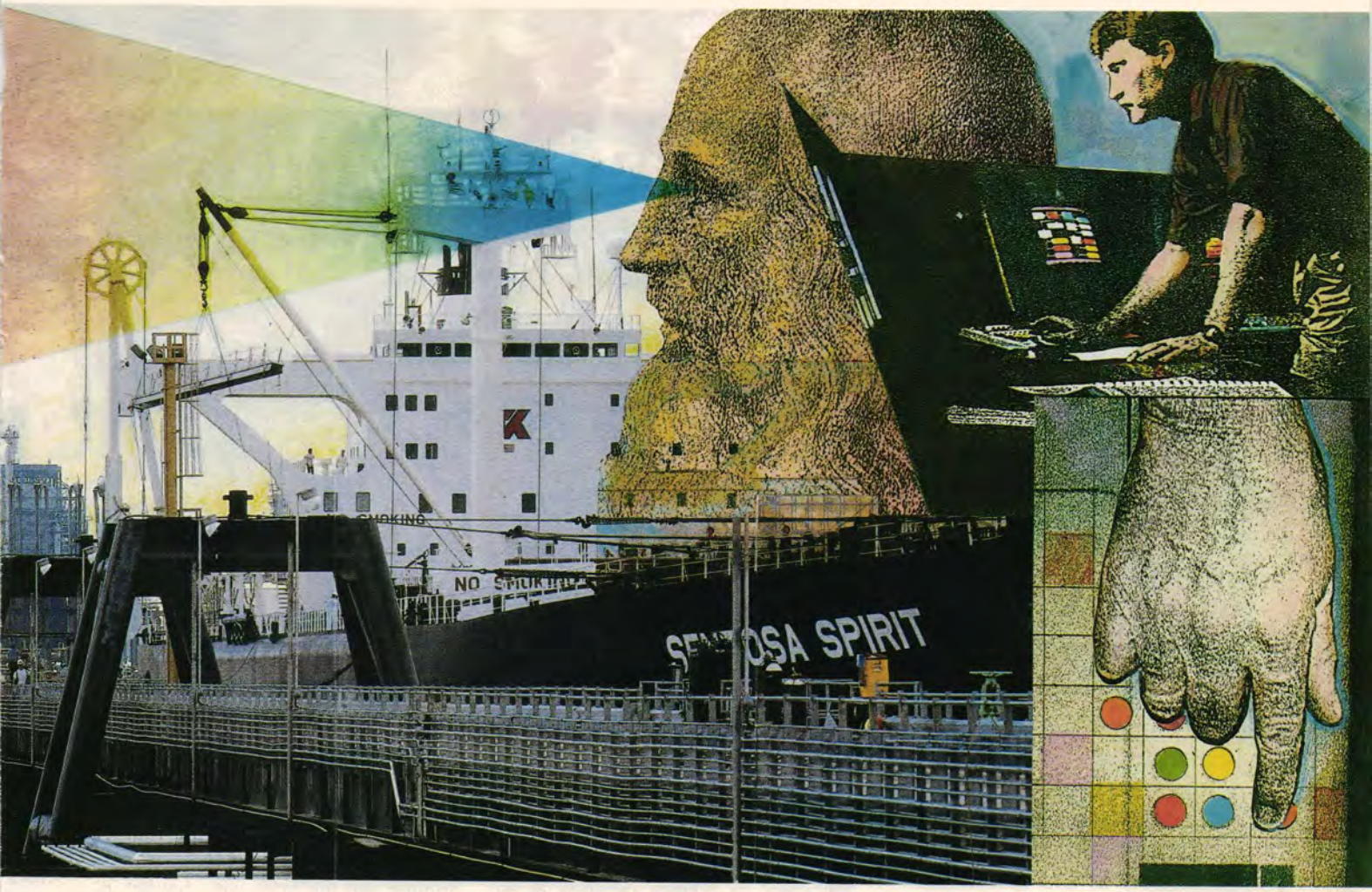
Terquisa: *Poligono Central de Raos, E-39011 Santander, Spain*
Tel: **+34 42 34 3634** *Fax:* **+34 42 33 3804**
Head Office: Sta Cruz de Marcenado 31, E-28015, Madrid.
Tel: (34) 1 547 3027 Fax: (34) 1 542 1391
Storage: 65,000 cubic metres. Tanks: from 50 to 2,500 cubic metres. Products: petroleum and chemicals. Handlings: heating, blanketing and blending. Accessibility: rail, road and sea; private jetty with a draught of 12.2 metres (40 ft).

National Gas

Canvey Terminal, Canvey Island, Essex SS8 OHR, UK
Tel: **+44 (0)1268 511511** *Fax:* **+44 (0)1268 694011**
Head Office: *Liquefied Petroleum National Gas Ltd, 51 Grosvenor Street, London W1X 9FH, UK*
Tel: **+44 (0)171 409 2442** *Fax:* **+44 (0)171 409 2029**
National Gas is the operator of the largest fully refrigerated LPG distribution terminal in the UK, which will be commissioned in September 1997. Situated at Canvey Island, the terminal has six aluminium alloy and two low carbon steel tanks with a total capacity of 40,000 tonnes. The single jetty is capable of handling vessels of up to 220 metres length overall with a minimum of 11 metres of water available at low tide. The facility is designed principally to store fully refrigerated propane although butane can be accommodated in the two low carbon steel tanks. Inland distribution is via road tanker loading racks, although smaller LPG carriers can be loaded alongside the jetty. The site has its own laboratory, workshops, weighbridge and will have fully computerized stock accounting.

Noord Natie Terminals NV

Stadswaag 7–8, B-2000 Antwerp, Belgium
Tel: **+32 3 232 99 40** *Telex:* **31677** *Fax:* **+32 3 233 39 36**
Situated in the port of Antwerp. There are 189 tanks ranging from 30 to 8,300 cubic metres, with a total capacity of 225,000 cubic metres for vegetable oils, animal fats, oleochemicals, chemicals and mineral oils. Tanks are or can be equipped with heating coils, insulation and nitrogen blanketing facilities. Three mooring berths for seagoing vessels and a special dock for handling barges. Direct road and railway connections. Weighbridges up to 100 tonnes.



We Wouldn't Mind If Da Vinci Paid A Visit.

In fact, we think Leonardo would be quite impressed with the new technologies of today's Oiltanking terminals. Since he foresaw automation, we'd show him the hydraulic, articulated loading arms. And point out the advantages of our computerized control rooms: better in/out efficiencies, contamination-free product handling. Then we'd invite him to sit in as our professional engineering teams explore even more ways to customize the best of modern science to better serve our customers. Da Vinci might admire Oiltanking technology. You, however, can profit from it.

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Australian storage growth spurs retail competition

The recent establishment of coastal petroleum product storage facilities independent of the major oil companies has added a new dimension to the wholesale and retail sectors of the industry in Australia. Aided by the current surplus of motor spirit in Asia, the number of independent retailers is increasing.

The recent establishment of several independently owned seaboard terminals, particularly on the east coast, which are large enough to take shipments of imported motor spirits provides an alternative supply to product manufactured in local refineries.

This alternative supply source involves international traders who buy product on the open market and ship it to Australia, terminal operators who store the product and the independent companies which sell the product in the local market.

The divisions may not always be clear-cut as independent terminals may be owned by a trader or a company which simply provides the tank storage and wholesale dispensing facilities and has no ownership of the product itself.

In the past, Australia's petroleum terminals were owned and operated by the major oil refiners, generally as an adjunct to their refining operations, although occasional shipments of product have been imported from their networks outside Australia. For the most part, the country's independent petrol and diesel retailers entered supply arrangements with one of these majors for all their needs.

Petroleum product imports provide independents with an alternative supply source and thus stimulate competition. However, for the economics to work, the concept requires the establishment of independent terminals capable of storing and handling large volumes of landed product.

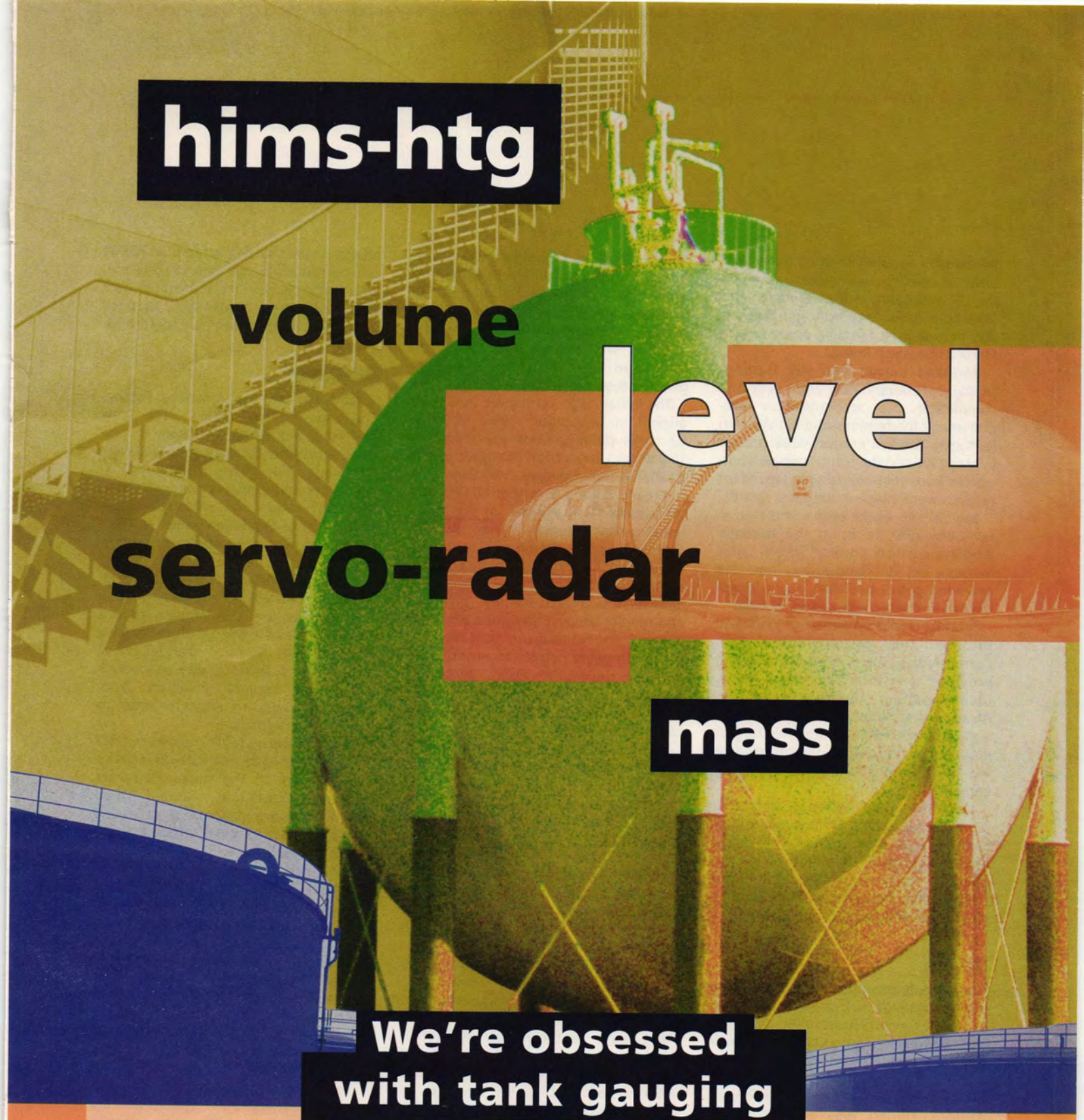
Hastings

The first entrepreneurs to establish independent tank farms began operations more than a decade ago. The late Henry Roach's Independent Oil Company (IOC), in conjunction with fellow independent XL Petroleum, run by Ian Sykes, built storage tanks at Hastings on Victoria's Western Port Bay in the early 1980s as the first step towards the establishment of a small mini-refinery.

The full project never came to fruition and the tanks were bought in the late 1980s by another entrepreneur, David Tamir, who had started the Victorian independent retail company Delta Petroleum. Tamir imported diesel, leaded and unleaded petrol for sale in Delta's retail outlets, and began to rehabilitate and modernize the facility during the early 1990s. Shortly afterwards Delta was bought by Shell Australia. However, Shell did not want the Hastings tank farm and Tamir decided to continue the modernisation programme with a view to attracting potential buyers in the future. The work included construction of a 10-km product pipeline in 1991 from the Port of Melbourne Authority (PMA) jetty on Western Port to the terminal.

In 1995, when the Hastings programme had been virtually completed, Tamir received an offer of lease plus option to purchase from the US-based Wickland Corporation. A family-owned business,

Van Ommeren's Botany Bay terminal where capacity is currently being expanded to 155,000 cubic metres



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Wickland is an established oil trader and terminal operator with a presence along the US west coast, in the Caribbean and Singapore. Its eastern Pacific Rim facilities also include joint terminal operations in China and eastern Russia.

Wickland moved into the Hastings facility in February 1996 and assisted in completing the modernisation programme at the terminal and the Western Port jetty. The first product vessel arrived in May 1996 and the first wholesale transactions from the terminal to independent retailers were made in the same month.

Several new tanks were completed in February 1997 to bring the terminal working capacity to over 70,000 cubic metres (cum). Wickland initially imported unleaded petrol but then began diesel imports in the second quarter of 1997.

Product is sold on behalf of Wickland through the petrol retailer VIP. Currently the Liberty brand retail chain provides a critical customer mass, taking regular monthly deliveries. Arrangements have also been made with Burmah Fuels, Australia's largest independent retailer, to import product via the Hastings terminal, beginning early in 1997.

Since opening, VIP has posted a 'terminal gate price' for product sold at the Hastings loading rack, providing open access to all qualified buyers. In addition to servicing the Melbourne metropolitan area, product from Hastings is widely distributed through Victoria.

Botany

Australia's largest independent petroleum product terminal is located at Botany in Sydney. It too is a recent facility although the owner – Van Ommeren Tank Terminals Australia – has been established in the country for several years.

Van Ommeren began operations in Australia during 1994 when it joined the existing Powell Duffryn Terminals in a partnership to operate the 36,000 cum capacity bulk chemical storage terminal at Botany that Powell Duffryn had built and run since 1979. Experience of the market led the company to the view that the time was right for a new bulk storage facility for wholesale petroleum product in New South Wales. Jan Doeksen was transferred from Van Ommeren's Singapore operation to become Commercial/ Development Manager in Sydney and oversee the new project. In the first quarter of 1996, Van Ommeren purchased Powell Duffryn's interest giving it sole ownership of the business.

The initial stage, completed and operational in September 1996, included 12 tanks ranging from 1,500 cum to 16,000 cum for a total storage capacity of 95,000 cum. However, Van Ommeren is already adding a further 60,000 cum of capacity. Construction of the additional tankage began in mid-1997 for completion by the second quarter of 1998.

'We had the expansion planned right from the beginning,' said Doeksen, 'and all the control systems, pipelines and manifolds were designed with this in mind. The result is the most modern, fully automated petroleum product terminals in the country. Four "day tanks" are kept topped up at all times so that there is no possibility of interruption to road tanker filling.'

Doeksen stresses that Van Ommeren is purely a service provider. It owns the tanks, but not the product. Product is imported via the Sydney Ports Corporation jetty on Botany Bay which is connected to the new terminal with two 300mm diameter pipelines. Van Ommeren handles petrol, diesel, blending components and also jet fuel, with Burmah currently the most significant customer. Like Wickland at Hastings, all petrol imported into Botany is unleaded

Although motor fuels – particularly unleaded petrol and diesel – make up the largest component of Botany's sales and throughput, the company is also aware of the upsurge in the jet fuel market in Australia which is expanding at a faster rate than motor fuels. Van Ommeren is working on a plan to become an independent supplier to Kingsford Smith Airport, Sydney by constructing a short spur line to connect with the existing jet fuel pipeline that runs from Ampol's Kurnell refinery direct to the airport.

Doeksen says the successful completion of the Botany facility provides Van Ommeren with a firm base for future growth in Australia. The principal focus is on seaboard capital cities and the next project on the drawing board is an 80,000 cum petroleum storage facility in Brisbane. Construction is expected to begin in mid-1997 with the expanded terminal operational by the fourth quarter of 1998.

Brisbane

A deal was recently signed by Fletcher Challenge Energy (FCE), the New Zealand-based energy company, to purchase the former Caltex bulk fuels storage terminal at Whinstanes in Brisbane. A newcomer to the independent petroleum products storage and wholesale trade, FCE's Brisbane acquisition is seen as a logical extension of its existing crude production, shipping, trading and marketing activities. John Williams, General Manager of FCE subsidiary, Fletcher Challenge Fuels (FCF) explains that the company exports condensate and crude oil from its New Zealand fields to Asian markets. Now, instead of returning empty the vessels can bring refined products from Singapore and other Asian refineries to the Brisbane terminal.

The Whinstanes facility, originally built in 1929, came on the market in September 1995 as part of the surplus terminals divestment condition imposed when Ampol and Caltex merged. Ampol already had a product terminal adjacent to its Lytton refinery and so the Caltex facility was opened to bids from independent operators. FCE was one of four tenderers.

The former Caltex facility incorporated a lube and blending operation. It accepted some imported transport fuels via a 1-km pipeline from the Port of Brisbane Corporation's jetty on the Brisbane River but was mainly used to store product from the two local refineries. Total tank storage capacity at the moment is around 43,000 cum, although FCF has plans to increase this to 60,000 cum.

The company is sourcing its own product, initially from Lytton refinery under an agreement with Ampol. However, later this year it will also bring in imported supplies. The company intends to enter the jet fuel market after acquiring an interest in the Brisbane airport facilities and meeting regulatory certification standards. A jet fuel pipeline from Whinstanes to the Brisbane airport already exists.

The overall aim is to be an indepen-

dent petroleum product importer serving independent retailers, distributors and direct consumers. FCF's market connection is restricted to wholesaling and the company has no intention of going into Australian retail sales.

Kwinana

The other Australian independent storage terminals — Terminals West and Coogee Chemicals—are in Kwinana, Western Australia. However, Mobil Oil Australia's recent hosting agreement for exclusive rights to use the 45,000 cum storage tanks at the Coogee facility for a set period means that there is no capacity to service independent retailers for the term of the contract.

Terminals West, on the other hand, is fully available to independent retailers in Western Australia. Also located in Kwinana, the facility has been in operation for just under four years. General Manager John Connell says Terminals West has a storage capacity of some 58,000 cum of petroleum product made up of four 12,000 cum and two 5,000 cum tanks.

'Our plans include increasing the capacity by 20,000 cubic metres in 1997,' he says. 'The petroleum product inventory includes diesel fuel and all grades of petrol which we either source ourselves and own, or we host for others in a leasing arrangement.

'The imports come in via a 2-km pipeline from the Fremantle Port Authority's Kwinana bulk cargo jetty, but there is also a pipeline from BP's nearby Kwinana refinery for supply of product manufactured in Australia,' he adds.

Like its eastern seaboard counterparts, the terminal is a fully automated 24-hours-a-day operation with three truck bays capable of handling both bottom and top loading vehicles. By far the largest customer is Gull Petroleum which has about 100 retail outlets in Western Australia, but Terminals West also supplies four or five of the state's smaller independents.

The future

The availability of petroleum product imports via independent terminals is increasing pressure on Australia's refineries to perform to world-class efficiencies. There is also an acceptance of the fact that the growth of substantial independent petroleum retailers fed by product imports is part of the evolution of the industry in Australia.

Estimates vary, but independents are currently said to have 8 to 10 per cent of the current retail market. Some suggest this could go as high as 25 to 30 per cent, while others feel it has already reached an upper limit. For the independent terminal operators, however, the future is best summed up by Jan Doeksen at Van Ommeren.

'The Australian market place is changing. Our business is to perceive that change, be the entrepreneur and provide the facilities to support it, confident that the market will respond. In the end, if you build a good enough road, people will walk on it.'

The following article is a shortened version of one that originally appeared in the *Petroleum Gazette*, volume 32, issue 1. It is reproduced with the kind permission of the Australian Institute of Petroleum.

BULK STORAGE SURVEY 1997

Oikos Storage LTD

Hole Haven Wharf, Canvey Island, Essex SS8 0NR, UK
Tel: **+44 (0)1268 682206** *Fax:* **+44 (0)1268 510095**

Oikos operates Hole Haven Wharf, the most seaward liquid bulk storage installation in the Port of London. The terminal is connected to the UK oil pipeline networks (UKOP and GPSS), delivering product throughout the UK including the three major airports – Heathrow, Gatwick and Stansted.

The 200-acre Hole Haven Wharf site has total capacity of 300,000 cubic metres with a variety of tankage, ranging from 50 to 20,000 cubic metres including coiled, lagged and lined tanks. The site is licensed to store low-flash product (with no night-time restrictions), treat and transfer hydrocarbon and other liquid wastes.

Three jetties, capable of handling vessels up to 220 metres length overall and 11.5 metres draught (at low water), serve the site and are linked to the storage facilities by more than 20 lines – including stainless steel, lagged and traced.

Oikos has recently invested in a state-of-the-art oily water treatment plant which will process oily water to levels well within current and expected parameters proposed by the EU and other regulatory bodies. Construction has now been completed and it is anticipated the plant will be operational by the time *Petroleum Review* goes to press.

Oiltanking GMBH

Admiralitätstraße 55, D-20459, Hamburg, Germany
Tel: **+49 40 370990** *Fax:* **+49 40 37 099199**

Worldwide, Oiltanking has a storage capacity of 6 million cubic metres. At the moment the company operates eight deepwater terminals, all designed for fast and efficient handling. These deepwater terminals are situated in Amsterdam, Ghent, Copenhagen, Hamburg, Houston, Malta, Singapore and Argentina. A new terminal in Mumbai (India) will be added to this list by the end of 1998 as a result of the new Indian Oiltanking joint venture. Construction of this grassroots terminal project starts autumn 1997 (first phase capacity 120,000 cubic metres).

All these deepwater terminals take up key positions in the international oil storage business. In North West Europe they are backed by a vast network of German inland terminals and an inland terminal in France (Annay). Recently this network was improved by increasing the storage capacity in Gera (Thuringia former east Germany) by 118,600 cubic metres. The combination of deepwater and inland terminals gives room to a wide variety of solutions to match individual needs.

The Amsterdam terminal plays an important role in the distribution of high and low flash-point products in North West Europe and the UK. Vessels up to 85,000 dwt are handled at this terminal and their cargo's redistributed on coasters and barges. Extensive product treatment facilities for the blending, leading, upgrading and downgrading of products are also available. Mid-1997 the construction started of a pipeline connection with Amsterdam Airport (Schiphol) due to a long-term contract for handling a major part of this airport's jet fuel consumption.

The Malta facility is the first public terminal to be located so near to the primary trade route between the Suez Canal and Gibraltar through which it is connected to ports in Europe, the Middle East, Africa, the USA and the Black Sea region. The Oiltanking Malta terminal is located at the Malta Freeport, allowing in-route products to be shipped in, stored, blended and shipped out duty free.

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The terminal in Ghent (Belgium) has been handling more and more chemical products. In order to accommodate the rising demand for storage of such clean products, the storage capacity has been increased by 93,000 cubic metres. Through its connection with the CEPS pipeline network the facility can distribute A1 jetfuel to various places (airports) in North West Europe.

Germany

Bendorf has a total storage capacity of 145,000 cubic metres in 22 tanks varying in size from 2,000 to 20,000 cubic metres. The terminal can accommodate low and high flash-point petroleum products and it can handle barges, railcars and trucks.

Berlin has a total storage capacity of 349,000 cubic metres in 30 tanks varying in size from 1,600 to 20,000 cubic metres. At the terminal low and high flash-point petroleum products can be stored and it can handle barges, railcars and trucks.

Bremen has a total storage capacity of 60,000 cubic metres in two tanks from 20,000 cubic metres and 40,000 cubic metres. The terminal can accommodate low flash-point petroleum product and can handle vessels (up to 30,000 dwt), barges, and has a pipeline connection.

Duisburg has a total storage capacity of 35,000 cubic metres in six tanks varying in size from 5,000 to 20,000 cubic metres. The terminal can accommodate low and high flash-point petroleum products and can handle barges, railcars and trucks.

Frankfurt has a total storage capacity of 50,000 cubic metres in 23 tanks varying in size from 95 to 5,000 cubic metres. The storage facility can accommodate low and high flash-point petroleum products and chemicals. The terminal can handle barges, railcars and trucks.

Gera has a total storage capacity of 158,600 cubic metres in nine tanks varying from 8,600 to 25,000 cubic metres. The terminal can accommodate low and high flash-point petroleum product and can handle railcars and trucks.

Hamburg has a total storage capacity of 600,000 cubic metres in 54 tanks varying in size from 2,000 to 50,000 cubic metres. The terminal can accommodate low and high flash-point petroleum product and heavy fuel oil; it can handle vessels (up to 85,000 dwt), barges, railcars and trucks.

Hamm has a total storage capacity of 76,000 cubic metres in eight tanks varying in size from 3,000 to 15,000 cubic metres. The terminal can accommodate low and high flash-point petroleum product and can handle barges, railcars and trucks.

Honau has a total storage capacity of 115,000 cubic metres in 12 tanks varying in size from 5,000 to 20,000 cubic metres. The storage facility can accommodate low and high flash-point petroleum product. The terminal can handle barges, trucks and has access to the CEPS pipeline network.

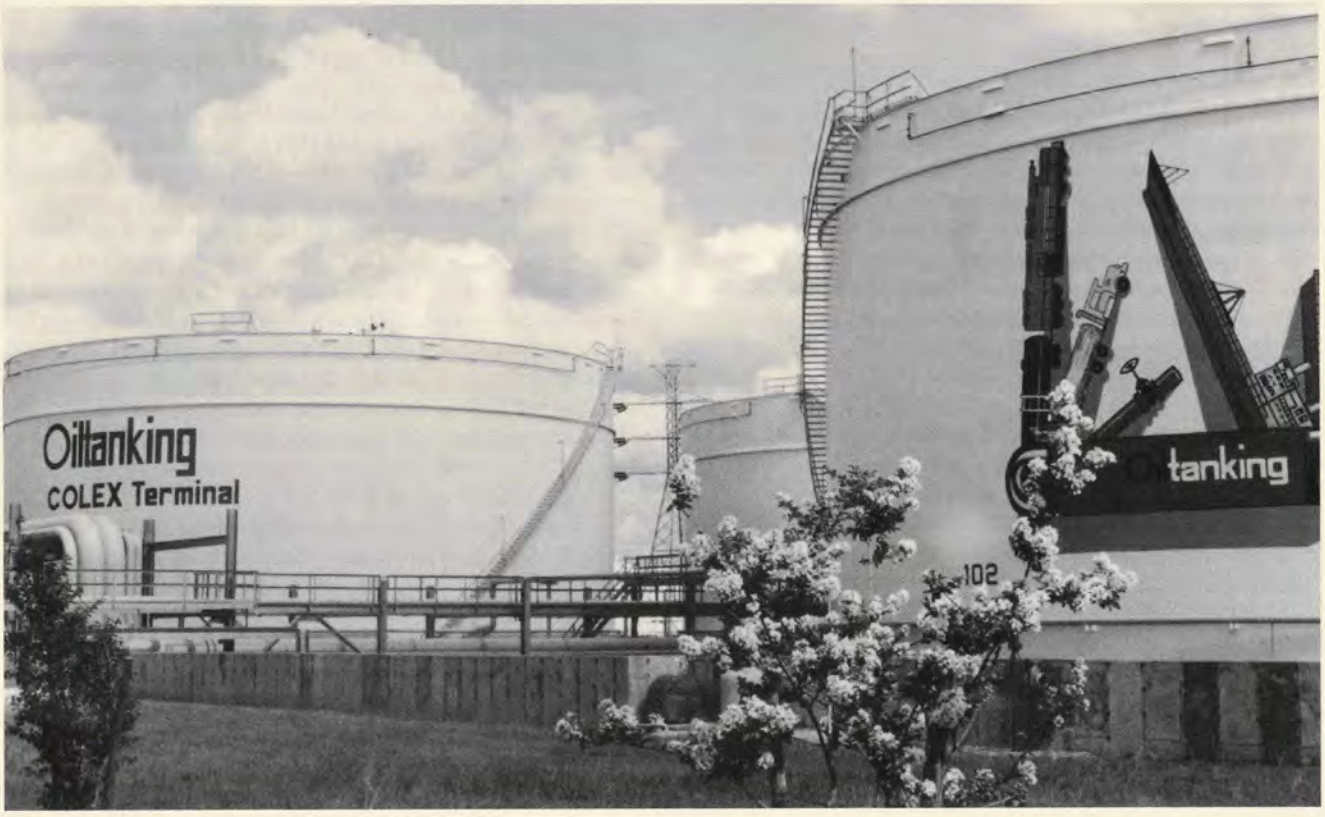
Karlsruhe has a total storage capacity of 161,000 cubic metres in 39 tanks varying in size from 600 to 20,000 cubic metres. The terminal can accommodate low and high flash-point petroleum product and can handle barges, railcars and trucks.

The Netherlands

Amsterdam has a total storage capacity of 800,000 cubic metres in 53 tanks varying in size from 690 to 40,000 cubic metres. The storage facility can accommodate low and high flash-point petroleum product, heavy fuel oil, crude oil, components, feedstocks and molasses. The terminal can handle vessels (up to 85,000 dwt), barges and is accessible through pipelines.

Belgium

Ghent has a total storage capacity of 700,000 cubic metres in 62 tanks varying in size from 800 to 47,500 cubic metres. The storage facility can



Oiltanking terminal

accommodate low and high flash-point petroleum product, feedstocks, chemical products, fertilizers and edible oils. The terminal can handle vessels (up to 65,000 dwt), barges, railcars, trucks and is connected to the CEPS pipeline network.

France

Annay has a total storage capacity of 58,000 cubic metres in 12 tanks varying in size from 1,000 to 15,000 cubic metres. The storage facility can accommodate low and high flash-point petroleum product and chemicals. The terminal can handle barges and trucks.

Denmark

Copenhagen has a total capacity of 339,500 cubic metres in 39 tanks varying in size from 1,600 to 16,500 cubic metres. The storage facility can accommodate low and high flash-point petroleum products, heavy fuel oil and slopoil. The terminal can handle vessels (up to 40,000 dwt) and trucks.

Malta

Malta has a total capacity of 359,000 cubic metres in 18 tanks varying in size from 500 to 35,000 cubic metres. The storage facility can accommodate low and high flash-point petroleum product, components and feedstocks. The terminal can handle vessels (up to 120,000 dwt) and barges.

Omni Tank GMBH

Marienstraße 20, 40212 Düsseldorf, Germany
Tel: **+49 211 93699-0** *Fax:* **+49 211 9369930**

Breisach: 23,400 cubic metres; 15 tanks ranging from 100 to 5,000 cubic metres for storing petroleum product. Access for barges and road tank cars.

Essen: 112,000 cubic metres; 39 tanks ranging from 600 to 12,000 cubic metres for petroleum product, chemical and petrochemical liquids and solvents. Insulated, coiled and coated tanks are available and equipped with dedicated pipelines, heating and blending facilities. Access by road, rail and barge.

Hanau: 48,000 cubic metres; 23 tanks ranging from 360 to 3,750 cubic metres for gasoline, gas oil, jet fuel and petrochemical liquids. Blending facilities are available. Access by road, rail and barge.

Karlsruhe: 51,000 cubic metres; 19 tanks ranging from 650 to 3,000 cubic metres for petroleum product and petrochemical liquids. Access by road and rail tank cars (liner trains) and barges.

Speyer: 796,000 cubic metres; 57 tanks ranging from 2,000 to 60,000 cubic metres for all petroleum products, chemicals and petrochemical liquids, liquefied gases and solvents. Blending facilities are available. Access by road, rail (liner trains), barge and pipeline (CEPS).

Paktank Oil Nederland BV

Oude Maasweg 6 (portnumber 4040), 3197 KJ Botlek-Rotterdam, The Netherlands
PO Box 5010, 3197 XC Botlek-Rotterdam, The Netherlands. Commercial enquiries: F R Ploeg, Manager Marketing & Sales
Tel: **+31 10 295 3405** *Telex:* **28507** *Fax:* **+31 10 438 7390**

Paktank Oil Nederland BV operates bulk liquid terminals in the Netherlands.

Netherlands: Botlek, Rotterdam: 1,549,000 cubic metres capacity of which 550,000 cubic metres is used for chemicals; access by sea, rail, road and pipelines. Pipeline connections to domestic refineries, chemical plants, national and international pipeline systems and to Paktank's other terminals in the Rotterdam area; draught sea berths: 39'6"; storage for petroleum product, chemicals and specialized liquids; distillation facilities through Pakhoed Products & Services; multi-purpose distillation columns for mineral oils and chemicals.

Maasvlakte, Rotterdam: 4,320,000 cubic metres capacity for crude oil; access by sea and pipelines; draught sea berths 74'.

Laurenshaven, Rotterdam: 926,000 cubic metres capacity for petroleum product; access by river and pipelines.

Europoort, Rotterdam: 1,973,000 cubic metres capacity for crude oils and petroleum product; access by sea, river and pipelines; draught sea berths 68'.

Paktank International BV

Blaak 333, 3011 GB Rotterdam, The Netherlands
PO Box 863, 3000 AW Rotterdam, The Netherlands
Tel: **+31 010 400 2380** *Telex:* **22163** *Fax:* **+31 010 213 0062**

Through its range of operating companies, Paktank, a wholly owned subsidiary of Royal Pakhoed, provides worldwide storage capacity of approximately 16 million cubic metres (100 million barrels, including the share of joint venture partners), handling millions of tonnes of oil and chemicals each year.

Paktank International BV operates bulk liquid terminals in Scandinavia, Estonia, Germany, Tunisia, Singapore, Thailand, China and Pakistan (start up 3Q 1997) for crude oil, petroleum products and chemicals.

Sweden, Gothenburg: 75,000 cubic metres capacity for petroleum product and chemicals; access by sea, rail, road and pipeline; draught sea berths 36' for petroleum products and 26'1 for chemicals.

Gothenburg: Cleaning stations for tank containers.

Södertälje: 118,000 cubic metres capacity for petroleum product, chemicals and bitumen; access by sea, rail and road; draught sea berths 32'8 (present channel approach 29'5).

Malmö: 24,000 cubic metres capacity for petroleum product, chemicals and bitumen; access by sea, rail and road; draught sea berths 37'7".

Stenungsund: Cleaning stations for tank containers.

Estonia, Tallinn: 196,000 cubic metres for petrolum product; access by sea, road and rail; draught sea berths 33'.

Germany, Hamburg: 427,000 cubic metres for petroleum product; access by sea, river, road, rail and pipeline; pipeline connected to neighbouring terminals and refinery; draught sea berths 43'.

Tunisia, La Skhira: 302,000 cubic metres for petroleum product; access by sea; draught sea berths 47'6".

Propetrol

Head Office: 65 Quai Jacoutot, BP 13, 67015 Strasbourg Cedex, France
Tel: **+33 388 45 90 10** *Telex:* **880078** *Fax:* **+33 388 45 90 20** and **+33 388 45 90 30**

Contact: Mr E. Elkouby (Directeur Commercial).

Propetrol, a subsidiary of the Petrofrance group of companies, is an independent petroleum and chemical storage company with terminals in:

Strasbourg: Village Neuf (near Basle), Gergy (near Chalon-sur-Saône), Villeneuve-La-Garenne (8-km north of Paris) and Salaise-sur-Sanne (southern end of the Rhône's chemical corridor).

Together these terminals represent a total storage capacity of about 200,000 cubic metres of bulk petroleum products, 60,000 cubic metres

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of bulk liquid chemicals and petrochemicals and over 6,000 square metres of warehousing for the storage of drummed and packaged chemicals.

All terminals are located on major waterways: Rhine, Saône and Seine Rivers, with complete rail and motorway access.

As regards the Salaise-sur-Sanne Terminal, the first units, comprising five mild and stainless steel tanks ranging in capacity from 365 to 4,080 cubic metres, entered service in March 1996. It is anticipated that a second development will eventually be undertaken involving the addition of a further 6,400 cubic metres in six tanks sized between 650 and 1,470 cubic metres.

Services available: tank-truck loading/unloading, heated and insulated tanks and pipes, tanks equipped with recirculating systems, tanks equipped with innerfloating screens, inert gas blanketing (nitrogen), petroleum product dyeing, blending of oils and fuels, heat supply, tank-truck weighing, bunkering of barges with tank-trucks and customs services.

Petroleum Review regrets that the details for Propetrol (above) have not been updated from the 1996 Bulk Storage Survey as we have been unable to elicit a response from the company.

Pusback u.Morgenstern Petrotank

Neutrale Tanklager-GMBH. KG, Barkhausenstraße. 35-43 D-27568 Bremerhaven, Germany.
Tel: **+49 471 9 46900** *Fax:* **+49 471 9 4690-90**

Petrotank is an independent company in northern Germany, which owns and operates storage installations at Bremen, Bremerhaven, Nordenham-Blexen, Oldenburg (river Weser), Hannover, Hildesheim, Braunschweig (Mittelland-Kanal) and Trier (river Mosel). Total capacity is about 199,000 cubic metres. Seagoing vessels are possible at:
Nordenham-Blexen: draught maximum 32ft, length overall 170m.
Bremen: draught maximum 31ft, length overall 150 metres.
There are barge, rail and truck facilities available in the other terminals.
Storage of heavy fuels, gas oil, urea and other liquid products.

New temperature controlled chemical storage facilities at Simon's Immingham West terminal

Ross Chemical & Storage Co LTD

Grange Dock, Grangemouth, Scotland FK3 8UD, UK
Tel: **+44 (0)1324 474774** *Fax:* **+44 (0)1324 485476**

Grange Dock, Grangemouth: Total capacity of 94,500 cubic metres with 60 tanks ranging from 800 to 2,650 cubic metres for fuel oils, motor spirits, petrochemicals, aviation fuel and molasses. Served by a common user jetty with mild and stainless steel jetty lines. The jetty is capable of handling ships up to 20,000 tonnes dwt. Distribution by road from both top and bottom loading racks.

Simon Storage Group LTD

Priory House, 60 Station Road, Redhill, Surrey RH1 1PH, UK
Tel: **+44 (0)1737 778108** *Telex:* **58218 SSSTOR G**
Fax: **+44 (0)1737 778112**

Simon Storage manages storage investments in the UK and Eire for Simon Group plc. With the exception of the Seal Sands terminal these are in joint venture with Koninklijke Van Ommeren NV.
Simon Management: Simon Storage also provides comprehensive facilities management services for the oil industry including aviation into plane services, terminal, oil and gas pipeline management, and onshore oilfield operation.

Cumbria Terminal: *Prince of Wales Dock, Workington, Cumbria*
Tel: **+44 (0)1900 605151** *Telex:* **64331 CSTORR G**
Fax: **+44 (0)1900) 67986**

31,581 cubic metres for petroleum products and chemical storage. Transport by road, rail and sea. Ships Agency: Workington – can handle 10,000 tonnes dwt vessels and provides excellent port facilities for deliveries to or from north-west England and southern Scotland.

Immingham Terminals: *Immingham Docks, Nr. Grimsby, South Humberside*
West: Tel: **+44 (0)1469 572615** *Telex:* **52291 ISCOL G**
Fax: **+44 (0)1469) 577019**
East: Tel: **+44 (0)1469 571241** *Telex:* **527931 ISCEA G**
Fax: **+44 (0)1469 41012**

Simon Storage operates two installations at Immingham Dock (East and West). More than 300 tanks with a total capacity of 570,000 cubic metres, making it the largest independent bulk storage terminal in the UK. Included in this figure are pressure storage for gases, stainless steel, lined, lagged and steam heated tanks. More than 60 jetty lines, including six stainless steel, provide for excellent segregation of grades. Use is made of two jetties: Eastern and Western. The terminal is connected to the Humber refineries and chemical plants by pipelines. The jetties have 35ft draught and can accommodate up to 35,000 tonnes dwt tankers, coasters or barges. Transport by road, rail, sea and pipeline. The company has land available for expansion to meet customers' special requirements at Immingham. New tankage has recently being completed together with new road loading facilities designed to meet current and future volatile organic compounds legislation.

Seal Sands Terminal: *Seal Sands, Middlesbrough, Cleveland, TS2 1UB UK.*
Tel: **+44 (0)1642 546775** *Telex:* **58218 SSTOR G** *Fax:* **+44 (0)1642 546076**
Over 100 tanks with a total capacity of 196,400 cubic metres for petroleum products, chemicals including molten sulfur, vinyl chloride monomer and LPGs and a wide range of edible or specialist products. Two jetties, one taking vessels up to 30,000 tonnes dwt. The terminal is connected to local chemical plants by pipeline. Transport by road, rail and sea. Block trains handled. Two new bottom loading facilities have been constructed for petroleum handling with further tankage planned.

Shannon Terminal: *Foynes Harbour, Foynes, Co. Limerick, Eire*
Tel: **+353 69 65506** *Fax:* **+353 69 65601**
One installation. 14,000 cubic metres for petroleum and chemical products on the River Shannon. The jetty can accommodate 20,000 tonne tankers and facilities are included for the loading to road tank wagons and the supply of product to barges at the jetty. Land available for expansion of the terminal.

Tyne Terminal: *Northumberland Dock, North Shields, Tyne and Wear, NE29 6DY*
Tel: **+44 (0)191 296 0999** *Telex:* **53180 VELVA G.** *Fax:* **+44 (0)191 258 6996**
Total capacity 54,704 cubic metres. Fifty mild steel tanks, ranging in capacity from 300 to 8,600 cubic metres for chemicals, gasolines and oils. Blending facilities. Many tanks are cooled. Ethanol bonded storage available. Some tanks are coated with epoxy or phenolic resin-based paints. Additional land is available for further development and construction to suit particular client requirements. Access by sea and road. Three berths at North Shields provide for vessels up to 10 metres draught. There is rapid access to major road networks for road tankers. Licences to handle chemical wastes. New tankage under construction.

Tanklager–Gesellschaft Mannheim GMBH

Essener Str 64, D-68219 Mannheim, PO Box 81 04 06, D-68204 Mannheim, Germany
Tel: **+49 621 89 98 5** *Fax:* **+49 621 80 14 17**
The Tanklager-Gesellschaft Hoyer, Mannheim, was founded in 1959 and operates large-scale, modern, independent tank depots at Mannheim-Rheinau and at Mannheim-Handelshafen.
Mannheim, the second largest river port in Europe, lies in the heart of Germany – ideally situated for inland tank storage. Apart from the Rhein-Main area in south Germany, Mannheim allows economical access to eastern France and north Switzerland and since the opening of the Rhein-Main-Donau-Kanal also to the Donau and south-eastern Europe.

Both the tank storage depots have access to waterways, rail terminals and the motorway network.

The tank storage depot at Mannheim-Rheinau has a total of 230,000 cubic metres tank space, and the storage depot at Mannheim-Handelshafen has over 78,000 cubic metres. The tank space of both of these can be extended by a further 50 to 80,000 cubic metres.

The capacity of the individual tanks is between 50 and 22,000 cubic metres.

Modern cargo handling area with 8,000 square metres storage space at Mannheim-Handelshafen are particularly suitable for the storage and transhipment of bulk and intermediate bulk container packed chemicals and other goods. Large open-plan storage areas with ramp access are available for the storage of drums.

All tanks are equipped with a separate pipeline system, which ensures the independent treatment of each product to a high standard. Besides black steel tanks, the TLG storage depots at Mannheim-Rheinau and at Mannheim-Handelshafen can also offer stainless steel tanks with a capacity of 10,500 cubic metres, tanks with special cladding, insulation and facilities for nitrogen supply.

In addition to expert storage of a wide variety of products, such as petrol, chemicals and solvents, high inflammable products, gasoline, aromatics, industrial alcohols, glycols, plasticizers, additives, acrylate, detergent products, vegetable oils, organic acids, resin dispersions, TLG offers all other services connected with its handling and transportation: customs clearance, quality control, weight control, tank checking and drum filling.

Delivery and despatch can be made by ship, rail or road. TLG offers direct transhipment by ship/tank car as well as a complete rail service also for hazardous, poisonous and toxic commodities.

Ever since the opening of the storage depots, special attention has been paid to safety aspects. The most modern facilities guarantee swift and safe transhipment.

The years of experience which the TLG team have in handling a variety of products, together with modern technology, ensures safety – safety for the products and safety for the environment.

Well trained staff deal with even the most unusual problems in a professional manner.

Tees Storage Company LTD

Seal Sands, Middlesbrough, Cleveland TS2 1UA, UK
Tel: **+44 (0)1642 546767** *Telex:* **58477** *Fax:* **+44 (0)1642 546222**
Jointly owned by Royal Pakhoed NV and GATX Corporation. Operates a terminal at Seal Sands.

150 tanks from 55 to 8,500 cubic metres, with a total capacity of 230,000 cubic metres. Mild steel and stainless steel coated for petroleum and chemicals. One sphere of 6,650 cubic metres for vinyl chloride monomer. Road, sea and pipelines to neighbouring plants. Provision for rail. Drumming facilities. Three jetties for ships up to 40,000 dwt. Maximum length 760ft, maximum draught 36ft. 57 docklines (36 stainless steel).

Terminales Portuarias SA

Muelle de Inflamables, s/n, 08039 Barcelona, Spain
Tel: **+34 3 223 52 02/223 52 22** *Fax:* **+34 3 223 45 79**
TEPSA is a joint venture with equal shares held by GATX Terminals Corporation and Petrofrance of Paris. Owns and operates liquid bulk chemical terminals in four major Spanish ports: Barcelona, Tarragona, Valencia and Bilbao.

Barcelona: 220 tanks with a total capacity of 198,362 cubic metres, from 50 to 15,430 cubic metres in size, for chemical products, oils, acids and petroleum product. There are four jetties (draught 39 ft). Access is by sea, rail and road. Services available: mild steel, stainless steel and coated tankage, tanks with internal floating screen, storage, loading, unloading of vessels, tank trucks and rail cars; weighing, drumming, transhipment facilities, refrigerating, nitrogen blanketing, blending and warehousing. Heating possibilities are steam with water and with oil. Tanks for chemical products are equipped with dedicated product lines and pumps.

Tarragona: 30 tanks with a total capacity of 28,280 cubic metres from 650 to 1,305 cubic metres in size for chemical products, acids, oils and others (sosa oil, methanol, fertilizers). There are two jetties (draught 41ft). Access is by sea, rail and road. Services available: mild steel, stainless steel and coated tankage, storage, loading and unloading of vessels, tank-trucks and rail-cars, weighing and nitrogen blanketing. Heating possibilities are steam with warm water. Tanks for chemical products are equipped with dedicated product lines and pumps.

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Valencia: 24 tanks (dedicated pumps and lines for each tank) with a total capacity of 36,765 cubic metres from 305 to 3,050 cubic metres in size, for chemical products, petroleum products, nitrogen fertilizers and oils. There is one jetty (draught 39ft). Access is by sea and road. Services available: mild steel tanks and some with internal floating screen, storage, loading and unloading of vessels and tank trucks, weighing, product heating and nitrogen blanketing. Tanks for chemical products are equipped with dedicated product-lines and pumps.

Bilbao: 41 tanks (dedicated pumps and lines for each tank) with a total capacity of 49,840 cubic metres from 460 to 5,650 cubic metres in size, for chemical products, petroleum products, acids and others. There are two jetties (draught 52ft). Access is by sea and road. Services available: storage, loading and unloading of vessels and tank-trucks, weighing and product heating and nitrogen blanketing. Tanks for chemical products are equipped with dedicated product-lines and pumps.

TDG Pinnacle

Choats Road, Dagenham, Essex RM9 6PU, UK
Tel: **+44 (0)181 593 7211** *Fax:* **+44 (0)181 593 1632**
Owned by Transport Development Group plc (TDG) and formerly known as London & Coastal Oil Wharves Ltd.
Dagenham terminal: Situated between London and Dartford River Crossing. The nearest major privately owned storage terminal on the Thames to London and has direct access to the M25/M11/M1/M20/M2 road networks. The terminal operates 236 tanks with a total capacity of 115,000 cubic metres and these include mild, stainless steel and epoxy-lined tanks, suitable for storage of all chemicals, edible oils, lube oil and pharmaceutical products. The site is operated 24-hours a day at no extra charge.

Jetty facilities include 42 segregated jetty lines (pigged stainless and mild steel), and berthing facilities for vessels of up to 228 metres length overall and 40,000 tonnes dry weight with 10 metres of water at low tide.

Blending facilities for lubes, anti-freeze and other products are available and a recent investment in a computerized drumming facility guarantees containers are drummed off overnight.

The terminal has a modern workshop, weighbridge, radio communications and fully computerized stock accounting.

The site is certified to BS EN ISO 9002 and has its own NAMAS accredited laboratory which offers independent ASTM, IP and BSI standards of testing for petroleum, chemical and water products.

Van Ommeren tank terminal Europoort at the Port of Rotterdam with the deep sea tanker *Port Arthur*

United Storage

Athel House, 167 Regent Road, Liverpool L20 8DD, UK
Tel: **+44 (0)151 933 1010** *Fax:* **+44 (0)151) 933 7434**
United Storage as part of the UM Group within Tate & Lyle Plc, operates eight terminals in the UK and also runs its own fleet of bulk liquid tankers under the name of Transtore. All terminals can be supplied by sea along short piggable docklines.

Liverpool: Three terminals: two for the storage of vegetable oils and molasses with access to the deep water of the Mersey estuary. One for the storage of chemicals and petroleum products with deep-water access. Total capacity – 144,000 cubic metres, tanks ranging in capacity from 120 cubic metres to 13,200 cubic metres.

Birkenhead: Two terminals: one for the storage and processing of vegetable oils and fats. Alongside this terminal the processing division offers the facility to separate, filter and acid refine vegetable oils and fats for the food industry. One terminal for the storage of chemicals, lube oils/additives. Total capacity: 144,000 cubic metres, tanks ranging in capacity from 50 cubic metres to 10,000 cubic metres.

Hull: Two terminals: one for the storage of vegetable oils and molasses; another for lube oils/additives, chemicals and low-flash products. Batch and in-line blending facilities are also available. Total capacity: 50,000 cubic metres, tanks ranging in capacity from 65 cubic metres to 9,800 cubic metres.

London: One terminal at Silvertown on the Thames for the storage of vegetable oils, chemicals and lube oils. Total capacity 9,600 cubic metres, all tanks 640 cubic metres.

Van Ommeren

Head Office: Westerlaan 10, 3016 CK Rotterdam, The Netherlands
Tel: **+31 10 464 2430** Fax: **+31 10 464 2819**
Van Ommeren is a Dutch company that provides high-quality logistical services throughout the world in the fields of tank storage, tanker shipping and transport. Van Ommeren operates 51 terminals, in 22 countries, with a total capacity of approximately 15 million cubic metres.

Belgium
Antwerp, Gamatex: Gamatex is a 50/50 joint venture between GATX Terminals and Van Ommeren. This ISO 9002 certified terminal has 148

tanks with a total capacity of 486,100 cubic metres suitable for storage of petroleum products, chemicals and pressured gases.
Access by: sea (4 berths, draught 13.5 metres), river (5 berths), rail, road and pipeline.
Service offered: blending, heating, chilling, lab on site, dedicated systems, weighing, nitrogen blanketing, drumming and 10,500 cubic metres stainless steel tankage available.

France

Fos-sur-Mer, Dèpots Pètroliers de Fos (DPF): This company, in which Van Ommeren has a share, operates one terminal in France at Fos-sur-Mer. The terminal has 40 tanks with a total capacity of 780,000 cubic metres suitable for storage of petroleum products and chemicals.
Access by: sea (5 berths, draught 24 metres), river (1 berth), rail, road and pipeline.
Service offered: blending, heating, dedicated systems, weighing and nitrogen blanketing.

Germany

Hamburg, Van Ommeren Tank Terminal Hamburg: This terminal located at the port of Hamburg has 300 tanks with a total capacity of 712,000 cubic metres and is suitable for storage of petroleum products, oleochemicals, vegetable oils, molasses, liquid fertilizers and latex.
Access by: sea (4 berths, draught 13 metres), river (8 berth), road, rail and pipeline.
Service offered: blending, heating, dedicated systems, weighing, nitrogen blanketing and drumming.

Netherlands

Port of Rotterdam, Van Ommeren Tank Terminal Botlek: This ISO 9002 certified terminal has 318 tanks with a total capacity of 940,000 cubic metres suitable for storage of chemicals and petroleum products.
Access by: sea (6 berths, draught 12.5 metres), river (7 berths), rail, road and pipeline.
Service offered: blending, heating, lab on site, dedicated systems, weighing, nitrogen blanketing drumming and 16,500 cubic metres stainless steel tankage available.

Van Ommeren Tank Terminal Vlaardingen: This ISO 9002 certified terminal has 400 tanks with a total capacity of 430,000 cubic metres suitable for storage of vegetable oils, oleochemicals, molasses.
Access by: sea (3 berths, draught 13 metres), river (11 berths), rail and road.
Service offered: heating, independent lab on site, dedicated systems, weighing, nitrogen blanketing, drumming, 10,000 cubic metres stainless steel tankage available, customs facilities, kosher certification, facilities for transhipment of low-flashpoint products.

Van Ommeren Tank Terminal Europoort: This ISO 9002 certified terminal has 43 tanks with a total capacity of 910,000 cubic metres suitable for storage of petroleum products and chemicals.
Access by: sea (3 berths, draught 21 metres), river (6 berths) and pipeline.
Service offered: blending (eg gasoline), heating, lab on site, dedicated systems and nitrogen blanketing.

Spain

Tarragona, Terquimsa: This terminal operated by Terquimsa SA (a 50/50 joint venture joint between Compania Logistica Hidrocarburos and Van Ommeren) is located at the port of Tarragona.
The terminal has 105 tanks with a total capacity of 160,000 cubic metres suitable for storage of petroleum products, chemicals, vegetable oils and fertilizers. The terminal is ISO 9002 certified.
Access by: sea (3 berths, draught 12.5 metres), rail, road and pipeline.
Service offered: blending, heating, chilling, dedicated systems, weighing, nitrogen blanketing and drumming. Marpol facilities, transhipping facilities, open 24 hours, in-bond facilities

Barcelona, Van Ommeren Tank Terminal Barcelona: This terminal which is also operated by Terquimsa SA is located at the Port of Barcelona. The terminal has 63 tanks with a total capacity of 35,000 cubic metres and is suitable for storage of petroleum products, chemicals, vegetable oils, asphalt and lube oils.
Access by: sea (3 berths, draught 12 metres) road and pipeline.
Service offered: blending, heating, dedicated systems, weighing, nitrogen blanketing.
Transhipping facilities, open 24 hours, in-bond facilities

Sweden

Gothenburg: 113 tanks from 50 to 25,000 cubic metres with a total capacity of 541,000 cubic metres for petrol, gas oil, light and heavy fuel oils, bunkering oils, lubricating oils, chemicals, vegetable oils etc, blending and conditioning, as well as the storage of international oil consignments in transit. Access by sea, road and pipeline. Five tanker berths. Can handle vessels up to 280 metres in length with a draught of up to 13 metres. Network of pipes is connected to the pipeline system of the refineries and the oil companies.

Gävle: 24 tanks from 25 to 35,000 cubic metres with a total capacity of 196,000 cubic metres for petrol, gas oil, light and heavy fuels, bunker oil, lubricating oils, chemicals, vegetable oils, etc, blending and conditioning, as well as the storage of international oil consignments in transit. Access by sea, road and pipeline. Can handle vessels up to 200 metres in length with a draught up to 10.4 metres.

Helsingborg: 12 tanks from 50 to 10,000 cubic metres with a total capacity of 34,000 cubic metres for petrol, gas oil and vegetable oils etc. Access by sea, road and pipeline. Can handle vessels up to 200 metres in length with a draught up to 10.4 metres.

Norrköping: 36 tanks from 30 to 3,000 cubic metres with a total capacity of 14,000 cubic metres for chemicals, petrol, gas oil etc. Access by sea, road and pipeline. Can handle vessels up to 190 metres in length with a draught up to 8.4 metres.

Trelleborg: 9 tanks from 20 to 3,500 cubic metres with a total capacity of 12,000 cubic metres for gas oil, fuel oil, lubricating oils, chemicals, molasses etc. Access by sea and road. Can handle vessels up to 175 metres in length with a draught up to 7 metres.

Switzerland

Birsfelden, Van Ommeren (Schweiz) AG: operates one terminal in Birsfelden. This terminal has 63 tanks with a total capacity of 347,000 cubic metres suitable for storage of petroleum products.
Access by: river (5 berths) rail, and road.
Service offered: heating, dedicated systems.

United Kingdom

Van Ommeren Tank Terminal London: This ISO 9002 certified terminal on the river Thames has 125 tanks with a total capacity of 349,000 cubic metres suitable for storage of petroleum products, chemicals and vegetable oils.
Access by: sea (3 berths, draught 11 metres) and road.
Service offered: blending, heating, dedicated systems, weighing, nitrogen blanketing, drumming, advanced computer systems for stock control and vehicle loading, HM customs & Excise bonded storage.

Van Ommeren Tank Terminal Purfleet: This terminal, which is also located on the river Thames, has 120 tanks with a total capacity of

BULK STORAGE SURVEY

270,000 cubic metres suitable for storage of petroleum products, chemicals, vegetable oils and gases.
Access by: sea (7 berths, draught 11 metres), rail and road.
Service offered: blending, drumming, Marpol facilities.

Van Ommeren Tank Terminal Barry: This ISO 9002 certified terminal is located on the Bristol Channel at the west coast of the UK. The terminal has 80 tanks with a total capacity of 112,000 cubic metres suitable for storage of petroleum products, chemicals, vegetable oils and fertilizer solutions. There are plans to expand this terminal with 42,000 cubic metres which will be operational in 1998.
Access by: sea (3 berths, draught 9 metres) and road.
Service offered: blending, heating, drumming.

Van Ommeren Tank Terminal Ipswich: This ISO 9002 certified terminal located on the coast of East Anglia has 76 tanks with a total capacity of 89,000 cubic metres suitable for storage of petroleum products, chemicals, vegetable oils and fertilizer solutions.
Access by: sea (5 berths, draught 8 metres) and road.
Service offered: heating, drumming.

VOTOB

Vereniging van Onafhankelijke Tankopslagbedrijven, Vlietweg 16, Leidschendam. Postal address: PO Box 443, 2260 AK Leidschendam, The Netherlands.
Tel: **+31 70 337 8750.** *Fax:* **+31 70 320 3903.**
VOTOB embraces four member companies in the Netherlands, active in the storage of bulk liquid commodities and products. Together the members offer 14 installations in the ports of Amsterdam, Dordrecht and Rotterdam.

VOTOB is active at the interface with national government and with other professional associations with relevant similar interests. VOTOB is an active member of FETSA (Brussels) the European umbrella organization which consults with government on an international scale: EU-Commission, IMO and similar bodies.

VTG-Paktank Tanklager Hamburg GMBH

Blumesand 38, 21107 Hamburg, Germany
Tel: **+49 40 75 60 34 51** *Fax:* **+49 40 75 60 34 89**
Hohe Schaar (Hamburg): 427,000 cubic metres; sea, road, rail; 48ft; crude oils, petroleum products, chemicals.

VTG Vereinigte Tanklager und Transportmittel GMBH

Head Office: Nagelsweg 34, D-20097 Hamburg, Germany
Tel: **+49 40 23 54 0** *Fax:* **+49 40 23 54 27 00** *Telex:* **2170080 VT D**
VTG, a member of the Preussag Group, is one of the largest independent tank storage companies in Europe. VTG operates large modern tank installations at seaports and inland with a total capacity of around 4 million cubic metres. Storage facilities are complemented by 25,000 rail tank wagons, special purpose wagons and tank containers for the transport of petroleum products, chemicals, gases and bulk goods. An inland tank shipping service operates on all major European waterways.

Berlin: 225,000 cubic metres, 85 tanks ranging from 50 to 20,000 cubic metres for all petroleum products, solvents and petrochemicals; access for barges, road and rail tank cars and liner trains.

Cologne: 101,000 cubic metres, tank volumes range from 50 to 25,000 cubic metres.

Duisburg Ölinsel: 270,000 cubic metres, 212 tanks varying in size from 100 to 9,000 cubic metres. Insulated, coiled, coated and aluminium tanks are available and equipped with dedicated pipelines, heating, blending, nitrogen blanketing, vapour-return and dry air ventilation facilities, petroleum products, chemical and petrochemical liquids, liquefied gases and solvents. Distribution by road, rail, barge and pipeline.

Duisburg Parrallel-hafen: 38,000 cubic metres. Tank volumes 15 to 4,500 cubic metres for all petroleum products and chemicals. Access by tank-trucks and barges.

Ebrach: 5,000 cubic metres for storing petroleum products. 12 tanks.

Hanover: 320,000 cubic metres. 22 tanks ranging from 500 to 70,000 cubic metres for crude oil, petroleum products, chemicals and solvents. Access for road and rail tank cars, liner trains and barges; crude oil pipeline.

Hünxe: 900,000 cubic metres (568,000 for A1/332,000 for AIII) for storing petroleum products. 51 tanks ranging from 1,000 to 55,000 cubic metres. Access for road and rail tank cars, barges and pipeline.

Munich: 155,000 cubic metres, ranging from 30 to 45,000 cubic metres for storing petroleum products, chemical and petrochemical liquids and solvents. Blending facilities for gasoline are available. Access by railtank cars and tank-trucks.

Regensburg: 70,000 cubic metres, 60 tanks varying in size from 100 to 9,000 cubic metres. All petroleum products, chemical and petrochemical liquids and solvents. Heating, blending and mixing facilities. Distribution by road, rail and barge. Operation of the BP terminals.

Mainz-Gustavburg: 256,000 cubic metres, 33 tanks ranging from 8 to 40,000 cubic metres for all petroleum products, solvents and petrochemicals. Access by barge, road, rail tank cars, liner trains and pipeline (RMR).

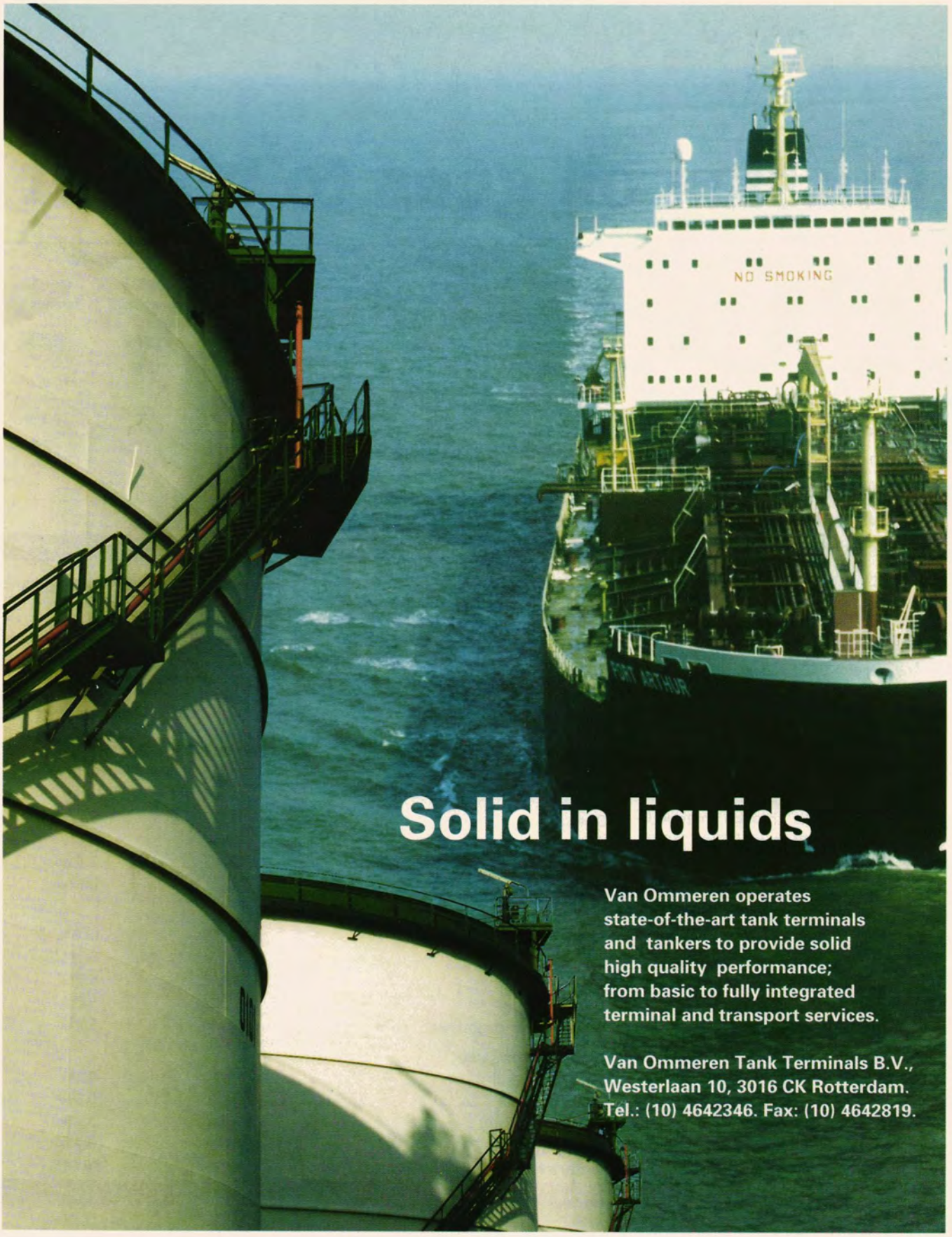
Amsterdam: Comos Tank BV.

Düsseldorf: Omni Tank GmbH.

Hamburg: VTG-Paktank Hamburg GmbH.
Further details of these three companies are given under their separate headings.

Weser-Petrol Seehafentanklager GMBH & CO KG

Cuxhavener Str. 42/44, PO Box 106149, D-28061 Bremen, Germany.
Tel: **+49 421 396 99-0** *Telex:* **+41 246 448 dsd** *Fax:* **+49 421 396 99-79**
Weser-Petrol, part of the Diersch & Schröder group of companies, operates storage installations in Bremen and Nordenham at the river Weser with a total capacity of 180,000 cubic metres. These modern facilities offer every possibility for a comprehensive distribution system for mineral oil products, mainly middle-distillates and molasses. In addition Weser-Petrol operates 50,000 cubic metres storage capacity for middle-distillates in Greifswald and Wismar on the Baltic Sea.



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Van Ommeren Tank Terminals B.V.,
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Transport & Terminals

Russian oil goes to market

By T L Kandelaki and R U Tankayev
InfoTEK-CONSULT

Worldwide production of oil in 1996 was 3.2 billion tonnes. Of this Russia produced 301.68 million tonnes of oil and gas condensate or 9.5 per cent of the world total – retaining its place as the world's third largest producer after Saudi Arabia and the USA.

`zRussia's domestic market for crude can be described as developed and competitive with a market-driven pricing mechanism and well defined sectors. In 1996, 67 per cent of Russia's production was sold at free-market prices (directly or through intermediaries); 16 per cent was transfers within integrated oil companies to their refining facilities; about 14 per cent represented shipments under government orders, repayment of credit against goods and other mandatory non-market shipments; and crude sales under other terms accounted for the remaining 3 per cent.

Russia's oil market

In 1996 total shipments to major consumers amounted to 293.4 million tonnes. Shipments to small consumers, transportation losses and the oil used by oil production companies amounted to 7.3 million tonnes. Russia's oil market is naturally split into three major segments – exports to the 'far abroad' (outside the former Soviet Union), domestic sales and exports to the 'near abroad' (former Soviet republics).

Russian companies sold a total of 170.9 million tonnes of crude to major domestic consumers and the refineries processed nearly 175 million tonnes of oil and gas condensate (including some from Kazakhstan).

In 1996, Russia exported nearly 122.5 million tonnes of oil and gas condensate — 100.2 million tonnes 'far abroad' and 22.3 million tonnes 'near abroad'

Type of sale	Market segment		
	Domestic market	Within former SU	Outside former SU
Free market	63.0%	70.0%	73.9%
Barter deals		12%	
Within integrated companies	27.0%		
On the 'give-and-take' basis		4%	0.1%
Intergovernmental agreements, government needs, repayment of credit against goods	10.0%		23%

Table 1: Types of 1996 oil sales in Russia's various market segments

Transportation route	1,000 tonnes	% of total export
Sea ports		
Novorossiysk	29,989	30.0%
Ventspils	14,258	14.3%
Odessa	8,167	8.2%
Tuapse	4,642	4.6%
Rostok	2,297	2.3%
The Kaliningrad Fishery Port	491	0.5%
Druzhba pipeline		
Germany	13,828	13.8%
Poland	9,171	9.2%
Czech	5,692	5.7%
Slovak	5,203	5.2%
Hungary and Yugoslavia	5,188	5.2%
Other types of sales		
Kolguyev Island	97	0.1%
Sakhalin Island	483	0.5%
Finland (railway)	232	0.2%
Poland (railway)	219	0.2%
Export to the 'far abroad', total	99,957	100.00%

Table 2: Russian oil exports outside the former Soviet Union in 1996

Oil buyer	Oil seller	1,000 tonnes	% of total crude input
LUKoil's refineries	LUKoil	18,546.30	96.1%
YUKOS's refineries	YUKOS	14,405.30	80.2%
SIDANCO's refineries	SIDANCO	5,883.40	33.5%
Sibneft-Omsky refinery	Sibneft	8,771.90	55.8%
Surgutneftegas-KINEF	Surgutneftegas	11,723.20	76.7%
Slavneft's refineries	Slavneft-Megionneftgas	3,434.90	44.9%
VOC-Achinsky refinery	VOC-Tomskneft	4,265.30	73.6%
Tatneftekhiminvest-Nizhenkamshneftekhim	Tatneftekhiminvest	4,986.50	99.6%
Rosneft's refineries	Rosneft	1,231.70	27.5%
ONACO-Orsknefteorgsintez	ONACO-Orenburgneft	777.60	18.0%
TOC Ryazansky refinery	Tyumen Oil Company	2,517.70	58.9%
KomiTEK-Ukhtinsky	KomiTEK-Komineft	2,918.50	76.5%
Total crude inputs for owned sources		**84,188.3**	**65.9%**
Total crude inputs		**127,777**	**100%**

Table 3: Oil shipments to Russian refineries owned by integrated oil companies

(refineries in Belarus, Ukraine, Lithuania and Kazakhstan). A significant portion of Russian crude exported to Kazakhstan was on an exchange basis. Hence, net oil exports to former Soviet republics in 1996 actually amounted to nearly 19 million tonnes.

In all segments of Russia's oil market most of the crude is sold at free-market prices (**Table 1**). However, barter deals and exports on an exchange basis are typical of the 'near abroad' market. Exports through government contracts (significantly up in 1997) are characteristic of sales to the 'far abroad'.

Exports outside the former Soviet Union remain the most attractive to oil sellers. Crude is sold at world prices; payments are rarely delayed and there are few concerns about oversupply. The major issue is the limited capacity at export terminals and the additional charges which may render deals uneconomic.

Exports to the 'far abroad' and the number of companies involved are growing rapidly. Exports reached 150.3 per cent of the 1992 level – the first year of Russian reforms. By 1996 Russia's total earnings from oil exports approached $13 billion (**Table 2**).

Russian crude is predominantly exported through the Novorossiysk and Ventspils loading terminals, and through the Druzhba pipeline to Germany and Poland.

In contrast to exports, domestic oil sales were 30 per cent down on the 1992 levels in 1996. More recently domestic demand for crude has stabilized or even increased.

Domestic consumption of Russian-produced petroleum products is declining faster than their production. In 1996, production of gasoline declined by 5.3 per cent compared with 1995, while total domestic sales of that product declined by 7.7 per cent. This has led to overall growth in gasoline exports despite localized imports.

Destination	Shipped (1,000 tonnes)	Share of Russian exports %
Belarus (CIS)	10,123	44.9%
Ukraine (CIS)	7,320	32.5%
Kazakhstan (CIS) (mutual shipments)	3,170	14.1%
Lithuania (Baltic)	1,944	8.6%
Export total 22,557	***100%***	

Table 4: Russia's oil exports to the 'near abroad' in 1996

Russian refining

Nineteen of Russia's refineries (not counting Chechnya) are owned by integrated companies and have a combined capacity of 229 million tonnes a year or 75 per cent of the Russian total. In 1996, these processed 127.8 million tonnes of crude, an average utilisation rate of 55.6 per cent.

The degree to which the integrated companies supply their own refineries varies quite widely and determines the refinery's requirement to buy oil and gas condensate on the free market (**Table 3**).

Domestic sales of petroleum products currently generate fairly good earnings and localised imports from western Europe and southeast Asia are becoming commercially viable.

Six further refineries independent of the integrated oil companies operating in Russia have a total crude capacity of 76 million tonnes a year. In 1996, these refineries processed 43 million tonnes of crude, an average utilization rate of 56.4 per cent.

The final refining category includes Gazprom's gas processing facilities which have significant crude and condensate refining capacities. The most important of these is the Astrakhansky gas processing plant. Petroleum products produced by Gazprom make up a significant portion of domestic supply. In addition to Gazprom's facilities there are small refineries owned by small integrated companies like Norilskgazprom, Yakutgazprom and Petrosakh JV. As these operate within integrated companies they buy no crude on the free market.

The least financially attractive part of Russia's oil market is exports to the 'near abroad' (**Table 4**). In 1996, these amounted to less than a third of 1992

levels, with Belarus and Ukraine remaining the largest markets. However, the terms for oil shipments to Kazakhstan and Belarus are becoming more like those for domestic sales as these markets become more integrated. In contrast, the terms for oil shipments to Ukraine, and Lithuania, are becoming closer to those of exports to the 'far abroad'.

In the increasingly competitive Russian oil market, companies have a variety of strategies to maximise returns. One closely followed indicator is the percentage of their production the major companies export to the 'far abroad' (**Table 5**).

Increasing the proportion of exports to total production is not the only way to increase revenues. LUKoil exports crude produced by other companies to the 'far abroad' to increase its earnings.

Another area of competition among Russia's oil companies is the battle for control over independent refineries and the access to markets this gives. The volumes of crude supplied to independent refineries by the various producers in 1996 is shown in **Table 6**.

Companies	Export outside FSU	
	Shipped (1,000 tonnes)	% of total sales
Slavneft Oil and Gas Company	6217.2	49%
Rosneft Oil Company	5483.2	48%
ONACO	3103.1	46%
Tatneft	10263.8	43%
Vostochny Oil Company	4445.7	43%
Surgutneftegas Oil Company	13407.0	42%
KomiTEK Oil Company	2147.9	39%
Tyumen Oil Company	7202.0	36%
SIDANCO	6791.4	34%
LUKoil Oil Company	14727.4	31%
YUKOS Oil Company	9798.6	31%
Sibneft Oil Company	4685.5	31%
GAZPROM	1256.1	25%
Bashneft Stock Oil Company	2951.3	18%

Table 5: Oil export to the 'far abroad' in 1996 by major Russian integrated companies

Transportation costs

Russia's oil production regions are generally remote from their main markets. Only the production companies operating in Timan-Pechora province, Sakhalin, the Krasnodarsky and Stavropolsky territories and the Kaliningrad region are close to international borders. In 1996, oil production from these areas amounted to less than 7 per cent of the total, while oil exports from Russia exceeded 40 per cent of production. In 1996, 67.5 per cent of Russian crude was produced in Western Siberia, while demand in the area was just 12 per cent of Russian domestic demand or 7 per cent of total oil sales. In contrast, most crude produced in the Volgao-Urals region can be shipped to local refineries.

Over half of Russian crude is sold into markets well away from production facilities. Transportation costs vary considerably but are a critical component in determining the economic viability of 50 per cent of Russian production.

Transportation costs in exporting crude to the 'far abroad' through Novorossiysk range from $5.7/tonne (North Caucasus region) to $28.5/tonne (Western Siberia). Through Odessa, from $12.1 to $25.3/tonne; through Ventspils, from $14.2 to $27/tonne; through Budkovce (Czech and Slovak) and Feneshlitke (Hungary), from $14.4 to $27.6/tonne; and through the Adamova Zastava, from $11.3 to $24.5/tonne depending on the origin of the crude.

The difference in prices charged for transit through the Druzhba pipeline is due to the route to Budkovce and Feneshlitke route running across two countries, while the route to the Adamova Zastava (to supply Poland and Germany) only crosses Belarus.

Transportation costs incurred in carrying crude to Belarus vary from $5 to

Independent refinery	Main crude suppliers	Shipped (1,000t)	% Share
Bashkirian Petrochemical Company	Bashneft Stock Oil Company	7,503.90	34.4%
	YUKOS	3,382.30	15.5%
	Rosneft	2,087.20	9.6%
	Surgutneftegas	1,907.50	8.7%
	Tyumen Oil Company	1,895.20	8.7%
NORSI-oil	LUKoil	3,431.10	31.6%
	Tatneftekhiminvest	3,287.60	30.3%
	Tyumen Oil Company	1,171.80	10.8%
CFC-Moscow refinery	Tatneftekhiminvest	3,259.70	37.2%
LUKoil	1,854.60	21.1%	
	SIDANCO	1,334.20	15.2%
KrasnodarEcoNeft	Rosneft	834.60	52.8%
	LUKoil	331.60	21.0%

Table 6: Crude suppliers to independent refineries by appropriate producers in 1996

Market segment	Delivery basis	Average monthly price of Russian crude in 1996 (% of NWE level)	
Domestic market	Ex-refinery	83.4	92.1
Lithuania	DAF	102.5	110.0
Ukraine	DAF	66.7	115.0
Kazakhstan	DAF	89.0	115.0
Eastern Europe	DAF	84.0	167.9
North Western Europe	FOB	100.0	152.9
Mediterranean	FOB	103.9	158.1

Table 7: 1996 oil price levels in various markets for Russian crude as percentage of North West European levels

$18/tonne; to Ukraine, from $4 to $20/tonne; to Lithuania, from $11.3 to $21.9/tonne; to Kazakhstan, from $8.0 to $12.4/tonne depending on the origin of the crude.

In domestic sales, crude is sold at the well-head and bought at the refinery's terminal, with transportation costs usually paid for by the purchaser.

Transportation costs to refineries in Russia's Central economic region range from $3 to $17/tonne; in Volgo-Vyatsky, from $2 to $15/tonne; in the Northern region, between a few cents and $3/tonne; in the North Western region, between $5 and $17/tonne; in the Urals region, between $0.2 and $14/tonne; in the Povolzhye, between $0.3 and $16/tonne; in the North Caucasian region, between $0.3 and $26/tonne; in the western Siberian region, between $6 and $10/tonne; in the eastern Siberian region, between $4 and $19/tonne; and in the Far Eastern region, between $7 and up to $75/tonne.

Transportation costs in Russia may account for up to 50 per cent of the price of crude at the refinery.

Price of Russian oil

Around 67.5 per cent of all crude produced in Russia is now sold at market prices (1996). However, there are different price ranges in the various market segments. The range of prices in 1996 in the main markets are shown as a percentage of North West European prices (**Table 7**).

In 1996, the price of the western Siberian crude (at the well-head) was $74 to $81/tonne, while levels in European Russia were $4 to $5 higher, largely on the difference in transportation costs. Average buying price paid by refineries (including transportation costs) ranged from $83 to $92/tonne.

Crude sales to the 'near abroad' were made on DAF price basis at the Russian border. Sales to Belarus and Kazakhstan – members of the customs union with Russia – were made at prices close to domestic sales prices, with adjustments for transportation costs. Export prices of crude to Lithuania and Ukraine were tied to the world market price.

Crude export through sea ports is based on either long-term contracts with buyers (the so-called umbrella contracts) or individual contracts which identify the amount of crude that may be offered to the buyer under the contract and the price formula on which the crude will be sold. The price formula is usually based on Dated Brent as the marker grade. The contract provides for the terms of delivery, normally FOB, at the offloading terminal.

Most cargoes go to the spot market and are offered for immediate payment and delivery. Spot market deals would normally be made under CIF terms and any difference between the Brent and Urals quotes would reflect the difference between the long-term and spot contracts.

Crude exports to former Soviet republics are gradually declining. In the future, Belarus and Kazakhstan are likely to be integrated into Russia's domestic market, while Lithuania and Ukraine may become part of the 'far abroad' market.

The only current limitation on the export of Russian crude outside former Soviet republics is the available capacity of existing export terminals. In the next three to five years, new export terminals are expected to be built and Russia's annual oil exports may grow to 125 million tonnes.

Below world prices

The equilibrium price of crude in Russia's domestic market is lower than the world levels. Russia produces enough crude to meet the requirements of domestic refineries and as Russian producers are competing for domestic customers, this tends to lower domestic oil prices. The incentive to supply the domestic market is that wholesale prices of petroleum products are, on average, 1.5 or 2 times world levels with refining margins averaging $50/tonne. However, demand is restricted by the high price levels.

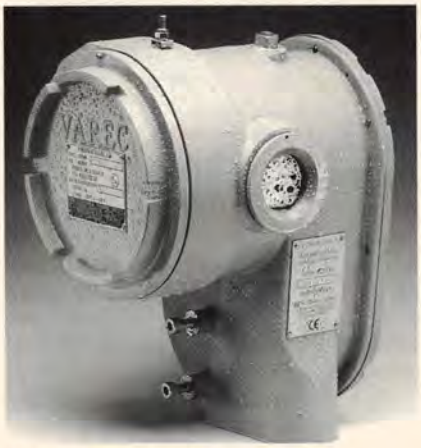
When the economy picks up, Russia's domestic market will become more attractive than export markets and domestic demand for oil will grow significantly.

Typical western Siberian wellhead. Note the absence of a blow-out preventer (BOP) typical of operations in the region.

New float gauge cuts upgrade costs

A new design of float gauge for bulk storage tanks which offers the same level of measurement accuracy provided by more expensive servo or radar gauges has been developed by Whessoe Varec.

Furthermore, the 2046 Advanced Tank Gauge's ±1mm accuracy has been certified by NMI and SIM, the Dutch and French weights and measures agencies. It is believed to be the first time a float gauge has gained such approval, which has extended application possibilities into the demanding custody transfer sector.



Storage tank float gauge

The unit achieves its high level of accuracy – five times that of conventional float gauges – by means of a tape system which is almost free of friction and hysteresis. External temperature readings can be provided by an external sensor.

The gauge has a footprint of just 21 x 22cm, a third of the norm, allowing retrofit on almost any existing float gauge site. This eliminates the need for ground-level mountings as well as floats, anchors, guide wires, etc, and makes upgrading an economic proposition for every type of tank, states the manufacturer.

A liquid crystal display provides readings locally. The gauge may be programmed for metric or imperial units, and innage or ullage. It can also be supplied with dual ports for fault tolerance in high-risk or highly automated environments.

Tall order for lightweight aircraft refuelling rig

Flightline Support, the Oxfordshire-based aviation ground-support equipment company, has unveiled a new lightweight aircraft refuelling rig.

Manufactured from aluminium, the new rig was designed both to meet the latest UK Health & Safety regulations governing the manual handling of equipment and to service all aircraft currently operating in the market, including the new Boeing 777. Traditional rig designs are much heavier and more difficult to handle manually and are too short to service the Boeing 777.

A number of units have already been supplied to British Petroleum, Shell, Conoco and Simon Storage in the UK, as well as to British Airways in Azerbaijan.

Multiple path ultrasonic gas flow-meter

The latest gas flow-meters from Daniel feature multiple ultrasonic paths to ensure a high measurement accuracy and minimum sensitivity to flow profile effects.

Developed for use in transmission systems, large industrial consumer supplies and underground storage sites, as well as for pipeline balance and alternative check metering, the SeniorSonic™ gas flow-meters have been designed to be intrinsically safe. Ultrasonic transducers are set into the side of the pipe being metered, to ensure that there are no obstructions to cleaning pigs or pressure drops. A lack of moving parts reduces the need for regular lubrication and maintenance.

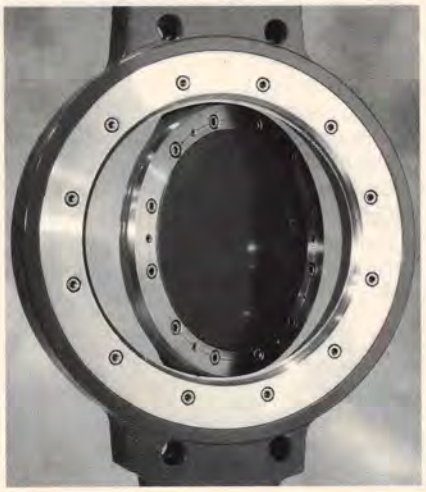
The meters are claimed to be accurate to within ±0.5 per cent.

Elliptical disc valves tackle range of applications

The new Triax range of elliptical disc valves from Reiss Engineering fulfils a wide range of applications in offshore and petrochemical processes with high pressure, high temperature, zero leakage and high frequency operation.

The valves employ a triple offset design that generates an eccentric action in which the seating components contact only at the final point of closure. This gives bi-directional, bubble-tight shut-off with minimal friction which, in turn, improves seal life and minimizes maintenance costs.

Both the stainless steel/graphite laminated seal and metal or PTFE seat rings can be simply replaced to suit different media or process conditions. The valves are capable of operating in temperatures ranging from –240°C to 600°C and a pressure range of vacuum to 160 bar.



Triax butterfly valve

New improved GRP tank access chamber

Fibrelite Composites has adapted the resin transfer moulding (RTM) technology used on its composite access covers to develop a GRP tank access chamber with consistent wall thickness, together with improved rigidity and smoother surfaces than found with more conventionally hand/spray laminated GRP or polyethylene designs.

The new chamber also incorporates an anti-static inner skin, thereby reducing the risk of explosion from igniting vapours.

Fibrelite states that its GRP unit offers better structural performance and is a more cost-effective option than polyethylene equivalents.

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INFORMATION FOR ENERGY GROUP

Visit to The Institute Français du Pétrole

IFEG would like to thank the IFP for hosting a very interesting visit on 26 June. The talk and tour of the IFP Library & Information Division was most enlightening and it was very interesting to see how practical use of new and advanced technologies can be implemented and utilized effectively in a library and information environment.

Thanks are also given to RSAT International Limited for providing taxis to ferry the group around Paris and to SWUK UK Limited who sponsored a delightful evening boat trip up the river Seine.

A wonderful time was had by all who went – despite the rain!

(Anyone interested in joining IFEG should contact Catherine Pope on +44 (0)171 467 7112; e-mail: cp@petroleum.co.uk)

IP units first for petroleum colorimeter

The new Lovibond PFX990/P Petrochemical Tintometer for automatic colour measurement of oils, fuels and waxes is the first electronic instrument to include IP units as specified in IP 17 Method B, according to its manufacturer Tintometer.

The series of 14 standard colours specified in the IP scale is used for grading light coloured products such as refined undyed motor fuel, white spirit or kerosine.

The tintometer's scale shows the IP units alongside other commonly used petrochemical industry colour scales, such as ASTM Colour, Saybolt Colour and Gardner Colour. Sample colour can also be displayed in terms of transmittance, CIE tristimulus values and CIE chromaticity coordinates.

A long sample chamber houses cells up to 6-inches in path length, enabling accurate readings to be taken, without multiplying errors, even with pale coloured samples. A sample heater unit and optional thermal jacket help delay solidification of samples with high melting points.

Petroleum colorimeter

Animated simulation of robotic control

UK Robotics has unveiled the latest addition to its advanced teleoperated controller (ATC) product range which facilitates the control of robots in hazardous environments.

Animator has been created to help train and familiarize users of the ATC equipment more efficiently and cost effectively.

The system presents the user with exactly the same desktop screens and joystick as the ATC, but instead of controlling a real manipulator, a virtual one operates in a simulated working environment. This allows operators to be trained anywhere without the need to practice on productive units and their associated manipulators. In addition, the system's graphical interface allows experienced operators to rehearse actual paths of manipulator movement within specific workcells.

One-stop-shop for service station operators

Schlumberger Retail Petroleum Systems has launched a range of products augmenting its turnkey forecourt capability for service stations.

The products include space-saving multi-dispenser pumps, supported by transaction terminals capable of handling payment technologies based on forthcoming international smart card standards. This opens up access to technologies such as electronic-purses, as well as the new generation of smart loyalty cards.

Designed to optimize investment in building or refurbishing outlets, to extend extra shopping area and services and to meet increasingly stringent environmental regulations governing the fuels retail sector, the new range of products is supported by Schlumberger's computer-aided design facilities and regional project management teams.

Such 'in-depth' resources allow the company to accommodate the trend towards larger-scale contracts being offered by petroleum companies, which often involve upgrading clusters of sites simultaneously to maximize impact and speed of return on investment.

New valve range relieves the pressure

Designed to maximise process efficiency, the Series 400 from Anderson Greenwood is a new range of modulating pilot operated safety relief valves for gas, liquid or multiphase service. It is particularly suited to processes with set pressures between 15 and 1,480 psig and continuous service temperatures between –65°F and 500°F.

Both the non-flowing pilot and main valve can be tightened to as high as 98 per cent of set pressure in order to increase system throughput and allow operation near to the set pressure without valve leakage and subsequent product emissions.

At set pressure, the main valve opens proportionally to the severity of the process upset, thus restricting product release to only that required to keep the system at, or below, the set point. Soft seats not only minimize leakage by ensuring absolute tightness before and after relief cycles, but also extend service life, reducing service and maintenance costs.

The non-flowing pilot minimizes the entrance of dirt and the formation of hydrates in order to ensure efficient valve operation with dirty or wet services. An optional cartridge type pilot filter is also available for extremely dirty applications.

IP
THE INSTITUTE OF PETROLEUM

The Institute of Petroleum's 1998 Annual Dinner

Wednesday 18 February 1998 Grosvenor House, Park Lane, London W1

The 1998 Annual Dinner takes place during the Institute's internationally renowned *IP Week* from 16 to 19 February 1998.

This famous event is the largest in the oil and gas industry calendar and attracts senior industry figures from all over the world.

Only IP Members may apply for tickets and the ticket application form will appear in the October 1997 edition of *Petroleum Review*.

To avoid possible postal delays, non-UK Members should write now, to the address below, for an application form which will be sent to them during September.

Further information regarding the Institute's *IP Week* 1998 will be published in November 1997. To receive this information please apply in writing to:

Pauline Ashby
The Institute of Petroleum
61 New Cavendish Street
London
W1M 8AR, UK

Fax: +44 (0)171 255 1472

IP
THE INSTITUTE OF PETROLEUM

Energy Economics Group

'The Fundamental Impact Competition is having on the Gas Industry'

Monday 20 October, 12.00 to 14.15

Clare Spottiswoode, Director General of Gas Supply, OFGAS

The meeting includes a buffet lunch at the cost of £15.00.

Prior registration is essential. Please write or fax for a registration form, which will be available from the week commencing 8 September.

Contact: Jenny Sandrock, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR, UK
Fax: +44 (0)171 255 1472

IP
THE INSTITUTE OF PETROLEUM

Oil Spills Working Group

'Oil Spill Response – the National Contingency Plan'

A two-day conference

10–11 March 1998

In recent years the UK has suffered two large oil spills. One of these involved the largest shore-line clean-up in the UK since the *Torrey Canyon* incident over 30 years ago.

In light of these incidents the National Contingency Plan has been reviewed and revised. At the same time there have been many new innovations to oil spill response on the international scene.

This conference will address the main issues affecting all those involved with oil spill response in the UK. A two-day programme of papers is being prepared and will be published in due course. For more information about exhibition and sponsorship opportunities and/or to receive a copy of the programme in due course, please contact:

Pauline Ashby, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR, UK
Tel: +44 (0)171 467 7100
Fax: +44 (0)171 255 1472

Grease grabber cleans up oil spills

The Grease Grabber®, a mechanical skimmer that removes floating grease and oil from water, is now available from Abanaki Corporation.

The unit can be mounted on a flat surface or suspended from an option boom and mast support. An 8-inch wide belt breaks the surface tension of the water and attracts the grease and oil floating on top. Textured pressure rolls pull the belt over an idler pulley and through angled wiper blades which remove the oil and grease from both sides of the belt. The oil and grease is then rolled into a heated hopper that maintains fluidity for drainage through a 4-inch internal diameter discharge port which discharges at a rate of 6.6 litres per hour.

Ceramic wiper blades and reinforced polyfibre belts allow the skimmer to handle thick, viscous hydrocarbons of temperatures up to 260°C.

Typical applications include underground tanks, service stations and wastewater sumps.

Oil skimmer

All tanked up for fuel deliveries to go

Veeder-Root has developed an on-truck, PC-based driver controlled delivery (DCD) system that can control and manage unattended deliveries at each forecourt fuelled by a tanker equipped with the system.

The DIS-T system features an in-cab touch screen PC that can be hand-held or used while mounted in a charging cradle located in the tanker cab. The PC is linked to a thermal printer, permanently fitted in the cab, which produces printouts of tank level data on demand.

Information on tank levels and ullages is captured from the site's gauging system via low power radio transceivers. These are fitted to both the DIS-T computer and the gauging system, enabling two-way communication.

The company has also developed Accuchart™ – a patented technique for calibrating service station storage tanks. The software holds a geometric model of the tank that is continually refined during operation by comparing changes in gauge readings with volumes actually dispensed. This reduces tank calibration errors and provides more precise control over fuel stocks.

On-truck delivery information system

If you would like your new product releases to be considered for our Technology News pages, please send the relevant information and pictures to:
Kim Jackson
Deputy Editor, *Petroleum Review*
61 New Cavendish Street, London W1M 8AR

Contacts

Whessoe Varec
+44 (0)1325 301100

Flightline Support
+44 (0)1993 776564

Reiss Engineering
+44 (0)181 204 7155

Daniel Europe
+44 (0)1653 695551

Fibrelite Composites
+44 (0)1756 799773

Tintometer
+44 (0)1722 327242

UK Robotics
+44 (0)161 876 3200

Schlumberger Electronic Transactions
+33 1 47 46 70 20

Anderson Greenwood
+44 (0)161 494 5363

Abanaki Corporation
+1 216 543 7400

Veeder Root
+44 (0)181 392 1355

Elaflex
+44 (0)1992 451494

Diesel nozzle drip stop

Often the area around a diesel dispenser is contaminated by diesel which has fallen on to the forecourt – primarily because the nozzle spout has not fully drained before being removed from the car filler pipe.

Elaflex has developed a new drip stop spout for its ZVA Slimline diesel nozzle in a bid to eliminate this problem.

Featuring a patented magnetic closure, Drip Stop operates in two ways. Firstly, it closes to prevent diesel dripping when the spout is removed from the filler pipe too quickly, and secondly, it retains the remains left in the spout so that the next customer doesn't spill this diesel on to the forecourt when removing the nozzle from the dispenser.

IP
THE INSTITUTE OF PETROLEUM

Forthcoming IP conferences

6 November 1997

IFEG Conference: Re-engineering the Energy Information Service

- Knowledge management
- Professional and personal competencies
- Business process re-engineering
- Intranets

and other technological developments are changing the way information services for the energy industry are organized and managed. Information professionals and their employers need to understand their impact. This conference intends to translate management jargon into practical action.

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18 November 1997

The World's Your Oyster: New Opportunities for Upstream Oil and Gas

The structural changes wrought in the oil and gas world during the nineties have far reaching consequences for service providers and contractors as well as oil companies. A positive view of the future by analysts coupled with a renewed appetite for investment in the sector by the banks have created significant new opportunities for upstream oil and gas. This conference will consider these issues from the standpoint of oil companies, operators, contractors and financiers.

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27 November 1997

Competitiveness Through Innovation: the 3rd IP International Downstream Logistics Conference

In reviewing the logistics of petroleum products from the refinery to the end user via bulk storage terminals, this conference will focus on those links in the chain where value can be added, through new technology, developments in IT, outsourcing and rationalization. It will be of interest to oil company general managers, strategists and planners as well as contractors, equipment suppliers and service companies.

Copies of the programmes and registration forms will shortly be available from:
Conference Department
The Institute of Petroleum
61 New Cavendish Street
London
W1M 8AR, UK
Tel: +44 (0)171 467 7100
Fax: +44 (0)171 255 1472

EVENTS Forthcoming

September

4–5 **Aberdeen**
Heavy Oil Field Development
Details: IBC UK Conferences Ltd, Gilmoora House, 57–61 Mortimer Street, London W1N 8JX, UK.
Tel: +44 (0)171 637 4383
Fax: +44 (0)171 453 2058

9–12 **Aberdeen**
Offshore Europe '97
Details: SPE, 4 Mandeville Place, London W1M 5LA, UK.
Tel: +44 (0)171 487 4250
Fax: +44 (0)171 487 4229

14–17 **Dubai**
Pipetech '97
Details: Dubai RAI, PO Box 9225, United Arab Emirates.
Tel: +971 4 319444
Fax: +971 4 319011

16–17 **Tbilisi, Georgia**
TransCaucasus '97
Details: ITE, 112a Shirland Road, London W9 2EQ, UK.
Tel: +44 (0)171 306 0033
Fax: +44 (0)171 306 0358

18 **London**
Legal and Commercial Issues in Pipeline and Terminal Infrastructure Agreements
Details: Langham Oil Conferences, 37 Main Street, Queniborough, Leicester LE7 3DB, UK.
Tel: +44 (0)1509 881022
Fax: +44 (0)1509 881576

18–19 **London**
Investing in Kazakhstan
Details: IBC Financial Focus, Gilmoora House, 57–61 Mortimer Street, London W1N 8JX, UK.
Tel: +44 (0)171 453 2703
Fax: +44 (0)171 323 4298

18–19 **Moscow**
Investing in Russia's Oil Refineries
Details: IBC UK Conferences Ltd, Gilmoora House, 57–61 Mortimer Street, London W1N 8JX, UK.
Tel: +44 (0)171 453 2160
Fax: +44 (0)171 631 3214

22–23 **London**
Petroleum Trading and International Law
Details: Abacus International, 214 Inchbonnie Road, South Woodham Ferrers, Essex CM3 5WU, UK.
Tel: +44 (0)1245 328340
Fax: +44 (0)1245 323429

22–23 **London**
Implementing Dynamic Risk Management in the Oil & Gas Industry
Details: ICM Marketing Ltd, 5 Cavendish Square, London W1M 0BX, UK.
Tel: +44 (0)171 436 5735
Fax: +44 (0)171 436 5741

22–24 **Aberdeen**
Safety Culture in the Energy Industries
Details: Conference Registrar, Energy Logistics International Ltd, Europower House, Lower Road, Cookham, Berkshire SL6 9EH, UK.
Tel: +44 (0)1628 525492
Fax: +44 (0)1628 521928

23 **London**
Latest Developments and Applications of Metocean Services for Operations Offshore
Details: The Institute of Marine Engineers.
Tel: +44 (0)171 488 2084

24–25 **London**
Automotive, Aviation and Marine Fuels
Details: Abacus International, 214 Inchbonnie Road, South Woodham Ferrers, Essex CM3 5WU, UK.
Tel: +44 (0)1245 328340
Fax: +44 (0)1245 323429

29–30 **London**
European Power Summit
Details: Peter Fusaro, Global Change Associates, 20 Harwood Avenue, White Plains NY 10603, USA.
Tel: +1 914 949 6798
Fax: +1 914 948 5301

29–1 October **Hertfordshire, UK**
9th European Gas Contracts Negotiating Workshop
Details: Langham Oil Conferences Ltd, 37 Main Street, Queniborough, Leicester LE7 3DB, UK.
Tel: +44 (0)1509 881022
Fax: +44 (0)1509 881576

October

1–2 **Oslo**
8th Conference on the European Downstream Industries in a Changing Environment
Details: Norwegian Petroleum Society, PO Box 1897, Vika, N-0124 Oslo, Norway.
Tel: +47 22 12 90 04
Fax: +47 22 55 46 30

2–3 **Moscow**
Financing Oil & Gas in Russia
Details: IBC UK Conferences Ltd, Gilmoora House, 57–61 Mortimer Street, London W1N 8JX, UK.
Tel: +44 (0)171 453 2703
Fax: +44 (0)171 323 4298

1–4 **Almati, Kazakhstan**
5th Kazakhstan International Oil & Gas Exhibition
Details: Eva Cretollier, ITE Oil & Gas Division.
Tel: +44 (0)171 286 9720
Fax: +44 (0)171 286 0177

6–7 **Singapore**
Petroleum Trading and Cargo Shortages
Details: Abacus International, 214 Inchbonnie Road, South Woodham Ferrers, Essex CM3 5WU, UK.
Tel: +44 (0)1245 328340
Fax: +44 (0)1245 323429

6–8 **Nicosia**
Middle East Strategy to the Year 2010
Details: APS Conferences, PO Box 3896, Nicosia, Cyprus.
Fax: +357 2 350265

8–9 **London**
Caspian Oil & Gas Projects
Details: IBC UK Conferences Ltd, Gilmoora House, 57–61 Mortimer Street, London W1N 8JX, UK.
Tel: +44 (0)171 637 4383
Fax: +44 (0)171 631 3214

13–14 **Bahrain**
1st GCC – EU Conference on Advanced Oil and Gas Technologies
Details: GCC General Secretariat, Oil and Gas Department, PO Box 7153, Riyadh 11462, Saudi Arabia.
Tel: +966 1 488429
Fax: +966 1 4827716

15–17 **Cape Town**
Africa Upstream '97
Details: Global Pacific & Partners Pty Ltd, 147 Hendrik Verwoerd Drive, Randburg 2194, Johannesburg, South Africa.
Tel: +27 11 781 3358
Fax: +27 11 781 3362
Email: global. pacific.@pixie.co.za

16 **London**
Designing for Health, Safety and the Environment
Details: Ms Barbara Williams, M W Kellogg Ltd, Greenford Road, Greenford, Middlesex UB6 0JA, UK.
Tel: +44 (0)181 872 7000
Fax: +44 (0)181 872 7272

20–22 **Cape Town**
Southern & Central Africa Downstream
Details: Global Pacific & Partners Pty Ltd, 147 Hendrik Verwoerd Drive, Randburg 2194, Johannesburg, South Africa.
Tel: +27 11 781 3358
Fax: +27 11 781 3362
Email: global. pacific.@pixie.co.za

EVENTS Forthcoming

23–24 **Aberdeen**
Maximising Return from Maturing Assets
Details: IQPC Ltd, 1st Floor, West Wing, Chancery House, 53/64 Chancery Lane, London WC2A 1QU.
Tel: +44 (0)171 421 3500
Fax: +44 (0)171 831 9249

27–28 **Stavanger**
Marginal Oil and Gas Fields
Details: IBC UK Conferences Ltd, Gilmoora House, 57–61 Mortimer Street, London W1N 8JX, UK.
Tel: +44 (0)171 637 4383
Fax: +44 (0)171 453 2058

29–30 **Aberdeen**
Project 2000 in Oil & Gas: Auditing, Testing and Correcting Systems for the Millennium Bug
Details: IQPC Ltd, 1st Floor, West Wing, Chancery House, 53/64 Chancery Lane, London WC2A 1QU, UK.
Tel: +44 (0)171 421 3520
Fax: +44 (0)171 831 9249

30–31 **London**
Sakhalin Oil & Gas
Details: IBC UK Conferences Ltd, Gilmoora House, 57–61 Mortimer Street, London W1N 8JX, UK.
Tel: +44 (0)171 637 4383
Fax: +44 (0)171 631 3214

November

4–5 **Barcelona**
12th Annual European Autumn Gas Conference: Coping with Supply
Details: Overview Gas Conferences, 82 Rivington Street, London EC2A 3AY, UK.
Tel: +44 (0)171 613 0087
Fax: +44 (0)171 613 0094

6 November
London: *IFEG Conference: Re-engineering the Energy Information Service*
Details: Pauline Ashby, The Institute of Petroleum.

17–18 **Hong Kong**
GasTrade '97
Details: GasTrade Secretariat, Turret RAI plc, Armstrong House, 38 Market Square, Uxbridge, Middlesex UB8 1TG, UK.
Tel: +44 (0)1895 454533
Fax: +44 (0)1895 454578

18 November
London: *The World's your Oyster: New Opportunities for Upstream Oil & Gas*
Details: Pauline Ashby, The Institute of Petroleum.

19–21 **Bogota, Columbia**
Expo Petroleo '97
Details: Birmingham Chamber of Commerce and Industry, Overseas Fairs Division, George House, George Road, Birmingham B15 1PG, UK.
Tel: +44 (0)121 455 9600
Fax: +44 (0)121 456 1785

20–21 **London**
Natural Gas: Trade and Investment Opportunities in Russia and the CIS
Details: The Royal Institute of International Affairs, Chatham House, 10 St James's Square, London SW1Y 4LE, UK.
Tel: +44 (0)171 957 5700
Fax: +44 (0)171 957 5710

WORLD TRIBOLOGY CONGRESS 1997 LONDON

World Tribology Congress
8–12 September 1997

At Westminster Central Hall and IMechE Headquarters London

Organized by the Tribology Group of the Institution of Mechanical Engineers, the first World Tribology Congress has the full support of more than 30 associated bodies worldwide. The five-day Congress will include more than 350 oral presentations by speakers from over 50 countries. In addition, there will be an exhibition and around 600 poster contributions.

Sponsored by NSK-RHP, AEA Technology, GKN and Climax Molybdenum.

For further information, please contact:
Fiona Bangs, IMechE,1 Birdcage Walk, London SW1H 9JJ, UK
Tel: +44 (0)171 973 1249
Fax: +44 (0)171 222 9881
E-mail: wtc@imeche.org.uk

Please note: we have not received any details for any conferences in August

UK Deliveries into Consumption (tonnes)

Products	†May 1996	*May 1997	†Jan-May 1996	*Jan-May 1997	% Change
Naphtha/LDF	234,240	129,993	1,288,543	729,697	-43
ATF – Kerosene	698,023	713,001	3,046,880	3,179,357	4
Petrol	1,942,163	1,954,039	9,056,427	9,169,124	1
of which unleaded	1,292,315	1,386,027	6,081,024	6,449,163	6
of which Super unleaded	64,896	47,851	330,758	224,602	-32
Premium unleaded	1,227,419	1,338,176	5,750,266	6,224,561	8
Burning Oil	231,693	203,340	1,665,319	1,594,360	-4
Derv Fuel	1,245,066	1,276,037	5,835,443	6,129,375	5
Gas/Diesel Oil	589,415	526,047	3,467,342	3,207,403	-7
Fuel Oil	555,073	281,905	2,991,068	2,054,204	-31
Lubricating Oil	77,182	78,901	364,099	370,447	2
Other Products	707,494	687,716	3,642,127	3,526,429	-3
Total above	6,280,349	5,850,979	31,357,248	29,960,396	-4
Refinery Consumption	544,849	540,979	2,715,683	2,709,913	0
Total all products	6,825,198	6,391,958	34,072,931	32,670,309	-4

† Revised with adjustments *preliminary

NEWS Institute

NEW MEMBERS

Miss J Alexander, InterGen
Ms L M Andrla, Cogent Information Systems Inc
Mr G H R Aston, Sandhurst
Mr C Baker, Norwood
Mr H Berg, Lloyds Bank plc
Mr P T Burkett, Ipswich
Mr G Byrne, Forecourt & Technical Services
Mr N G Chadwick, Tampimex Oil Trading
Mr G W Cope, Cogent Information Systems Inc
Mrs S Depraz, IPIECA
Mr C Ellen, Graham & Sibbald
Miss S Ellis, Rapleys
Mr C J Evans, Ash Vale
Mr D Evison, S C Johnson Wax
Miss S Farthing, Ward Lester Group
Mr G C Gillanders, Windsor
Mr M S M Gollogly, Datamonitor
Mr M F Goodman, Mott MacDonald
Capt P Hall, Pontypool
Mr T L Holland, Holland Associates
Mr C J Hunt, London
Mr G Johnson, Thame
Mr A Johnston, London
Mr R Kent, Oil Taxation Office
Mr M Ketheswaran, Kew Petroleum
Prof D Kirkwood, Kilmarnock
Mr N Le Masurier, Atag Ernst & Young
Mr C J Lloyd, Rugby
Mr A McFarlane, Falkirk
Mr J Mottershead, Milton Keynes
Mr H Mudan, Sumitomo Bank
Mr A R Murray, Bangor
Mr B O'Brien, Forecourt & Technical Services
Mr C P O'Donoghue, Harlow
Mr O O Ogunmakin, London
Mr R W M Palmer, Cameron McKenna
Mr L Patane, London
Mr P J Prescott, Rochester
Mr M J Roberts, British Airways plc
Mr L Robinson, Andersen Consulting
Mr M J Robotham, PEC Retail Solutions
Mr S Shan, Market Tracking International
Mr L E T Smith, London
Mr S Stokes, Wigan
Mr M Stone, Control Risks Group Limited
Mr J D Talmage, Market Tracking International
Mr P M Timmis, Rods Oils Limited
Dr J J Traynor, Natwest Markets
Mr R Y Twum-Gyamrah, RTG Marketing Agency
Mr J D Ward, Thorpe Bay
Mr R H Ward, Lloyds Bank plc
Dr D J Welsh, Fleet
Mr D Wieland, Liberty Oil Pty Limited
Mr D Wiessman, Alon Israel Oil Company Limited
Mr A H Williams, Bristol Port Company
Mr T K Wood, Leighton Buzzard
Mr S Wylie, London

STUDENTS

Mr T C Longe, London
Mr R D Wason, Wrexham

NEW CORPORATE MEMBERS

Ras Laffan LNG Co Ltd
PO Box 24200
Doha, Qatar

Representative: Mr T Lightley
Ras Laffan LNG Co Ltd is involved in LNG condensate production. It has an offshore complex with three wellhead platforms with a 32-inch pipeline to a two-train LNG plant onshore providing 5.2mnt/y LNG and 40,000 b/d condensate. It is able to expand to six LNG trains, if required.

Petro-Gas Products Supplies Ltd
PO Box 17800
Nairobi, Kenya

Representative: Mr P M Patel
Petro-Gas Products Supplies Ltd, based in Nairobi, Kenya is a manufacturer's representative and distributor for a wide-range of equipment, for the oil and petrochemical industries in the East African countries. It also supplies equipment for retail and consumer outlets.

Subsea Offshore Ltd
Greenwell Base
Greenwell Road
East Tullos
Aberdeen AB1 4AX

Representative: Mr David Kerr
Subsea Offshore Ltd is one of the world's largest underwater contractors. Its engineering capabilities support a wide range of services, including diving, construction/installation, remote technology operation and manufacture, intervention and a full spectrum of survey operations.

Hawke Cable Glands
Oxford Street West
Ashton under Lyne
Lancashire
OL7 ONA

Representative: Mr Nigel Walker
Hawke Cable Glands is a leading manufacturer of cable glands, enclosures and cable transit systems for use in hazardous and industrial installations.

Towers Perrin
Castlewood House
77/91 New Oxford Street
London
WC1A 1PX

Representative: Mr Gerry Quinn
Towers Perrin is an international management consulting firm that helps companies improve business performance through people. Its 6,500 staff in 80 offices around the world support over 300 of the global top 500 companies. Its UK staff is 600, including the specialist change management group, Kinsley Lord. Particular strengths are the oil, gas and chemicals industries, specializing in business strategy, mergers and acquisitions, corporate change and adaptation, and human resources management.

NEWS Institute

NEW FELLOWS

Mr A H F Dungarwalla FInstPet
After graduating in 1987, Mr Dungarwalla joined London & Coastal Oil Wharves Ltd, Canvey Island, as the company's Technical Service Chemist. He is currently the Laboratory Manager for Inspectorate Watson Gray (Saudi Arabia) Ltd, part of an international group of companies in the field of oil/chemical cargo inspection, testing and analytical consultancy. He has been responsible for commissioning an ISO 9002 approved analytical laboratory for the company's Middle East operations for the analysis of petrochemical, chemical and environmental samples. His duties include cargo surveying of marine tankers, chemical analysis to industry-accepted test methods, e.g. ASTM, IP, method development/validation, client liaison, training and supervising laboratory personnel. He is an active member of the Institute's Essex branch.

Mr Martin J Hodge FInstPet
Mr Hodge graduated in Electrical Engineering in 1981 and then joined McDermott Engineering. He became a member of the Institute in 1982. He has been assigned to projects worldwide in design, construction and commissioning for upstream contractors and operators. He is currently Electrical Discipline Leader for MMCL Aberdeen, and is also assigned as Lead Engineer to the Occidental Qatar ISND Project. Mr Hodge is an active member of the Aberdeen branch.

Mr David Jones FInstPet
After graduating in 1971, Mr Jones joined ICLS (Laboratories) Ltd as Section Leader. He is currently the Director of the Oil and Chemical department at CWA Consultants Ltd. His responsibilities include management of tanker, terminal and refinery investigations which are concerned with cargo quality control, contamination incidents and related claims handling. His duties include the provision of export advice in the support of legal proceedings in commercial court and arbitration disputes. He is a member of the PM-L-3 committee as well as the East Anglian branch.

Obituary

Claude Albert Walder

The friends and colleagues in the oil industry of Mr Claude Albert Walder will be saddened to learn of his death on 6 July, at the age of 79 years.

Mr Walder's oil industry career began in 1942 with Agwi Petroleum Corporation Ltd. He joined Anglo-American Oil Company Ltd in 1947 and became Section Head, Supplies & Shipping Dept in 1948. He remained with Esso Petroleum Company Ltd (formerly Anglo American Oil Company Ltd) until he retired from his then role of Marine Manager.

He was a founder Director of the Oil Companies International Marine Forum (OCIMF) in 1970 where he remained in the role of Director until 1980.

He became a Fellow of the Institute of Petroleum in 1954.

If you have recently moved please inform the Membership Department of your new address

AWARDS

Certificate of Appreciation

Mr John Evans
John has worked at the Elf Oil Milford Haven Refinery for the past 23 years and has held the position of Laboratory Manager for the last 10 years. He joined the ST-G-3 sub panel approximately 15 years ago, becoming Secretary and finally, Chairman. At present, he is the Secretary of ST-B-9 and Chairman of ST-G-3. On behalf of Elf he is also actively involved in the following panels: ST-B-4, ST-B-7, ST-B-10, ST-B-6 and ST-G-6A. On a local basis, he has been an active member of the IP South Wales Branch and is currently Vice-Chairman.

Student of the Year

Chairman of the Institute of Petroleum Humber Branch John Kersey (right) presenting the annual Institute of Petroleum Student of the Year award to Brian Bellamy (left) of Grimsby, with Humber Branch secretary David Hughes (centre). Brian recently completed a City of Guilds Plant and Plant Services studies course with AIMS.

The Humber Branch has also sent out packages of oil industry and careers-based information to 34 schools and colleges in the North Lincolnshire area, in a bid to strengthen links between education and industry. The initiative was due to the recognition of the large volume of petroleum related local industry.

People

Phillips Petroleum Company has announced the following changes. Current Managing Director **Allyn Risley** has been named to the newly created position of Vice President, International Liquefied Natural Gas. **V R Chamberlain** will replace Risley as the company's UK Managing Director. Chamberlain's previous role was Partnership Operations Manager in North America Production Division for Phillips Petroleum Company, based in Houston, Texas.

Jacques Denis has been appointed Finance Director/ Company Secretary of Elf Atochem SA.

Patricio Puente has joined the ICF Kaiser International as a Senior Project Manager in the oil and gas practice of the company's Consulting Group.

Exxon Corporation has elected **Reatha Clark King** to its Board of Directors. Dr King is also the president and executive director of the General Mills Foundation and vice president of General Mills Inc.

Michael E Wiley has been elected to the ARCO Board of Directors. Wiley is an ARCO Executive Vice President and Chairman of

Dr Graham Ogden **has been appointed to the post of Research and Development Director at Rotork Controls Ltd. He joined the company as Chief Electronics Engineer in 1985, becoming Electronics Design Manager in 1988.**

Dublin-based oil and gas exploration and production company Tuskar Resources plc has appointed *Stephen Carroll* as Head of Finance for the company, in addition to his responsibilities as Company Secretary.

Houston-based Vastar Resources Inc which is 82.3 per cent owned by ARCO. The Board of Directors has also elected **Dodd W DeCamp** to the role of Corporate Officer. He has been ARCO's Manager of Upstream Planning and Exploration since February 1996.

Simon Waugh has been appointed Group Director of Marketing by Centrica plc. Formerly Managing Director of Saga Services Ltd, his new role starts at the beginning of August.

David Boyd, a non-executive director of JKX Oil & Gas, has been appointed Deputy Chairman.

Kerr-McGee, the Oklahoma, based oil company, has appointed former Secretary of State for Defence **Michael Portillo** to a senior management role in its exploration department. He previously worked for Kerr-McGee in the 1980s.

LASMO has announced the appointment of **Dr Chris Wright** as Director, New Business with effect from 21 July, and **Hugh Norton** and **Dr Roy Reynolds** as non-executive directors of the company with effect from 1 July 1997.

Former Secretary of State for Foreign and Commonwealth Affairs, The Rt Hon **Malcolm Rifkind** QC will join BHP Petroleum as Director, International Strategy. He will work on a part-time basis, developing and advising on the execution of its international growth strategy.

Kvaerner Oilfield Products (KOP) has announced the re-organization of its subsidiary businesses into five regional companies. **Mike Teers** will be the President of KOP Inc in the USA with **Al Williams** as Executive Vice President. **Bernie Anson** will be the Managing Director of KOP in the UK. **Oddvar Dankertsen, Kjell Pedersen** and **Geoff Ansley** will be the Presidents of the KOP companies in Norway, Brazil and Asia Pacific respectively.

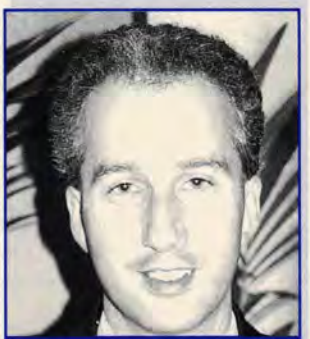
Lanemark International Ltd has appointed **Paul Collier** to the position of Technical Sales Manager. He will have particular responsibility for Lanemark's European HC business.

Dr Lawrence Jackson **is to retire as President of Pipeline Integrity International (PII). He joined the business in 1980 as Assistant Director with responsibility for electronic and mechanical design. He subsequently took on Project Management, then became Deputy Director before being appointed to the top management position in 1989.**

Ingersoll-Dresser Pumps has appointed *Owen Turner* as Vice-President, Aftermarket, for Europe, the Middle East and Africa. He will report to *William Ord*, President, Worldwide Sales.

Dr Robert Hawley CBE, Chief Executive of the Board of British Energy plc left on 30 June to expand his career in other directions. The Board has requested non-executive Chairman **John Robb**, to take on the duties of executive Chairman until they make a new appointment.

Mobil Europe and Central Asia Ltd has appointed **John Banfield** as Director Downstream Business. He will be responsible for co-ordinating all Mobil's downstream marketing and refining interests in the region including the company's interest in the BP/Mobil joint venture.



Fina plc has announced the appointment of *Thain Coventry* to its Marketing Services team in the role of Product and Promotions Manager.

LE HAVRE - ANTIFER

CRUDE OILS AND PRODUCT BULK STORAGE

Compagnie

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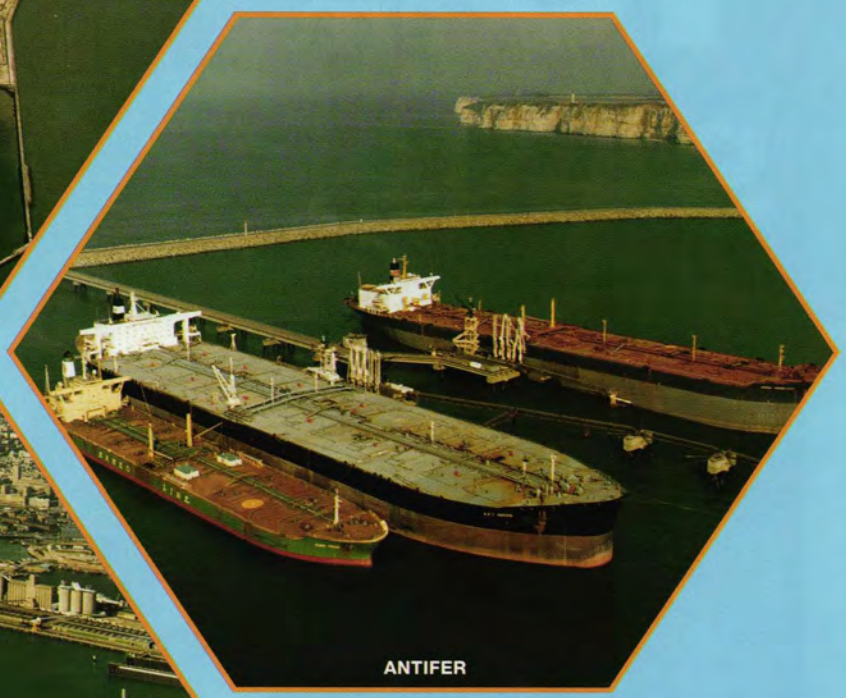
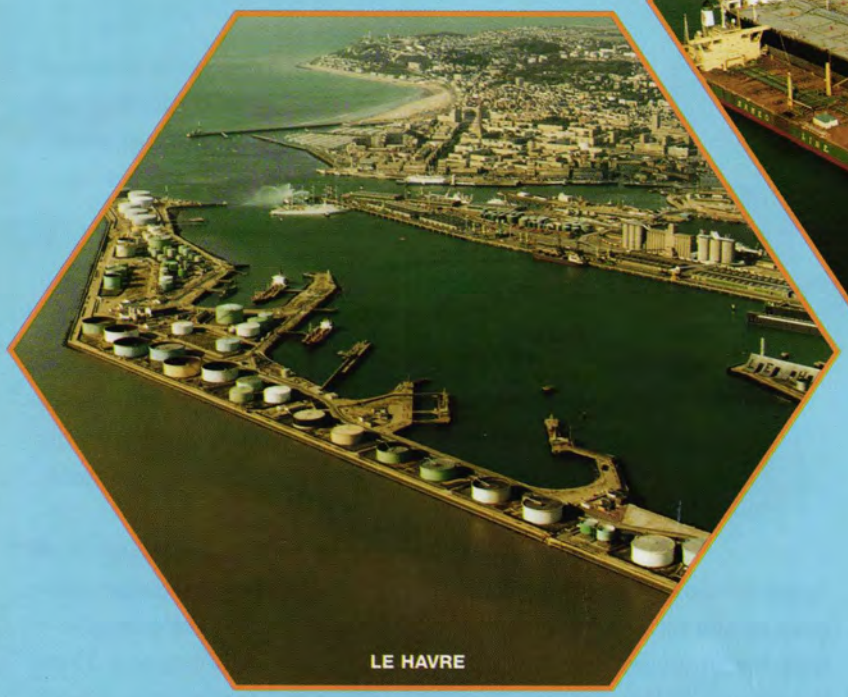
Maritime





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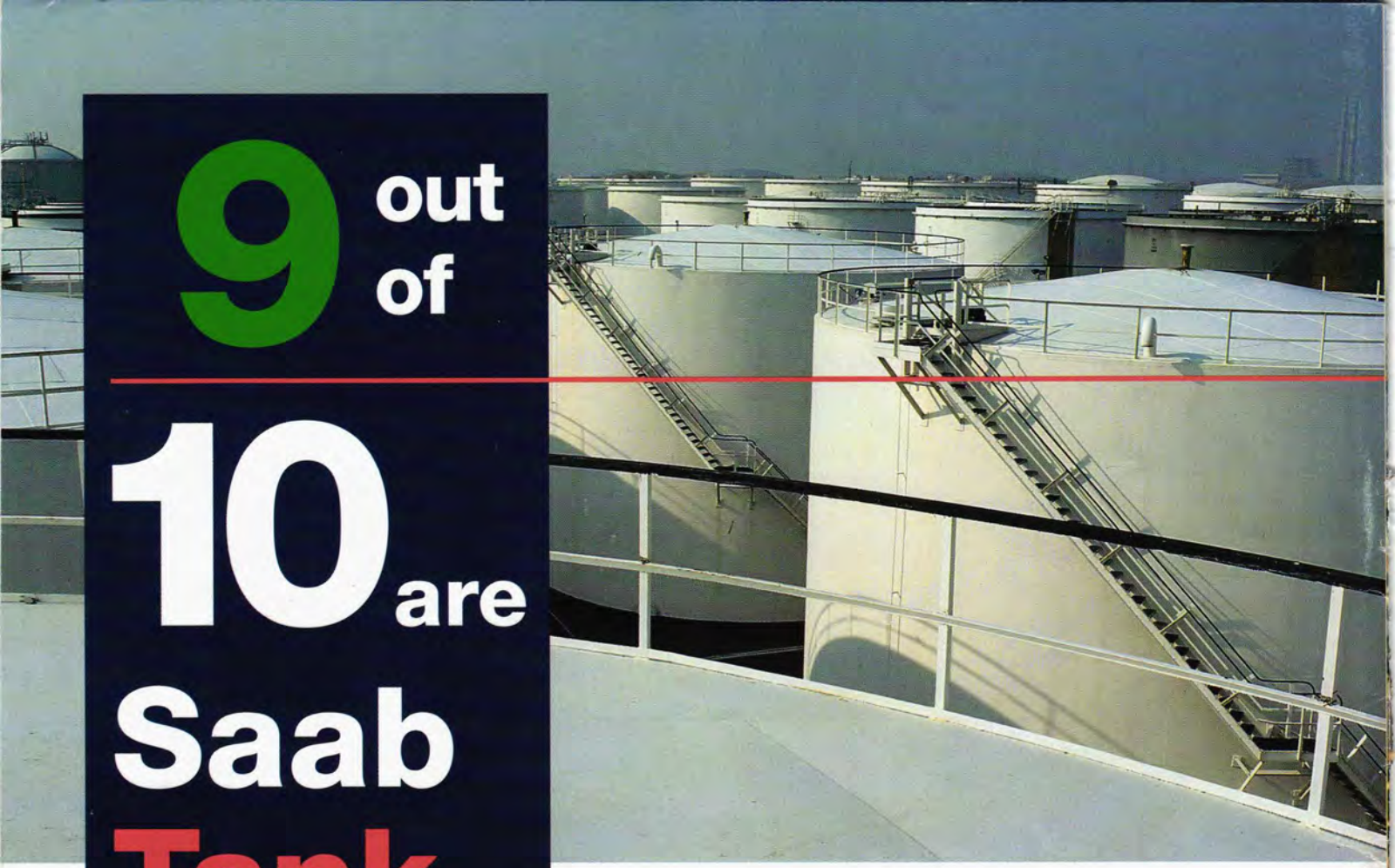
CIM Location	Total Capacity m3	Tank size range m3	Number of tanks	Products stored	Comments
LE HAVRE	3 085 000	60 000 to 150 000	33	Crude oils	9 jetties. Max Draught 70 ft. VLCC up to 250 000 MT Barge and pipelines Transhipment - Reloading. Direct link to open sea.
ANTIFER	655 000	20 500 to 151 000	2 4	Crude oils	2 jetties. Max Draught 98ft and 82ft. ULCC up to 550 000 M.T. Transhipment. Relay connected to Le Havre facilities above through pipeline. Re-loading on site.
LE HAVRE	1 400 000	600 to 61 000	87	Refined Products Petrochemical Feedstock	Naphta. G.O. Gasoline. Premium. Jet. Kerosene. Deballasting equipment. Connected with TRAPIL pipelines.



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