

AUGUST 1993

The Institute of  
Petroleum



# PETROLEUM REVIEW

## Independent bulk storage

A survey of  
European bulk  
storage capacity

## Russia

Restructuring the oil  
industry

## Azerbaijan

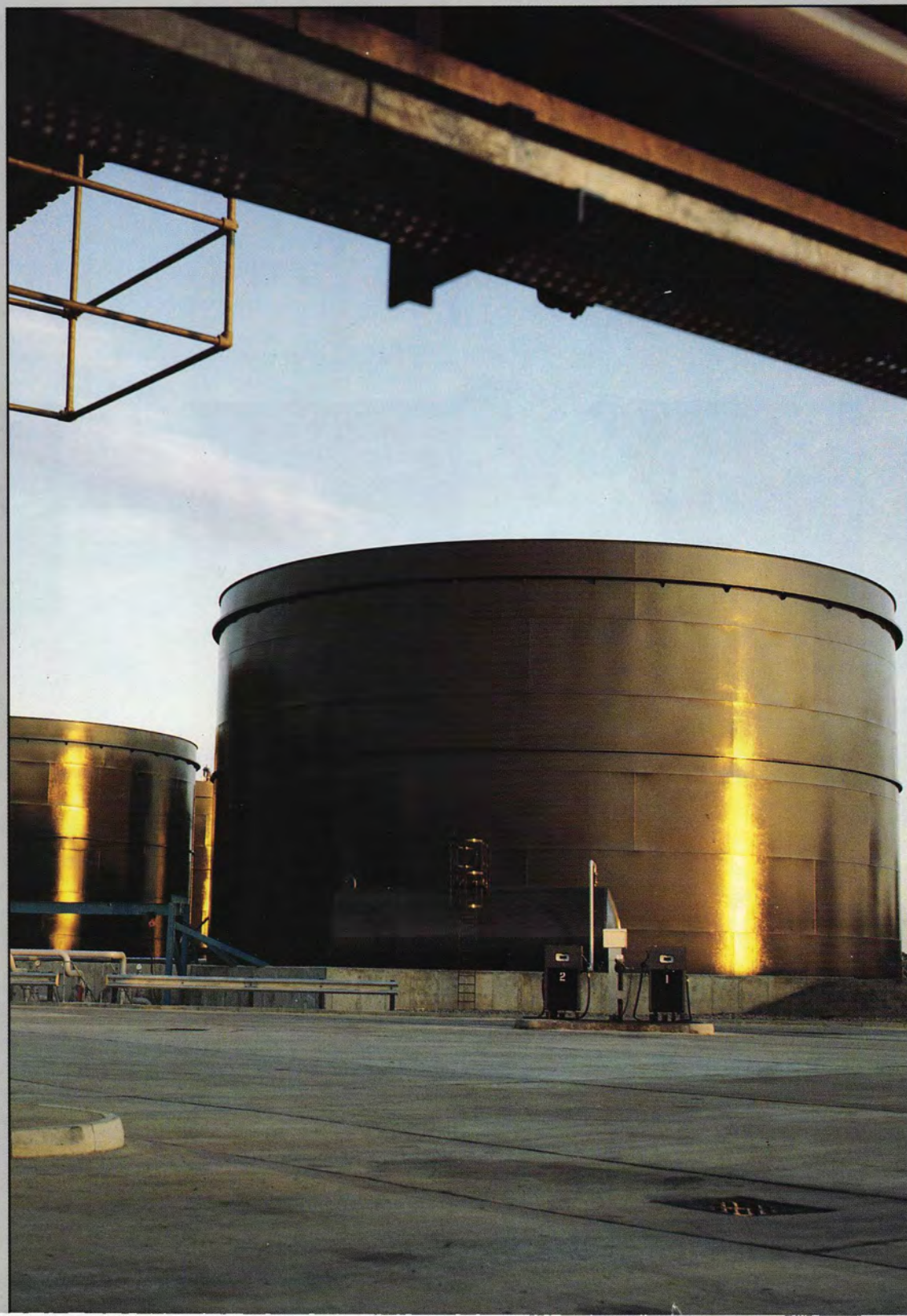
Update from Baku

## Pipelines

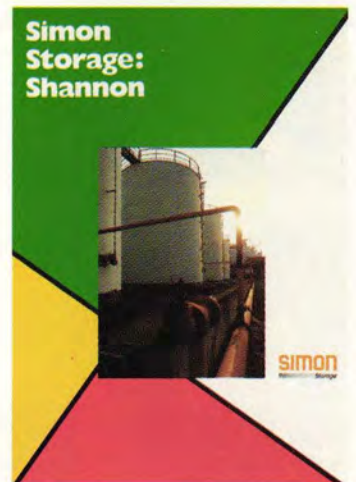
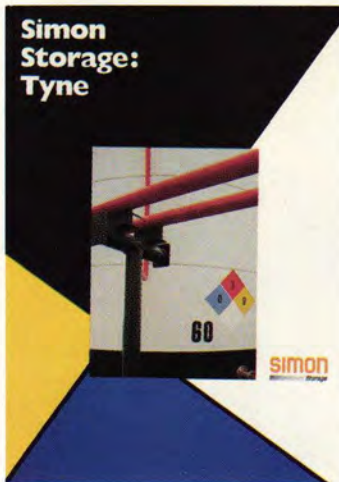
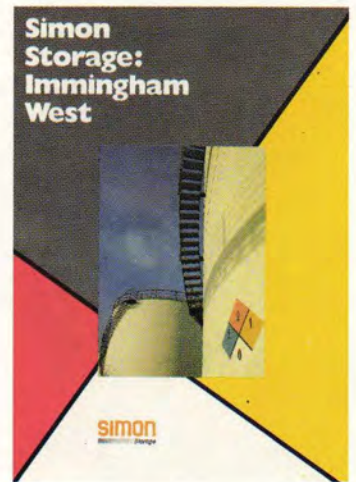
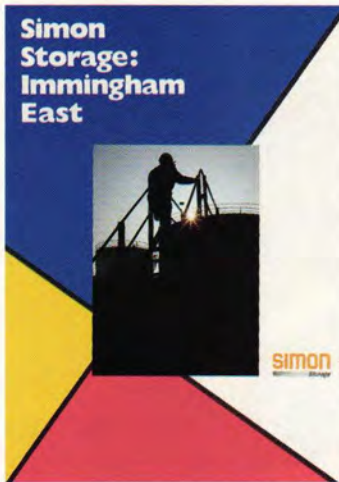
Options for  
exporting crude  
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## Poland

Potential new  
energy source —  
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Cover photo - Wymondham storage. Photograph courtesy of GATX

23 June

**BP Nutrition and The Sterling Group** have agreed the \$425m sale of Purina Mills, North America's largest supplier of animal feed.

25 June

**Energy Minister Tim Eggar** has given Eastern Generation planning consent for the construction and operation of a 380 MW combined cycle gas turbine power station at King's Lynn.

**HSC has launched a new-style newsletter** entitled 'Health and Safety News for the Oil Industry'.

30 June

**Shell has signed a 20-year production sharing contract** with Petronas to develop 11 Malaysian gas fields.

**Plans for a £15m offshore logistics centre** at Aberdeen Airport, which would handle all personnel needs for the North Sea, have been launched by Aberdeen Logistics.

1 July

**The Donaldson Inquiry** into marine pollution, following the *Braer* tanker disaster, ended after nine weeks of evidence. A report is not expected until next year.

**Amerada Hess has ceased production** from its UK North Sea Angus field.

**BP has sold its 11-strong support vessel fleet** to the US firm, GulfMark.

2 July

**Phillips has submitted plans** to revamp the giant Ekofisk oil field in the Central North Sea to the Norwegian government. The \$3-\$4bn rescue job is designed to ensure output beyond the current 2011 production licence expiry date.

**The construction group, Amec,** signed an agreement with Indonesia, paving the way for a joint venture to develop facilities to fabricate oil platform equipment.

**Aker has won a \$15.3m contract** from Statoil to build a steel jacket

for a riser platform on the Europe gas pipeline.

5 July

**British Aerospace was fined** £5,000 after polluting a tributary of the River Ribble in Lancashire with up to 200 gallons of oil from its Warton aerodrome.

**National Power has purchased** the US power station builder, Transco Energy Ventures (Tevco) for \$160m, as part of its drive for overseas growth.

6 July

**Taiwan has unveiled a plan** to privatise its state oil firm, Chinese Petroleum Corp (CPC). The company, which has assets of \$11bn, will be sold off in four sections over the next seven to eight years, according to the finance ministry.

7 July

**British Gas has shelved plans** to increase pipeline charges by up to 30 percent until at least October 1994.

**At the official opening** of its £70m Teesside gas processing plant at Seal Sands, Enron confirmed plans to start construction of a second plant next year.

**Russia is to purchase at least \$2bn** of oil equipment and services from the United States in an agreement negotiated by the US Export-Import Bank.

8 July

**The Italian state-owned company, Agip,** has signed a 30-year agreement with Nigeria for oil exploration and production in the Gulf of Guinea.

**British Coal is to shed 3,000 white-collar jobs,** effectively halving its entire management and clerical staff.

**Taiwan's state oil firm, CPC,** plans to build a US\$3bn petrochemical complex to meet rising domestic demand.

**AOC International and Brown & Root Marine** have formed a joint venture to bid for modification and maintenance work on UKCS installations.

9 July

**Survival training courses** for offshore workers have been slammed in a discussion paper released by the white-collar Manufacturing, Science and Finance union.

**Kuwait plans to privatise many oil-related sectors** of its economy via a new company that will be set up by the government, according to oil minister, Mr Al-Baghli.

**Amoco Norway has expressed concern** over costs incurred on its Valhall field as a result of shutdowns on Phillips' Ekofisk tank.

11 July

**Stolt Comex Seaway has won** an \$80m support contract from Norsk Hydro to install and tie in subsea lines in the Troll field.

13 July

**The Japanese firms, Cosmo Oil and Japex,** have acquired a 15 percent stake in three offshore concessions in Vietnam from Petrofina.

14 July

**Hopes of last-minute North Sea oil tax concessions** were dashed when MPs voted in the final division on the Finance Bill, giving legislative authority to the UK Budget.

**Alyeska, the operator of the trans-Alaska pipeline,** has agreed to pay \$98m to a range of private plaintiffs in settlement of damage claims stemming from the 1989 *Exxon Valdez* oil spill.

**Ruhrgas of Germany has agreed** to take delivery of an extra 2bn cu m of natural gas a year from Norway's North Sea Troll field. Under the deal, annual supplies are expected to rise from their present rate of 9bn cu m a year to 22bn cu m by the year 2005.

**Gas exports from the Central Graben Lomond field** are now underway via CATS to Teesside, completing Amoco's £1.3bn North Sea project.

15 July

**Lancelot and Guinevere, the North Sea's newest platforms,** began producing gas a fortnight ahead of schedule. Owned

largely by Mobil, they are capable of yielding up to 200m scfd.

**A joint venture between Total, British Gas, Statoil and PTT** Exploration and Production has begun production from the Thailand gas field, Bongkot.

**Blackland Oil has announced plans** to acquire the Chinese energy trading company, Kingsleigh Petroleum, for £26.7m in shares.

16 July

**Environmental conditions** attached to oil and gas exploration licences will be released to the public for the first time, according to Energy Minister Tim Eggar.

18 July

**Mining giant RTZ has sold** for \$510m the oil and gas interests acquired through its takeover of Nerco earlier this year.

**Fire broke out on the Ninian Southern platform,** 100 miles east of Shetland, with 274 people on board. The emergency lasted for just over 45 minutes, said Chevron, and no one was evacuated.

**Crude oil production by OPEC** countries exceeded agreed quotas by 800,000 barrels in June, according to the Middle East Economic Survey.

19 July

**OPEC called for an emergency meeting** as world oil prices, reacting to fears of an accord between Iraq and the UN over limited exports, fell to their lowest since the Gulf War.

**DRI/McGraw-Hill has announced** a forthcoming major study of the prospects for the worldwide natural gas business up to the year 2015.

20 July

**Mr Gabriele Cagliari, former chairman** of Italy's state oil concern, ENI, was found dead in his Milan prison cell with a plastic bag covering his head. He had been arrested in March for alleged corruption and illegal funding of political parties.



# PETROLEUM AND PETROCHEMICAL ECONOMICS, MARKETS AND TECHNOLOGY COURSES

from The College of Petroleum and Energy Studies,  
Oxford, September – December 1993



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<b>SP5</b>	6 – 8 Dec	Synthetic Lubricants – The State of Market Development and Inter-Product Competition
<b>SP6</b>	30 Nov – 2 Dec	The Metalworking Fluids Business – Products, Technology and Markets
<b>SP7</b>	8 – 12 Nov	Lubricants Technology and Applications
<b>SP8</b>	23 – 25 Nov	Lubricants – Strategies and Responses to the Environmental Challenge

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## Iraqi return ever nearer

As *Petroleum Review* went to press, OPEC members were firmly divided over how to avoid a collapse in oil prices if and when Iraq returns to the market.

An emergency meeting for the end of July was announced when fears of an early accord between Iraq and the United Nations sent world oil prices plunging to their lowest since the Gulf War. However, the session was then postponed by Opec President Jean Ping when the organisation's biggest producers, Saudi Arabia and Iran, clashed over the best way to prop up oil prices. In a war of words, they each called on the other to reduce

output.

Mr Ping then announced that the meeting would take place once Opec had had more time for consultation, but until the outcome of the Iraq/UN talks is known, there is little point in the organisation coming to any decisions.

With the ending of the deadlock over Iraqi weapon sites, an agreement allowing the export of 500,000 barrels a day is looking increasingly likely. Although this would add less than two percent to total OPEC production, it poses a real threat to an organisation whose members are all producing over their current output ceilings.

## Saudi/Total talks resume

Talks between Saudi Arabia and Total over buying into the French oil firm's downstream activities have resumed after breaking down two years ago.

Negotiations for a partnership between Total and Saudi Aramco, which would provide the French company with a guaranteed and regular supply of oil and the Saudi state-owned firm with bigger interests in refining and distribution, are still in their earliest stages. 'We are at the beginning of discussions', said a Total spokesman, 'nothing is decided at the moment'.

Industry sources say the previous talks broke down when the French government insisted Elf Aquitaine be granted exploration rights in Saudi Arabia as part of the deal. The new centre-right government, voted in earlier this year, paved the way for a resumption of talks by not imposing this condition.

## Ocean Odyssey firms face charges

Odeco and Arco are due to appear in court this month on safety charges, five years after radio operator Timothy Williams died in an explosion on the North Sea rig, Ocean Odyssey.

Odeco, who owned the rig and Arco, the operator, are due to go to trial at the High Court in Aberdeen on 10 August, charged with breaches of the Health and Safety at Work Act. Odeco also faces one charge under the Mineral Workings Act.

Mr Williams, 25, was the only one of 66 crew to perish when the rig blew up during

exploration in September 1988. The subsequent fatal accident inquiry, which lasted 127 days, heard how he was about to leave the rig by lifeboat when he was called back.

It will be the first time oil companies have been taken to the High Court for alleged breaches of health and safety. Unlike the Sheriff's Court, the fine is unlimited.

Following the Inquiry, Sheriff Principal Ronald Ireland said Mr William's death could have been prevented 'if those in charge of the rig had exercised

## Knighthood for Shell chairman

Sir John Collins, Chairman and Chief Executive of Shell UK, has received a knighthood in the 1993 Birthday Honours' List in recognition of his work with the Advisory Committee on Business and the Environment (ACBE).

Sir John, who joined Shell in 1964, chaired the committee from the time it was set up in 1991 to May 1993. During these two years, ACBE made several recommendations which have subsequently been incorporated into government policy. Other recommendations have led to the establishment of a Joint Environmental Markets Unit to help business exploit the market for environment technology and to the establishment of a major new programme to help small and medium-sized firms improve their environmental performance.

The committee, which consists of 25 senior executives from a broad range of UK companies, was

formed at the request of the government. Launching ACBE, Mr Michael Heseltine, then Secretary of State for the Environment, said: 'Business is coming to realise that protection of the environment is as crucial to its survival as protection of market share.'

When awarded his knighthood, Sir John said: 'It was a privilege to serve as Chairman of ACBE, a pioneering committee which I believe is a blueprint for a constructive alliance between government and industry.'



Sir John Collins

## Hazardous chemicals regulations

New EC regulations are now in force for those who make or import older chemical substances.

A leaflet, available from the Department of the Environment, explains how data must be reported so that any risks to human health or the environment can be assessed and, if necessary, controlled. This is the first part of a package of government advice to UK industry on hazardous chemicals.

Comprehensive advice on government controls on the use of hazardous substances is also available to companies in a new guide published by The Scottish Office.

proper care and followed safe and correct drilling practice in the management of the well'.

One question-mark hanging over the case is whether four witnesses, missing from the inquiry because they were out of the United Kingdom, will appear at the trial. They include Odeco's Oil Installations Manager, Captain Ionescu, and Arco's drilling superintendant, Mr Mel Miller.

## Kuwait to close Italian refinery

**Kuwait is shutting down its Naples refinery next month because it is inefficient and too expensive to refurbish. The only Kuwaiti refinery in Italy, it will remain open until 20 September. The company plans to build a new refinery or a new products terminal in the region of Campania.**

## Chevron and Shell to slash exploration

Two of the leading operators in the North Sea, Shell and Chevron, are planning dramatic cuts in their exploration activity.

A leaked memorandum has revealed that Shell is to cut its drilling programme by more than half and is looking to axe up to a third of its 200 exploration staff, while Chevron has announced it is to reduce its North Sea exploration budget by 30 percent.

Pressure groups have seized on the cuts as further evidence of the damage caused by the government's decision to abolish E&A relief (see p350), but Shell has emphatically denied any connection.

'The number of exploration prospects in the North Sea is declining', said a spokesperson. 'Therefore, in 1992 it was decided to cut back on drilling in that year and to reduce it further in 1993 and 1994. That reduced programme was unchanged after the PRT changes.' Chevron, on the other hand, has confirmed

that its retrenchment is a direct result of the budget announcement.

The Shell cuts came to light when a memo to staff from exploration director Peter de Ruiter, was leaked to the press. Mr Ruiter wrote, 'Doubtless you are aware...some very significant changes in petroleum revenue tax regulations will be implemented this year by the government.

'The main effect this will have on exploration is that our net costs will go up by a factor of four. In these circumstances, our programme will have to be reassessed carefully. Strong reductions in this activity will force us into corresponding reductions in staff.'

A Shell spokesperson said the wording of this first paragraph was open to misinterpretation, but that the remainder of the letter firmly backed Shell's 'unequivocal support for the proposed PRT changes'.

## Saga of Clinton's energy tax

A 'BTU' energy tax based on the heat content of fuels was at the centre of President Clinton's deficit reduction plan which was presented to Congress in late spring. This tax proposal was vigorously opposed by Congressmen representing a wide variety of interest groups. Assailants of the BTU tax included energy companies, farmers and energy-intensive manufacturing industries such as chemicals, metals, glass, paper, rubber and cement. Hostility was voiced by other energy users - electric utilities, transportation groups and residents of New England, where the winters are long and cold.

The House of Representatives substantially amended the BTU energy tax component of the deficit reduction bill which it passed on 27 May. It exempted from taxation, for instance, jet fuel used on international flights, bunker fuel used in international transport and petroleum used as a feedstock. Home heating and commercial heating oil, as well as diesel fuel and gasoline used on farms, were excused from the proposed supplementary tax on

petroleum products. These amendments opened doors for Senate opponents who proceeded to vote down the BTU tax and substitute in its place a transportation fuels tax (exempting aviation fuel) of 4.3 cents a gallon. Its deficit reduction bill passed on 25 June.

In mid-July, during one of the worst heat waves ever felt in Washington, a House-Senate conference committee began the unenviable task of ironing out a compromise deficit reduction bill between the House and Senate versions. Its final product must be agreed by both Houses of Congress in full session. The committee, which includes White House representatives among its 100-odd House and Senate, meets behind closed doors.

President Clinton has continued to insist on the need for a strong energy tax to achieve deficit reduction - the BTU tax was estimated to raise \$72bn in income over five years; the Senate bill less than one-third of this amount. The Senate compensated for some of this lost income by cuts in expenditure. The House, however, is unlikely to pass a

compromise bill which contains significant cuts in investment incentives and social programmes; the Senate is equally unlikely to pass a bill with too much in the way of an energy tax. The conference committee hasn't much leeway, given the very slender margins by which the separate House and Senate measures were approved. The House bill passed by only six votes; the Senate by one vote, a tie-breaker cast by Vice President Al Gore in his capacity as president of the Senate.

One proposal apparently under serious consideration is a transportation fuels tax higher than the Senate's 4.3 cents a gallon, combined with a tax on residential and commercial use of electricity, natural gas and heating oil. Energy used for manufacturing almost certainly will be exempt from this version of a 'modified BTU' tax.

Congress adjourns on 6 August for its summer recess. Lawmakers are determined to send a final deficit reduction bill, passed by both Houses, to President Clinton by that date. Exactly what kind of energy tax such a final bill will contain is still uncertain.

## Collapse in Former Soviet Union

Oil consumption in the Former Soviet Union republics continued to contract last year, according to the latest edition of the BP *Statistical Review of World Energy*.

Russian oil demand fell by nearly ten percent, but the largest falls were seen in the other former republics where the switch to hard currency payments for Russian oil, combined with general economic and political reforms, resulted in a collapse. The Ukraine, for example, consumed 30.3 percent less oil in 1992 than the previous year.

Oil consumption in the less developed countries (LDCs) of Latin America, Africa, the Middle East and non-OECD Asia grew in strength, however. South Korea topped the ratings once again, increasing its consumption by over 20 percent.

Growth in the OECD countries was moderate and, overall, world oil consumption grew by just 0.5 percent, compared to an even lower 0.2 percent for total world energy consumption.

World oil production, conversely, grew by almost half a million barrels per day (bpd).

Output in the Middle East rose by nearly 1.5m bpd, most of the increase coming from the restoration of Kuwaiti production which, by the end of 1992, had returned to pre-Gulf War levels. However, this extra production from the Middle East was almost offset by the fall in output from the Former Soviet Union - down by almost 1.4m bpd on the previous year.

Elsewhere, the continuing decline of US output was more than offset by increases in other OECD production, and there was a further expansion of supply from countries in Latin America, Asia and Africa.

# Russian oil update

By Toby Latta

**T**he Russian government has started implementing measures aimed at restructuring its ailing oil industry, in a move which officials say will mark a new era for the country's biggest hard currency earner. Plans have now been drawn up for the privatisation of energy sector enterprises, gradually devolving power away from central ministry bureaucrats, providing incentives aimed at turning production around and encouraging investment.

Regulations to govern the process of oil industry privatisation have ended months of uncertainty, which has left the sector lagging behind other enterprises in the government sell-off of state industry under the mass privatisation programme. This has been combined with a further dramatic drop in production, with an estimated output of 340-350 million tonnes [6.8-7.0 million barrels per day (bpd)] for 1993, compared with 398 million tonnes in 1992.

A lack of government investment due to severe cash shortages has caused exploration to be reduced to a minimum; cash-strapped production associations and refineries are unable to replace ageing machinery, while huge inter-company debt means that enterprises are facing severe liquidity crises, unable to invest or, in some cases, to pay their workers. Some 32,000 wells now stand idle in Russia and an estimated \$1.5 billion is needed to bring them back on line. Until now, government controls on the price of crude have kept oil producers' hands tied.

In spite of the growing crisis, the government has been slow to develop restructuring plans – partially explainable by the need for a considered approach to Russia's most sensitive of industries. A decree, signed by Russian president Boris Yeltsin on 17 November 1992, formulated the basic provisions for corporatisation. However, deadlines for government resolutions detailing the process were delayed to the end of the first quarter of this year when GKI (the State Committee for Property, managing privatisation) and the Ministry for Fuel and Energy agreed on a common approach.

Privatisation in the oil industry entails a two-tier corporatisation procedure. On the 'lower' level,

individual production associations, refining facilities, petrochemical plants and retail outlets become joint-stock companies by presenting corporatisation plans to GKI. Once these have been approved, regulations stipulate a pattern of subsequent share distribution which leaves 51 percent of voting shares (38 percent of total stock) in the hands of the state.

However, unlike in the past, state control will not be exercised by the Ministry for Fuel and Energy but by a new giant state oil firm called Rosneft. Initially Rosneft, which was formed by government order on 22 April, will assist individual production associations to corporatise, then act as an umbrella organisation to control the state's stake and help enterprises restructure. It will also take over some ministry functions, such as state financing, licensing, supervising deliveries to the state, and possible exploration. (Exploration enterprises are currently excluded from privatisation.)

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**'The momentum now exists to begin dragging the industry out of its ever-deepening crisis'**

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Each corporatised enterprise will then distribute the remaining shares according to a standard formula: management is allocated 5 percent of ordinary shares; the labour collective receives 25 percent of non-voting shares and has the option of buying another 10 percent at a 30 percent discount to book value. Up to 22 percent (of which 5 percent are for the local population) are sold to the public under the mass privatisation programme, involving the purchase

of shares in state industries with vouchers which were distributed free to all Russians at the end of last year.

Dmitri Romanov, deputy head of the GKI department for energy enterprises, says that the first vouchers could be used for purchasing shares in oil companies by September this year. Individual investors, companies or investment funds holding vouchers will be given the opportunity to buy shares in voucher auctions, which are the backbone of the mass privatisation programme.

## The 'Big Three'

The 'upper' level in the corporatisation process makes way for a more dynamic development in the Russian oil industry. This involves the creation of vertically integrated oil companies, dealing with upstream and downstream operations (but still excluding, initially, exploration and pipelines). These consist of production associations and individual enterprises which have decided to unite, outside the jurisdiction of Rosneft. Three of these companies have already been created: Lukoil, Yukos and Surgutneftegas (with production of 50 million tonnes, 40 million and 40 million respectively), accounting for about a third of the total Russian petroleum market.

Of the approximately 40 production associations in Russia, the majority will initially follow the lower level scheme, while only the bolder will adopt the upper. Of the 'Big Three' mentioned above, Lukoil encompasses the Langeepas, Urai and Kogalym fields and consists of production associations there, as well as the Perm and Volgograd refineries

and other enterprises; Surgutneftegas is based in the Surgut field, while Yucos is based in Yugansk.

The individual enterprises forming the big integrated holding companies contribute 38 percent of their stock to the charter fund of the new company instead of Rosneft, and distribute the rest of their shares in the same way as on the 'lower' level.

Once the holding company has been formed, the law stipulates that 45 percent is held as federal property and cannot be sold for three years. Then 15 percent are sold to the public in voucher auctions, also this year. The remaining 40 percent will be sold through auction tenders over the next two years. Foreign investors will be permitted to take part at this stage: though regulations for auction tenders remain to be worked out, it is envisaged that the foreign stake in a company should not exceed 15 percent.

### Rosneft rump

Enterprises which initially join Rosneft will enjoy it only as a temporary haven. The presidential decree foresees that over the course of three or four years, more of them will leave Rosneft and group together to form other integrated companies like 'the Big Three'. GKI and ministry officials predict that a total of 10 or 12 such companies will ultimately exist. 'This is about the realistic competitive milieu needed for the Russian oil business,' said Mr Romanov. Rosneft's role will diminish, ending up as a 'rump' state company, acting for production associations working on severely depleted reserves or needing state financing.

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### 'New companies will be able to deal directly with Western suppliers'

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While foreign investors will be given the opportunity to take up to 15 percent stakes in the large companies (some of which will rank alongside the biggest oil companies in the world in terms of crude production), it will not be easy to overcome the Russian fear of foreigners taking over local industries. This may explain why regulations for auction tenders have been slow in coming. Furthermore, the government foresees foreign participation in the voucher auction stage in both the lower and upper level schemes. GKI insists this is possible, though the Central Bank has yet to determine the process by which

foreigners can purchase vouchers. 'At the moment it is technically illegal', said Bruce Payne of Arthur Andersen's Moscow branch. 'This may be politically motivated, to slow down the process to keep foreign investors from being able to buy vouchers.'

GKI and ministry officials point out that the current privatisation and restructuring plan is designated to last for three years, after which regulations – including those controlling participation by foreign investors – will be re-examined.

In any event, by the end of 1993 the first steps will have been taken to move the oil industry out of the state's hands. Mr Payne agrees that the momentum now exists to begin dragging the industry out of its ever-deepening crisis: 'All things considered, this is a pretty good process. They have to get the power to make decisions down to the production associations and their directors, and that is what is being done...If the money these companies generate stays in the country, then they will be able to purchase their oilfield equipment, which is their biggest problem.'

While government critics say that privatisation of the oil industry will only encourage greedy managers to pocket huge profits, the stake being offered to managers is sufficiently high to give them an incentive to reinvest profits and accumulate wealth by increasing the value of their companies. This concept is entirely alien to the former Soviet management elite; however, successful privatisation in other sections of the economy has shown that the stereotype is beginning to break down and managers are generally welcoming the process.

Furthermore, the new companies will be able to deal directly with western suppliers, rather than going through the centralised government agencies which previously distributed funds for equipment. International leading agencies, such as the World Bank, EBRD and US Export-Import Bank, are granting loans direct to the production associations rather than to the ministry, which will also foster entrepreneurship and encourage direct links with international procurement and accounting firms.

### Knotty points

Several problems have been raised in connection with the government's restructuring plans. While the need for integrated companies has not been contested, the wisdom of production

associations joining forces with existing downstream operations could be more of a headache than a blessing. Mr Payne commented, 'The problem is that refineries need so much investment – in some cases up to a billion dollars and foreign investors would not touch them because of the environmental concerns; it may make more sense for the production association to try to build its own refineries.'

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### 'Practically all oil sector enterprises are crippled by debt'

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Secondly, the distribution of shares is unlikely initially to give effective commercial control to outside investors, meaning that the state may remain the sole master for lack of other large shareholders. The government, in what is essentially a political move, is trying to ensure the widest possible spread of shares to muster broad economic support. However, privatisation in other industries has shown too that shares bought in voucher auctions often rapidly come back onto the market, leading to a re-distribution of shares in favour of larger investors.

Thirdly, practically all oil sector enterprises are crippled by debt, amounting to several trillion roubles (billion dollars), owing money to suppliers and the state, as well as being owed by consumers. This problem has been compounded by former Soviet republics, which until July paid reduced prices for Russian oil, failing to settle their massive debts with Russian enterprises. In July, the government demanded payment from these republics at near-to-world prices but it is unclear how they will deal with the additional burden.

Financial woes have not been helped by continuing controls on the domestic price of crude, which remained unchanged from September last year till this July. The first move since then to begin liberalising domestic prices came in July, when President Yeltsin abolished punitive taxes on producers selling crude domestically at prices above a ceiling of 4,000 roubles (\$4) per tonne. Prices had reached about 20,000 roubles before abolition of the tax and were expected to rise to about 35,000 roubles in July. Any further rises are likely to be limited by the domestic market's sheer inability to pay. ■

# Consequences of Azerbaijan's latest military coup

By Juliette Rossant in Baku

**N**egotiations between foreign oil companies and Azerbaijan's new government are starting up after a suspension following the recent military coup. The new administration, headed by ex-communist leader Haidar Aliev and rebel commander turned prime minister Suret Husseinov, has assured the companies that talks will re-start after the contracts have been reviewed.

What is at stake is an estimated 4.4 billion barrels of crude in three major offshore Caspian Sea fields – Guneshli, Chirag and Azeri. The three fields are thought to be connected and constitute one large field. The Western consortium of oil companies led by a BP/Statoil alliance, Amoco, Pennzoil, and Unocal have been negotiating with the Azeri government through the state oil company (SOCAR) to develop these Caspian Sea fields.

At issue is whether to continue negotiations for the joint development of the Caspian Sea fields or to negotiate separate contracts with the oil companies, as was originally planned. In May, SOCAR agreed with the Western consortium to pursue a joint development plan for the fields.

The consortium announced in mid-June the participation shares they have accepted with SOCAR. According to the draft agreement, SOCAR has a 30 percent option and the percentages would be as follows: BP – 36.7 percent; Amoco – 24.31 percent; Pennzoil and Ramco – 17 percent; Unocal – 16 percent; McDermott International – 3.5 percent; Turkish Petroleum Corporation (TPAO) – 2.5 percent.

The eight-member consortium is pressing for the unitised plan which they argue would cut down start-up costs. 'You have one development plan and recover the most from reserves. It is cost saving and the bulk of the savings will go to the Azeris,' said one oil company executive. Negotiations are now taking place between deputy prime minister Rasul Guliev, in charge of oil operations, and the companies which are trying to convince the government to stick with unitisation which was agreed in May with the Elchibey government.

## Military coup

Problems for foreign companies in Azerbaijan started on 4 June when disgruntled rebel leader Mr Husseinov launched a rebellion in the country's second city, Gyanja, demanding the resignation of President Albufaz Elchibey. The popular millionaire 'businessman', Mr Husseinov, brought his forces to Baku meeting little resistance from government troops along the way. The president called in Azerbaijan's ex-communist leader Mr Aliev to help bring an end to the

political crisis. When negotiations broke down and the rebel troops had surrendered the capital, the president fled on 24 June to the Azeri enclave of Nakhichevan leaving Mr Aliev in control of the government. The Azeri parliament, led by Mr Aliev, appointed Mr Husseinov prime minister with broad powers.

Most observers in Baku link the Husseinov rise to power with growing Russian influence in Azerbaijan. Oil company executives express concern about the possibility of stronger Russian influence in the Caspian Sea republic. 'The war (in Nagorno Karabakh) is a result of the Russian thing which makes it more difficult to do business here.... Who are the Russians? How do you deal with this?' said one senior executive. Many executives, however, privately welcome the return of the ex-communist boss, believing that negotiations will be speeded up under a more authoritarian leadership. Others say solid ground work has been laid during the past three years' negotiations and that the current political turmoil is only a temporary hitch.

## Western oil hitch

Despite growing instability in Azerbaijan, the Western consortium of oil companies put up \$70 million on 22 June in good faith money to keep negotiations going. Mr Aliev put negotiations on hold freezing the \$70 million in an Azeri escrow account, saying that a draft agreement was 'nullified'. The payment of \$70 million represents one-third of the \$210 million that the companies agreed to pay eventually as a signing bonus. Pennzoil has also given the Azeri government \$90 million in natural gas production equipment and pipes.

SOCAR head Sabit Bagirov, an Elchibey appointee, quickly lost influence after the embattled president fled the capital and his resignation was accepted by parliament in early July. Mr Guliev, who was previously head of an Azeri oil refinery, is now negotiating with the foreign firms.

Foreign companies are concerned about the possible restructuring of SOCAR. If new inexperienced officials are put in charge and the restructuring takes time, the

companies risk further delays in the negotiations which started more than three years ago and have taken place under four different Azeri presidents. Several oil officials say it is still not clear who is in charge at SOCAR since no new oil chief has been named.

Once the unitised plan is accepted, the companies need to choose an operator before the final contract can be signed. After the contract is approved by the Azeri parliament, consortium members will contribute \$3 million per percentage point, according to their share of the project.

Oil company officials stress that nothing has been formally signed and that these numbers are up for re-negotiation with the Aliev government. Foreign oil executives say it looks unlikely that a new tender will be held for the three major Caspian Sea fields.

### Pipeline proposals

At a recent meeting of the economic co-operation meeting in Istanbul, Mr Guliev announced that the \$1.4 billion pipeline project to carry Azeri oil to the west is still under negotiation after original reports that it too was postponed. He said the pipeline would pass through Iran, Nakhichevan and Turkey to reach Mediterranean ports. Mr Guliev said the line 'could never pass through Armenia.' The project calls for a 1,060 km long pipeline to carry 40 million tonnes of oil a year or 800,000 b/d. The pipeline could accommodate Kazakhstan's oil production as well (See next article).

The pipeline was scheduled to be completed in two years

starting in early 1994. The proposed pipeline would run through Azerbaijan and then pass through Iran for some 60 kilometres and then cross the Azeri enclave of Nakhichevan. The line would continue through Turkey where it would join the existing Iraqi pipeline shut off in 1990 as a result of the Gulf crisis and then travel to Yumurtalik on the Mediterranean coast.

Any exploration contract signed by the foreign oil companies would include a proviso that guarantees construction of an export pipeline. 'These two are linked together. You need to have a lot of oil reserves tied up and committed to export then you can jump a big hurdle in your export pipeline,' said a senior oil executive. Foreign oil officials believe that other pipeline projects, through Iran to the Gulf, Georgia, Turkmenistan or up through Russia are now possible despite a memorandum signed by the Turkish government and the Azeris.

Other energy projects in Azerbaijan are continuing despite the change in government. Pennzoil is continuing with a gas utilisation project which it signed last October with SOCAR for the Guneshli field. Gas compressors for the project were loaded onto ships in the Gulf coast area in July from where they will be sent via Turkey and the Volga and Don river systems to the Caspian Sea.

The equipment should arrive in Baku by mid-August. In Azerbaijan work slowed following the American State Department's warning urging all Americans to leave the country. Pennzoil along with the other major oil companies evacuated most of their personnel who are now slowly starting to return to Baku. ■



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# Pipeline issues in Central Asia

By John Roberts

**T**he goal is very clear: to construct a pipeline that will bring oil from the Muslim states of the former Soviet Union to European markets. The problem is how to overcome the physical, financial and political problems that could prevent the swift attainment of this goal.

There are two main proposals for constructing oil export pipelines to the West. One, put forward by the Caspian Pipeline Consortium, seeks to bring crude oil from Kazakhstan and, particularly, the giant Tengiz oilfield, to a Russian port on the Black Sea. The other, particularly advocated by Turkey, contemplates construction of a pipeline from Azerbaijan to the Turkish-Mediterranean coast, with a possible eastward extension, so that crude from Kazakhstan and Turkmenistan could join the new pipeline at the Azerbaijani oil port of Baku.

Both projects are considerably advanced. Yet neither can be absolutely certain of achieving success. The Caspian Pipeline Consortium (CPC) faces two main problems. The first is its ownership structure which appears to favour the consortium's founders and the national governments through whose territory the pipeline would pass over the interest of the companies whose oil would flow through the pipeline and who would be the principal sources of finance for the project. The second concerns the nature of the route, since oil from the Russian terminal would then have to be taken by tanker to destinations in Europe. If Mediterranean destinations were envisaged, this would entail potential environmental and congestion problems in the narrow straits that constitute the Turkish Bosphorus.

The proposal favoured by Turkey, however, likewise faces major obstacles. It must either pass briefly through Iran, or it must pass through an area directly affected by the continuing conflict between Armenia and Azerbaijan over Nagorno-Karabakh, or else it must make a dogleg through high passes and insecure terrain in Georgia. It is also dependent on political stability within Azerbaijan itself.

At this stage, none of the problems confronting either of the projects has

been sufficiently resolved to ensure that either line will definitely be built. Yet it still seems likely that both will ultimately be constructed. The question is when, at what cost, and with what impact on long-term energy exports from Central Asia and Azerbaijan.

## The Caspian pipeline consortium

Until April, it appeared that the CPC project to construct an initial 300,000 b/d (barrels per day) crude oil pipeline from Tengiz to the Black Sea port of Novorossiysk, or possibly to an alternative outlet at Iron Horn, was the more advanced project. This no longer seems to be the case, although matters can change very quickly – as was shown in Azerbaijan in June when an army revolt triggered a change of government, forcing western oil companies to re-enter negotiations on concessionary agreements which they believed had virtually been completed.

The CPC project got off to a very rapid start a year ago when the consortium was established with the Oman Oil Company (OOC) and the government of Kazakhstan as founder members. OOC is the official foreign project arm of Oman and the Omani government owns it 100 percent. Its president is the somewhat controversial John Deuss, the Bermuda-based international oil trader.

The project was conceived with the specific intention of providing a route for the export of crude from Tengiz for which Chevron was negotiating an extraordinary complex development agreement. The Omanis helped to broker the final agreement between Chevron and the Kazakh authorities, and within days of the establishment of the CPC became formal associates of the pipeline project.

Last October, CPC announced detailed plans for the project to be complete by 1995 at a cost of around

\$1,150 million. The project was to be coordinated by Bechtel, with Willbros, the UK subsidiary of the US corporation of the same name, as principal pipeline construction manager. A planned second stage for the project would take capacity up to 800,000 b/d. Preparations were made to secure the formal approval of the Russian parliament for the project and all seemed well in hand. But in February, when the Russian parliament debated the issue, it was short of a quorum and the requisite bill thus failed to be passed at a time when moderate forces will seem to have the ascendancy. Current internal turmoil in Russia over constitutional reform and the possibility that a new constitution will lead to elections for a new parliament are likely to delay formal Russian approval for the project, although it does seem likely that President Boris Yeltsin's recent constitutional manoeuvres will ensure that extreme nationalist concerns will successfully be assuaged.

CPC still appears confident that all will be well. One adviser to the project, Dr Herman Franssen, has said a full feasibility study should be completed by the end of this year and that completion of an initial 300,000 b/d line is expected by the end of 1995.

However, there is, as yet, no indication that CPC has managed to resolve what appears to be its principal problem – the issue of its basic ownership structure. Richard Matzke, President of Chevron Overseas, said on 28 April that 'For my company, Chevron, the pipeline question is very urgent' but that the proposals of the Caspian Pipeline Consortium had bad points as well as good.

Mr Matzke told the author of this piece that he did not believe CPC's current corporate structure was a reasonable or appropriate structure for a body seeking to secure finance from both development and commercial banks. 'We want a pipeline system whose ownership structure is

financable', he said. 'The banks want guarantees that if you quit using the pipeline you will still have the cash to pay them off.' Chevron, he said, 'could agree to borrow much of the money needed for the project, but our debt and ownership must be in the same proportion.' He then added: 'In the case of CPC, the other shareholders will not guarantee the debt; they are counting on the shippers to provide that debt.'

What Mr Matzke says he is asking for is no more than the normal arrangement whereby the principal shippers of crude through a pipeline take a share in both ownership and responsibility for raising the project's cash.

He may have simply been firing a warning shot against CPC but it was noticeable that when he addressed the Black Sea Oil and Gas conference in Istanbul, Mr Matzke took great care to give equal consideration to all the specific pipeline projects on offer, saying 'We at Chevron are very happy to talk to any group with any proposal, as we seek to find the critical factors that will result in an economically viable system.' This was a far cry from the heady days of 1992 when Chevron's signing of a memorandum of understanding with CPC under which it would join the consortium at a later date had seemed to settle its preferred choice of a route for Tengiz exports once and for all.

Indeed, Mr Matzke was extremely careful to leave open the possibility that his company might choose alternative pipeline projects sponsored, amongst others, by the Turkish government to construct a line from Central Asia and Azerbaijan through the southern Caucasus to Turkey. The core of this route, the project to build a pipeline from Baku to Ceyhan (Yumurtalik), the Turkish oil terminal on the Mediterranean, received a significant boost with the establishment of a formal steering committee in April, comprising leading Western companies and official representatives from both Turkey and Azerbaijan. Further boosts to the project came with the intensification of efforts in May and June to negotiate a cease-fire in the war between Armenia and Azerbaijan over Nagorno-Karabakh. Then the Azerbaijani government collapsed, raising questions as to whether the fall of one government in Baku also meant the collapse of much of Turkey's influence in Azerbaijan.

### **The Caspian-Mediterranean pipeline system**

On several occasions over the last

year, Turkey's state-owned Botas pipeline company has put forward increasingly detailed proposals for the construction of a pipeline from Azerbaijan to Turkey. Indeed, at one point in 1992, after CPC representatives had visited Turkey for talks with Botas, it was erroneously assumed that CPC and Botas were actually working on a common project. This is not so. The proposals put forward by the Turkish company are for an orthodox company to be established that would build, own and operate a proposed 1,060-kilometre line from Baku to Ceyhan.

On 9 November 1992, the state oil company of Azerbaijan and Botas together with three of the principal companies involved in developing Azerbaijan offshore resources, BP, Pennzoil and Amoco, agreed to set up a working group to study export routes for Azerbaijani crude. After dismissing the possibility of taking the crude by pipeline to export terminals on the Black Sea (either at Novorossiysk in Russia or at Poti in Georgia), they opted for a line that would terminate at the existing Turkish-Mediterranean oil terminal of Ceyhan (also known as Yumurtalik).

From early days, the Caspian-Mediterranean Pipeline System, as the proposal is called, was planned to serve not only the new offshore Azerbaijani oilfields but also to provide a major outlet for crude oil from Kazakhstan and Turkmenistan, via a connecting trans-Caspian pipeline from Krasnovodsk to Baku.

It is also seen as the precursor of a much more ambitious project to construct a gas line from Central Asia to Turkey, a line which would follow the same route as the oil pipeline until it entered Turkish territory, at which point it would turn west towards Ankara and Europe while the oil pipeline headed southwest towards the Mediterranean.

On 9 March, the governments of Turkey and Azerbaijan signed an agreement on the construction of a \$1.6 billion pipeline that would have a capacity of 40 million tons per year (800,000 b/d) and would run from Baku to Pump Station No.4 at Midyat on the existing Iraq-Turkey pipeline. Initially, Azerbaijani crude would be expected to flow through one of the IT pipes, which are both owned by Botas. Eventually a third pipe is expected between Midyat and the oil terminal at Ceyhan.

The pipeline's projected capacity is significantly higher than the initial estimates of Azerbaijani export capacity, which Turkish sources

believe will likely total around 500,000 b/d by around 1996, when the pipeline might be operational. The balance would come from Kazakhstan.

### **Route problems**

The biggest problem confronting the Turkish project is that the working group does not know how to bridge the few score kilometres between the main part of Azerbaijan and Turkey. From Baku to the Azerbaijani hinterland it would largely follow the north bank of the Araks river, which constitutes the border between Azerbaijan and Iran. Since the Araks actually rises in Turkey, the river route is a logical choice in terms of geography and relative ease of construction. But political difficulties mean that for a key stretch in the middle, there are three main alternatives, each suffering from different political problems. In geographical order, these run from south to north as follows:

- **A route that would cross over** the southern bank of the Araks river and pass through Iran for 65 km between the main part of Azerbaijan and its physically separate autonomous province of Nakhichevan. From Nakhichevan there is a small, but direct, land border with Turkey.
- **A route that would continue** along the northern bank of the Araks, but which would then of necessity have to enter Armenia for 40km before reaching Nakhichevan and then passing on to Turkey.
- **A route that would entail** leaving the Arak valley at a much lower point and making a dogleg to the north that would add an extra 100km to the route to take the pipeline into Georgia before bringing it back into Turkey at a more northerly point than the intended entry at the Nakhichevan border.

The companies currently negotiating to develop Azerbaijan's oilfields are not happy at the prospect of their oil traversing Iran. For essentially political reasons, the Turks also are highly reluctant to have the line pass through Iran. But further north the conflict between Armenia and Azerbaijan over the disputed territory of Nagorno-Karabakh, which is predominantly populated by Armenians but is an autonomous province of Azerbaijan, makes it not

only diplomatically difficult, but militarily dangerous to construct a line through Armenia. Not the least of the problems posed by this route is that it would pass very close to Nagorno-Karabakh itself and to actual battlefield areas in which Armenian and Azeri forces have been fighting each other.

The Georgian option faces similar problems because of civil strife and banditry in that country, whilst there are also unresolved territorial issues between Georgia and Azerbaijan. In addition, it poses problems since it would bypass Nakhichevan, where the Azerbaijanis are hoping to construct a small refinery to serve the province's local needs. This is an extremely important point since Nakhichevan is the home fiefdom of Haidar Aliiev, the former Soviet Politburo member brought to power in Baku by the June revolt. However, there is a prevailing assumption that any Azerbaijani government, virtually regardless of its political complexion, would like to see Baku become the Caspian Sea focus for energy export routes to the West, and that the Aliiev government will therefore continue to back the Turkish pipeline proposal.

Yet there remains no clear choice concerning the actual route. Indeed, current thinking on the issue veers alternately between two main options. One is for construction of twin pipelines along the north and south banks of the Araks – on the assumption the political circumstances would probably ensure at least one of these two lines was open at any given time; the other is for the Georgian route if some form of effective policing of the pipeline can be arranged.

The Turks remain confident that their project, because it is framed in a conventional manner, will succeed.

But while Botas and the companies negotiating to develop Azerbaijan's resources now have in place a well-established working group that has initiated detailed engineering studies of the project, they have not resolved the core issue of how to pass through the political and military minefields of the Southern Caucasus. Nor is it yet clear what support they have from the authorities in Kazakhstan for their project, which is intended to carry crude from Kazakhstan and other central Asian republics to the West as well as Azerbaijan's own crude. The Kazakhstan government appears to be taking the eminently sensible attitude that it will back both projects and will allow its oil to be exported through whichever of the schemes actually comes to fruition.

There is a company called the Kazakhstan Pipeline Company with which Turkish officials say they have been in contact with a view to linking up the Baku-Ceyhan line with an outlet from Kazakhstan. But it is far from clear that the West European partners in the Kazakhstan Pipeline Company represent the Western firms that are actually drilling for oil in Kazakhstan in the way in which the Caspian Mediterranean Pipeline System is known to represent the companies drilling in Azerbaijan.

### Difficult path

In the end, the financial conditions as well as the political conditions will have to be satisfactory if either line is to be built. The European Bank for Reconstruction and Development had assured the government of Kazakhstan that it is prepared 'to lead or participate in the analysis and financing of the project' to increase the country's oil exports. This affirmation was conveyed at the time when the CPC project appeared to be the more advanced and, indeed, Mr Deuss is understood to have shown prospective backers further letters indicating the bank's willingness to provide specific financial support for the CPC pipeline project.

But it is at least equally significant

that steering committee meetings for the Azerbaijani-Turkish project have regularly been attended by EBRD officers and that international financiers appear to be happier with the intended corporate structure envisaged for the Turkish project than with the current corporate structure of CPC.

But in neither case is anything yet set in stone. If political factors turn out to favour the northern route, then it is quite possible that Chevron and CPC could reach an accommodation concerning any Chevron stake in the consortium and its proportionate responsibility for the consortium's debts. But if the conflict between Armenia and Azerbaijan were to be settled, then both the likely corporate structure of the Turkish project and its avoidance of further problems concerning pollution and congestion of the Bosphorus would give it an overwhelming advantage.

At this stage, just one year after serious planning began on both projects, it looks as though the goal remains as clear as ever, but with nobody yet able to say for certain just how it will be attained. ■

John Roberts, Editor of *Middle East Monitor*, has just completed a study, 'Pipeline Politics in Central Asia and the Caucasus' for the Petroleum Finance Company, Washington DC.



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# New publications on Russia

**O**il and Gas in the Former Soviet Union: The Changing Foreign Investment Agenda, Jonathan P Stern, Royal Institute of International Affairs, London, 1993, £9.50 (£70.00 for the Series of 10 Post-Soviet Business Forum);

**T**he Russian Oil Industry: Status and Outlook, Smith Rea Energy Analysts, Canterbury, 1993, £900 (\$1,500 Overseas, carriage included); **The Russian Gas Industry: Status and Outlook**, Smith Rea Energy Analysts, Canterbury, 1993, £600 (\$1,000 Overseas, carriage included). Both of these publications can be purchased together for £1,200 (\$2,000 Overseas, carriage included).

Jonathan Stern's study is an auspicious opener to the Second Series of Chatham House's outstandingly successful Post-Soviet Business Forum. Edited by Neil Malcolm (Wolverhampton University), the First Series persuaded academics to combine into 60 or so A4 pages a distillation of long expertise with the infusion of current politico-economic analysis; the draft is reviewed by a specialist Study Group, drawn from business and government as well as research, and quickly emerges in final form some dozen weeks later. This formula won a wide readership and, under the editorship of David Dyker (Sussex University), is to be repeated for a Second Series. The only apparent change (shown by an appendix in the book under review) is the inclusion of authors from the world of business: Jonathan Stern is the first monographer from that group. There is no one more qualified than he to analyse prospects for hydrocarbons in Russia, the Caucasus and Central Asia – he has the knowledge of technology, the caution of a long-term Sovietologist and a dispassion setting him apart from host-country influences.

In a succinct 'Introduction' and concluding chapter he offers a corporate president or board the pros and cons of involvement now. Upstream, Siberia and Central Asia have vast oil and gas reserves – one gas field is in the 'super-giant' category and oil deposits 'would make headlines anywhere else in the world'. Downstream is access to a consumer

market which must eventually change toward the magnitude and product-mix of a West European type. The author is pessimistic on major export prospects because of the uncertain viability of the very long pipelines needed for crude, products or gas: the factors include political or fiscal blocks within the former Soviet frontiers and Western company sourcing in more familiar territories. In a list of 93 links with foreign companies (26 in Commonwealth of Independent States elsewhere than Russia) he does not separate equity from contractual relations. Kazakhstan and Turkmenistan offer substantial joint venture stakes but the only entrée for Western firms into Russian oil production seems to be minority equity in small deposits and service contracts in big deposits.

Such is the message of the Smith Rea-Infoservice volumes. 'Based exclusively on Russian sources' (Oil) and 'researched and written by Russian experts' (Gas), the substantial twin volumes have been well translated and edited but fall short of being mini-encyclopaedic.

Following former Soviet usage, oil production and reserves are in tonnes but without specific gravities (data on any technical characteristics are exiguous) there is no accurate conversion to barrels. Fuller technical information in Gas is one sign of non-uniformity between the two books. Thus Oil is frank and detailed on pipeline accidents but so far as Gas is concerned the problem does not exist. On the topics chosen by

each for coverage, however, there is a rewarding array of facts.

Oil counters 'the assessment of some Western experts' that proven reserves were about 15 years with the statement that reserves proven by 'separate independent exploration wells' are 55-60 years for Russia. Two short-run scenarios are given for production, starting with 385.4 million tonnes in 1992 and dropping to a minimum of 270 million and a maximum of 300 million tonnes in 1995. Producing wells in Russia have dropped from 91.1 percent of the production stock in 1986 to 78.2 percent in 1992 (in Tyumen from 87.9 to 69.1 percent). Gas cites proven reserves at the beginning of this year at 48 trillion cubic metres and are forecast at about 55 trillion by the year 2000. At the reported 637 billion cu.metres extraction in 1992 and a Gazprom plan of 792 billion in 2000, those reserves are respectively and respectably 75 and 69 years production. Both volumes provide details of institutional structure, with agency telephone (but not fax) numbers and the names of key personnel, and scope for foreign involvement. There are no plans for privatisation, although there will be corporatisation, and while direct investment in equipment production is said to be welcome, the Russian oil industry mainly expects only risk-sharing contracts and the gas industry only credits tied to repayment in gas. ■

Michael Kaser,  
St Antony's College, Oxford.

# Government stands firm on Budget changes

By Susannah Cardy

Opponents of the UK Budget changes are having to face up to the fact that the Petroleum Revenue Tax (PRT) debate is now closed and, despite top-level lobbying, backed by senior Tory backbenchers, no significant concessions on transitional arrangements have been won.

Between Budget Day, with its 'bombshell' announcement for the North Sea fiscal regime (see April issue *Petroleum Review*), and the passing of the Finance Bill by 311 votes to 274 last month, Financial Secretary to the Treasury Stephen Dorrell received visitations from a continuous stream of top oil industry representatives. Most came away feeling he had listened carefully to their arguments and that meetings had been constructive but only once throughout four months of furious lobbying did he actually make any concessions.

In June, Mr Dorrell announced he would be extending short-term help to companies worst affected by the withdrawal of tax relief on exploration and amendment wells. Under new amendments to the Finance Bill, he allowed companies to claim up to £10 million each until the end of next year for exploration work affected by the changes. This will undoubtedly benefit the smallest companies but is of no assistance to those incurring expenditure on 14th Round licences, as relief is only granted for licence interests held on Budget day, nor is it of much use to the bigger firms with their extensive E&A programmes. A month after the amendment was announced, a spokesman for Amerada Hess, which has spearheaded the campaign against the budget changes, said the firm had 'probably spent its allowance already'.

A last-ditch attempt was made during the Third Reading of the Finance Bill to win further concessions. Six Conservative MPs, led by John Watts, chairman of the Treasury and Civil Service Committee and Sir Cranley

Onslow, former chairman of the 1922 Backbench Committee, tabled a group of amendments calling for a three-year transition period and an increase in the cap of £10 million. In exchange, the PRT rate was to be set at 55 percent until 30 June 1996, when it would drop back to 50 percent.

The furore surrounding this 11th-hour move was heightened all the more when an internal Shell memo, revealing a 30 percent reduction in its exploration division staff, was leaked to the national press just days before the Third Reading. (Shell, which supports the tax changes, subsequently denied that the cuts were a result of the Budget announcement.)

The Watts move, however, was a failure. Mr Dorrell told the Commons that the tax treatment of pipelines was the one and only area ministers were prepared to reconsider and, amidst taunts from Scottish opposition MPs that the Tory backbenchers had bungled their attempts to gain a last-minute deal, MPs gave final approval to the Finance Bill.

Mr Dorrell's determination to stick to the PRT changes has been plain throughout. At a conference held last month, he angered Budget 'losers' by saying that stories of the death of exploration and appraisal were 'frankly greatly exaggerated'. Facing an audience which included

representatives from the Association of Service Sector Oil-Related Companies (ASSOC) and the International Association of Drilling Contractors (IADC) – both organisations claiming to be badly hit by the changes – Mr Dorrell suggested that heavy job loss figures were



**Treasury minister,  
Stephen Dorrell:  
'Stories of the death of  
exploration are frankly  
greatly exaggerated'**



**Amerada Hess finance director, Francis Gugen: 'The swing, if not too far, is too fast'**

excessively pessimistic and net job effects would in fact be small. 'I am struck', he added, 'by the almost universal acceptance that the thrust and direction of the reforms are right'.

**Heated debate**

The arguments for and against the PRT changes have been well-rehearsed over the past four months. On the one side, we have heard of an 'anachronistic' tax regime, divorced from the realities of lower oil prices, that had to end; on the other, predictions of a 50 percent reduction in E&A activity

and job losses of anything up to 40,000 as a result of the changes.

However, having plumped for a lower PRT rate and the corresponding abolition of exploration relief, it was Mr Dorrell's refusal to then accept any real form of compromise over transition that has most frustrated those sectors of the oil industry opposed to the changes. 'At the end of the day it's for the nation to decide whether or not we should favour production over exploration but what the government has done is to swing the fiscal pendulum towards production almost overnight', said Mr Francis Gugen, Finance Director at Amerada Hess. 'Why cut PRT from 75 percent to 50 percent in one go without trying 60 or 65 percent first?', asked Mr David Morrison, Director of Wood Mackenzie Consultants. 'It's a hell of a giveaway if we're not sure whether we're letting go of our economic rights,' he added.

'The government only talked to the major oil companies', said Mr Dennis Krahn, Director of European Offshore Affairs at the IADC. 'They committed themselves to a course of action and didn't calculate the effects further down the supply chain.'

Mr Douglas Lamont, who founded the service sector union ASSOC in response to the Budget announcements, said the government had failed the industry. 'The clearly expressed concerns of the oil service sector have effectively been put to one side.'

BP, on the other hand, has firmly backed the government's resistance to further concessions. 'If something's right', said Mr Angus MacMillan Douglas, Head of Government Affairs, 'you get on with it'.

Those campaigners with any energy left are now turning their attention towards the autumn Budget. Some industry sources suggest that the new Chancellor could decide to take a softer approach to concessions but, in a Budget that has always promised to be 'tough', there is likely to be very little room for manoeuvre. Certainly, Mr Dorrell was determined to kill off any idea of a rethink in November. Closing the debate on the Third Reading, he warned that nothing could be more damaging to North Sea exploration and jobs than to lead firms into thinking they might get a better tax deal if they delayed. ■



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**An Exhibition by Manufacturers will be run in parallel with the conference at The Institute of Petroleum on Wednesday 24 November from 16.00 to after lunch on Thursday 25 November 1993.**

**Presentations will be based on operational experience and will include:**

1. A comparison of the options for control of emissions from above-ground storage tanks.
2. Road tanker vapour collection system design.
3. Vapour collection systems at road loading terminals – the options available.
4. Systems available to permit vapour collection for rail and marine loading.
5. Safety issues including ignition propagation within vapour piping systems.
6. Options for the design of Stage 1b installations.
7. The Stage 2 systems available and experience of their use in Europe and the United States.

*For further information, and a copy of the registration form which will be available shortly, please contact **Caroline Little**, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR. Tel: 071 636 1004. Telex: 264380. Fax: 071 255 1472.*

# Coalbed methane – fuel of the future?

By Susannah Cardy

The recent agreement between Amoco and Poland to explore for coalbed methane (CBM) in 120,000 acres of coalrich land in Upper Silesia is the latest indication of a growing interest in CBM exploration throughout the world.

'With the signing of this historic agreement', announced Mr Karl Arleth, President of Amoco Poland, 'the people of Poland and Amoco will share in the exploration for a unique energy resource that can have a powerful effect on Poland's economy and environment'.

Amoco is to drill a minimum of 15 wells in the Upper Silesian coal production region over the next three years at an estimated cost of \$10 billion, with the possibility of renewing the agreement for an additional three-year period. The company will fund all exploration costs, while the Polish government will have the 'option to acquire an interest in the project' if commercial production is established.

It is the latest example of how coalbed methane exploration is hotting up throughout the world. Development activity is taking place in Australia, India, Zimbabwe, China, Britain and Hungary, as well as Poland and the United States. Yet, finding methane gas in economic quantities is rare. Of the 15 coal-bearing basins that Amoco has evaluated worldwide, only the Black Warrior and San Juan basins of the United States are commercially viable. So why the interest?

CBM wells, which tap into methane gas trapped in coal seams, take a long time to reach their peak rate compared with conventional natural gas operations and are not as prolific. Another drawback is the amount of water produced. In the United States, the problem is further compounded by low natural gas prices. Coalbed methane, therefore, is often perceived as a tax-credit driven exercise. Development of both the Black Warrior and San Juan basins has been heavily dependent on the

very favourable tax subsidy established by the Crude Oil Windfall Profit Act 1980.

Similarly, Amoco will not go ahead with full-scale involvement in Poland until 'certain tax and foreign exchange issues' have been ironed out.

Last year, US coalbed methane producers were actually netting more income from the tax credit than from the sale of methane itself and threatening conventional natural gas markets in the process. This favourable regime is set to continue. For wells drilled before the end of 1992, the credit will remain in force until the year 2002.

## Enormous potential

Companies in the vanguard of this relatively new industry, however, are confident that coalbed methane has enormous potential in its own right. CBM gas is now estimated to account for some 17 percent of total recoverable gas reserves in the United States. While credit still plays a major factor in the viability of the Black Warrior basin, which has a production rate of 25 million standard cubic feet of gas per day (scfgd), the San Juan, currently producing a substantial 360 million scfgd, is commercial in its own right.

The self-sufficiency of the American basins has been further boosted by a turn in the gas market. After plummeting between 1990 and 1992, the rate rose from \$1.40 per 1,000 scfg last year to \$2.40 this year and is expected to average out at \$2.00.

Coalbed methane production in the United States also has certain advantages over conventional natural gas. Wells are typically shallower (less than 4/5,000 feet), so drilling is cheaper and there is a lower exploration risk.

British coalbed methane explorers are equally confident of the future. Puffin Oil, for example, is utilising its US experience in coalbed methane to help with three UK licences near Wolverhampton, Cardiff and Manchester. Exploration work has already begun, with drilling expected to commence next year. By the time these wells come on stream, Managing Director John Garratt predicts they will be replacing some of the ageing North Sea gas fields.

'Coalbed methane is still seen as a new-fangled, off-the-wall idea by some but it is a fuel with enormous potential in the UK, which in the future will be producing a significant percentage of our energy needs', he said.

He pointed to Britain's high, stable gas prices and large coal reserves as evidence of the country's potential for significant CBM production. 'British coal basins have similar or better conditions for methane gas production than the best coal basins in the USA and extensive research suggests that coal gas methane fields can be developed at a fraction of North Sea oil or gas projects', he added.

And what of Poland's prospects? No exploration will go ahead until its fiscal regime for oil and gas has moved in line with the tax laws of the West but Amoco is confident that this will be achieved without too many hitches. 'The Polish government wants to attract more foreign investment. Therefore one of its goals is to create a more favourable tax structure', said a spokesman. Once negotiations are complete, the firm predicts that its new contract area has the potential to match the scale of San Juan – currently the most productive coalbed methane basin in the world. ■

# Independent Bulk Storage



This year more companies than ever, particularly in mainland Europe, have responded to the questionnaire from which we compile this survey. The result is that we are not far short of achieving our aim – to include every independent bulk storage company operating in Europe. Anyone who has had the misfortune to be omitted is asked to make themselves known to us – for inclusion in next year's survey.

European storage is vital, big business, since it represents one-half of the world total. Earlier this year an association of European independent tank storage companies was established in order to be able to put forward a common viewpoint and to speak with one European voice. This association is called the Federation of European Tank Storage Associations (see page 372).

The unending recession, company takeovers and rationalisations, and the sale of storage tanks to oil companies continue. However, the development of more storage in Eastern Europe, particularly in the Former Soviet Union, is still a likely prospect, though perhaps not at an early date.

## More companies featured this year

### Petroleum Bulk Storage Owned by Independent Companies in Western Europe

Country	Capacity (m <sup>3</sup> ) 1993	% of total
Belgium	1,899,130	5.10
Denmark	354,000	0.95
Eire	30,000	0.08
France	7,620,000	20.6
Germany	7,149,400	19.3
Italy	112,500	0.30
Malta	419,000	1.1
Netherlands	13,919,214	37.6
Portugal	87,000	0.23
Spain	97,000	0.26
Sweden	1,633,000	4.4
Switzerland	346,000	0.93
UK	3,382,707	9.13
<b>Total *</b>	<b>37,048, 951</b>	<b>100.00</b>

\* Percentages may not add up to 100 due to rounding off.

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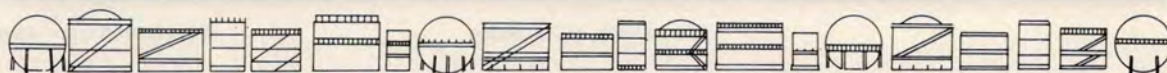


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## ANTWERP GAS TERMINAL N.V.

Land Van Waaslaan 3, 9130 Kallo, Belgium.

*Tel: (3) 755 10 09. Telex: 73153. Fax: (3) 755 03 25.*

The terminal is situated on the left bank of the river Schelde behind the Kallo Lock. Four berths are provided, two for ships and two for barges. Vessels up to 75,000 cu. metres can be accommodated. Tankage consists of two fully refrigerated tanks of 50,000 cu. metres each, designed to handle propane, propylene, butanes, butadiene and butylenes.

The terminal can offer a full range of services including receipt and despatch by ship, pipe, barge, rail and road tanker, ship to ship transfers and refrigerated to pressurised movements via fired heaters.

The terminal is strategically positioned to give ready access to a large market area via road, rail, canals, rivers and coastal movements.

## BARROW STORAGE CO LTD

Head Office: 25 Fitzwilliam Square, Dublin 2, Eire.

*Tel: (010) 3531 763524. Fax: (010) 3531 614704.*

Three installations: One at Marshmeadows, New Ross, Co. Wexford, Eire. Storage for 16,000 cu. metres of petroleum products, including LPG. The berth on the River Barrow provides for vessels up to eight metres draught. Tankage includes 4,500 cu. metres tank which is heated and insulated. One at Dundalk with 2,500 tons of gas oil and kerosene. A sea fed chemical storage plant in Tivoli, Cork with 2,000 tons of caustic liquor soda and plans for further chemical, oil and LPG extensions.

## BRITISH FUELS LTD

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## BTP STORAGE LTD

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*Tel: (061) 775 3945. Telex: 669938. Fax: (061) 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 10,000 cu. metres with a range of tanks up to 6,000 cu. metres capable of handling most types of petroleum and chemical products. Blending, packaging, drumming and weighbridge facilities available. Rail sidings for up to 1,000 tonnes. Berth: maximum draught 24.5ft approximately 8,000 tonnes. Easy access to the M6 and M62 motorways.

## CHEMICAL MANUFACTURE & REFINING LTD

Sunderland Tank Storage Division, Hendon Dock, Sunderland, Tyne & Wear, SR1 2ES, UK

*Tel: (091) 564 1889. Fax: (091) 514 0628.*

The terminal can receive ships of up to 6,000 tons dwt capacity and has mild steel and stainless steel import lines. 36,000 cu. metres of storage are contained in twenty 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.

## COMPAGNE INDUSTRIELLE MARITIME (CIM)

36, rue de Liege, 75008 Paris

*Tel: Paris (1) 43 87 33 49. Telex: 280330 CIMDGA. Fax: Paris (1) 43 87 43 08.*

*Contacts: Mr B. Salaün (Sales Manager) Direct Line: Paris (1) 43 87 43 14. Fax: Paris (1) 42 94 02 81.*

Mr C. N. Malcolm (CIM Representative), *Tel: (071) 491 3911.*

CIM is an independent French company which owns and operates a modern and highly sophisticated storage, transhipment and breakbulk 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 cu. metres. At Antifer, only crude oil tonnage in excess of 250,000 tons dwt is handled with the port being able to handle the world's largest tankers. At Le Havre, the smaller crude oil carriers (under 250,000 tons 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 their clients' confidentiality.

CIM now owns all equipment at the Antifer Terminal, which consists of four tanks of 150,000 cu. metres each, and two of 22,500 cu. metres each with an overall capacity of 645,000 cu. metres. Access is by sea. Sea berths with draughts of 98ft and 82ft respectively. Facilities for discharging ULCC-type vessels up to 550,00 MT and for transhipments.

## COMOS TANK B.V.

Octaanweg 14, 1041 AN Amsterdam, Netherlands.

*Tel: (20) 587 2121. Telex: 13121. Fax: (20) 587 2150.*

A subsidiary of VTG Vereinigte Tanklager und Transportmittel GmbH. Operates a terminal with an overall capacity of 700,000 cu. metres for storing all petrochemical liquids and solvents. Tanks range from 3,500 to 40,000 cu. metres, some coated or insulated and equipped with heating-

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## DEPOTS PETROLIERS DE FOS SA

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Tel: (33) 42 47 65 00. Telex: 430235. Fax: (33) 42 05 11 54.

DPF, a company in which Van Ommeren Tank Terminals has a share, has one installation in France, at Fos-sur-mer. The terminal has 780,000 cu. metres in 40 tanks. 100,000 cu. metres dedicated to dirty products in tank ranging from 5,000 to 10,000 cu. metres. Most of them are insulated and equipped with propellers. Tank connections enable any kind of blending. 680,000 cu. metres dedicated to clean products, mostly gas oil, gasoline, jet fuel and MTBE. Facilities offered by DPF make it the most interesting terminal in West-Med to achieve any kind of blending from lead, butane or MTBE injections in the gasolines range to changing cold properties, sulphur content, flash point in the middle distillates range. Seagoing vessels (3 berths up to 71 feet), coasters (1 berth up to 21 feet) and barges (1 berth up to 10 feet) can be handled in all products. Pipeline connections enable cargo to be transferred from any local refinery to DPF and from there to the Rhône valley and to Switzerland. DPF is handling about 250 trucks and one block-train per day.

## DS-MINERALÖL GMBH

Cuxhavener Str. 42/44, P.O. Box 106149, D-28061 Bremen.

Tel: (49) 421 396 99-0. Fax: (49) 421 396 99-79. Telex: (41) 246 448 dsd.

DS-MINERALÖL GMBH, 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 cu. metres. These modern facilities offer every possibility for a comprehensive distribution system for mineral oil

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## DUPEG

Terminal: Tankweg 4, D-21129 Hamburg, Germany.

Tel: (+49 40) 740 440. Telex: 0217656. Fax: (+49 40) 740 1703.

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

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Individual tanks of 20 to 10,000 cu. metres, including 26 stainless-steel tanks totalling 17,500 cu. metres. By the end of 1994, on completion of the second stage, another 10 tanks with a capacity of about 13,200 cu. metres will have been added to a total of 36 stainless-steel tanks with 30,700 cu. metres.

DUPEG's operational management system is designed to comply 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 in at the Port of Hamburg.

Transport links include: two pontoon bridges for ocean-going ships of up to 35,000 GRT (depth of water: 10 metres). Container ramps and lighter berths for handling balled cargoes. Own sidings complete with tank wagon filling station. Linked to European motorway system via neighbouring A7 Autobahn.

## ENEMALTA CORPORATION

Petroleum Division, PO Box 6, Hamrun, Malta.

Tel: 871443. Telex: 1735/1219. Fax: 243055.

Twenty-four tanks with a total capacity of 245,000 cu. metres. Eight tanks ranging in size from 10,000 to 20,000 cu. metres and 16 tanks from 5,000 to 10,000 cu. metres. Reception tank for clean ballast, maximum 4,500 tons. Gas oil, jet/kerosene, low viscosity fuel oil. Three berths for vessels up to 50,000 tons dwt; maximum draught 36ft; maximum length 750ft. Separate pipelines for each product, 12-inch to 18-inch. Simultaneous receipt/loading of products possible. Twenty-four hour, seven day service. Centrally situated in the Mediterranean. State-owned. Responsible for all import storage and distribution of petroleum products in Malta.

## EUROGAS TERMINALS BV

Head Office/Terminal: PO Box 410 4380 AK Vlissingen, The Netherlands.

Tel: (0) 1196 12820. Telex: 55684. Fax: (0) 1196 13444.

The terminal has 130,000 cu. metres capacity for storage of LPG and chemical gases, six spheres of 3,369 cu. metres each, and two refrigerated tanks of 55,500 cu. metres each. There are three jetties for sea-going vessels and barges (draught up to 52ft). Board/board operations for a wide range of gases for vessels/barges are possible.

Furthermore, there are facilities for the purging of vessels/barges/trucks/trains with nitrogen including flaring off. There is an open connection to the sea via the Westerschelde and there are good connections to the hinterland by rail, road and water.

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Tel: (3) 5684511. Telex: 32459. Fax: (3) 5684595.

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

**Antwerp:** The terminal offers 143 tanks with a total capacity of 486,100 cu. metres for mineral oils, petro-chemical liquids and chemical gases. There are four jetties for seagoing vessels (draught 43ft) and two for barges. Access is by sea, rail and road. Tankage is insulated, coiled, coated and stainless steel with steam, warm-water and oil heating. Tanks for chemical products are equipped with dedicated pipelines and pump and most of them with vapour return. Pre-pump, blending, drum filling and nitrogen blanketing are also available.

## GATX TERMINALS LIMITED

Nicholson House, High Street, Maidenhead, Berks SL6 1LQ, UK.

Tel: (0628) 771242. Telex: 847862. Fax: (0628) 771678.

A wholly owned subsidiary of GATX Terminals Corporation of the USA. Operates eight terminals in the UK. Subsidiary: Manchester Jetline Limited. Associates: Tees Storage Company Limited; Unipen Limited; Wymondham Oil Storage Company Limited.

**Avonmouth, Bristol:** Fifty-three tanks with a total capacity of 135,232 cu. metres, from 311 to 6,900 cu. metres in size, for high and low flash petroleum products, chemicals, molasses and oils

and fats. Dock facilities comprise seven berths at the Royal Edward Dock (depth 32ft, maximum length 690ft, maximum beam 95ft), five piggable docklines (three 10 inch lines, one 24 inch line for molasses and one 8 inch s/s line) and 18 dedicated m/s lines. Distribution is through fully automated top and bottom road loading facilities. Wensat pipeline connection. Access to British Rail network. Easy access to M4 and M5.

**Belfast:** Forty tanks with a total capacity of 50,290 cu. metres from 95 cu. metres to 5,000 cu. metres in size for high and low flash petroleum products, chemicals, latex and oils and fats. A new jetty which will handle vessels with 18/20,000 ton cargoes is currently under construction and should be operational end 1993. Two 8 inch s/s docklines and separate lines for fuel oil, latex and tallow. All lines are piggable. Distribution through fully automated top and bottom loading facilities. Easy access to M1 and M2.

**Bromsgrove, Worcestershire:** Rail-fed terminal. Nineteen tanks ranging in size from 35 to 1,350 cu. metres with a total capacity of 16,000 cu. metres, for high flash petroleum products. Capable of handling 1,400-ton block trains. Distribution through self-service road loading facilities. Easy access to M5 and M6.

**Eastham, Merseyside:** Seventy-nine tanks with a total capacity of 276,700

cu. metres from 50 to 10,800 cu. metres in size in mild and stainless steel and aluminium, for high and low flash petroleum products and chemicals. Dock facilities consist of three berths in the QEII Dock (depth 33ft, maximum length 670ft, maximum beam 90ft) with seven piggable dock lines (two 6 inch s/s lines, one 10 inch s/s line, one 10 inch m/s line, two 12 inch and one 14 inch). Distribution is through self-service road loading capable of handling 550 gallons per minute and rail sidings capable of loading and discharging 1,000-ton block trains. Easy access to M53, M56 and M6.

**Grays, Essex:** Fifty-two tanks with a total capacity of 311,000 cu. metres from 1,700 to 20,800 cu. metres in size, for high and low flash petroleum products and some chemicals. There are two jetties (Wouldham Nos. 1 and 2, depth 37 ft at low water, maximum length 750ft, beam unrestricted) with five piggable docklines - three 10 inch, one 12 inch and one 14 inch. Distribution through fully automated top and bottom road loading facilities together with a substantially enlarged marshalling area allow for rapid vehicle turnaround. Rail sidings capable of loading 1,000-ton block trains. Easy access to M25.

**Runcorn, Cheshire:** Four tanks with a total capacity of 40,000 product tons for heated liquid sulphur. Dock

GATX's Eastham terminal



'93



# Independent Bulk Storage

facilities comprise one jetty on the Manchester Ship Canal. Distribution is through road loading on two automatic weighbridges. Easy access to M53, M56 and M6.

**Leith, Scotland:** Thirty tanks with a total capacity of 67,900 cu. metres, from 55 to 13,400 cu. metres in size for high and low flash petroleum products and chemicals. Dock facilities comprise one berth (depth 31ft, maximum length 650ft, maximum beam 100ft) with two new 10 inch mild steel petroleum docklines and two stainless steel docklines. Road loading is being upgraded into a fully automated top and bottom loading facility. Rail is also available. Access to M8, M9 and M90.

**Glasgow, Scotland:** Available now a recently acquired distillate facility of 5000m<sup>3</sup>. Project now proceeding to expand the terminal to 54,000 cu. metres for high and low flash petroleum and chemicals. This new highly automated terminal should be operational early 1995.

**Wyndham, Norfolk:** Eight tanks with a total capacity of 39,200 cu. metres from 4,100 to 5,200 cu. metres in size. High and low flash petroleum products on a commingled, through-putting basis. Distribution through fully automated road loading gantries at 550 GPM. Easy access to A11.

**Manchester Jetline Limited:** MJL has recently signed its first agreement with an oil company to transport jet fuel to Manchester Airport by pipeline. The MJL Pipeline System should be operating early 1994. Once the project is complete the majority of UK refineries will be able to pump to the airport.

## GEBR BROERE BV

PO BOX 150, 3300 AD Dordrecht, Netherlands. A division of Royal Pakhoed N.V., Rotterdam.

Tel: (78) 528528. Telex: 29024/29393. Fax: (78) 179141.

Operates two storage terminals in the Netherlands.

**Dordrecht:** 200,000 cu. metres capacity for chemical and petroleum products; tank sizes from 150 to 6,600 cu. metres. Tankage is mild steel, some insulated and coated; nitrogen blanketing facilities. Access by road, rail and sea via three deep-sea tanker jetties and four coastal tanker and barge jetties.

**Rotterdam-Botlek:** (operated by Tank

Terminal Rotterdam BV, daughter company): 325,000 cu. metres capacity for the storage of chemical and petroleum products; tank sizes from 670 to 15,000 cu. metres. Tankage is mild steel, stainless steel, some insulated and coated; nitrogen blanketing facilities. Two deep-sea jetties for tankers up to 60,000 tons and two jetties for barges and coastal tankers up to 5,000 tons complement the road and rail access facilities.

## GENERAL TANK STORAGE NV

Kaai 275, 4° Havendok, 2030 Antwerpen, Belgium.

Tel: (3) 541 12 80. Telex: 31643. Fax: (3) 541 31 63.

A subsidiary of LBChimie Group, GTS is a storage company for liquid chemicals, mineral and vegetable oils, specialised in storage of high-heat products, storage of oil additives, storage of sensitive chemicals, filtering/blending, drumming and waste water treatment (marpol or industrial).

GTS has at its disposal about 200 tanks with capacities ranging from 120 to 3,300 cu. metres, made out of stainless or mild steel (with special coating on request). Most of these tanks are provided with heating, nitrogen blanketing, mixing equipment.

GTS can handle all means of transport. The terminal covers an area of 11.5 ha including 568 metres of wharf (safe draught of 36 feet), more than 1,800 metres of railway line, numerous loading points and five weighbridges.

An extensive network of loading points allows handling of up to 50 roadtankers simultaneously.

The customs and independent surveyors have offices at GTS and the company has its own forwarding department.

The high priority accorded to quality control is evidenced by the achievement of the ISO 9002 certificate.

## 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-Wilhelmsburg:** Total capacity of 120,000 cu. metres, with tanks varying in size from 50 to 5,000 cu. metres, for all vegetable oils, petroleum products, 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 N.V. (Belgium):** Ketenislaan 3 B-2748 Beveren/Kallo Linker Oever.

Tel: (3) 7500211. Telex: 33705. Fax: (3) 7750261.

All petroleum products, solvents, chemicals and vegetable oils can be stored in this 60,000 cu. metre capacity terminal. Tanks vary in size from 300 to 3,000 cu. metre. 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 cu. metres make up this 15,000 cu. 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 tons dwt tankers.

**Haltermann A/B (Sweden):** Petroleumgatan 5, S-21124 Malmö.

Tel: (40) 181220. Telex: 32544. Fax: (40) 938485.

This 20,000 cu. metres capacity terminal has tanks ranging in size from 20 to 2,000 cu. 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: (0482) 20736/7. Telex: 592230. Fax: 226162.

132 Storage tanks ranging from 50 to 830 cu. metres with a total capacity of 25,000 cu. metres. Specialises in the



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Headoffice: Grönsakstorget 2, S-411 17 Gothenburg, Sweden. Phone: int +46-31 13 19 50. Fax: int +46-31 13 19 55



# Independent Bulk Storage

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. A 20 metre public weighbridge platform for weighing up to 60 tonnes and a road tanker steam-heating and cleaning service available on site.

## KING'S LYNN STORAGE LIMITED

**Head Office:** PO Box No. 2, Melton Constable, Norfolk NR 24 2QR, UK.

**Tel:** (0263) 860812. **Fax:** (0263) 861491.

**Terminal:** Estuary Road, King's Lynn, Norfolk PE30 2HH, UK. **Tel:** (0553) 764382. **Telex:** 817018. **Fax:** (0553) 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 during 1990, it manages the 15,000 cu. metres terminal on behalf of KPGB.

2. King's Lynn Storage Limited's own terminal comprises 10 storage tanks ranging from 55 cu. metres to 2,200 cu. metres with a capacity of 4,000 cu. metres. It is served from Bentinck Dock, King's Lynn, where KLS has access to 3 berths by agreement with Associated British Ports. The port can accommodate vessels up to 3,000 tons 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 customer's requirements.

## LA PETROLIFERA ITALO RUMENA SPA

**Head Office:** 40136 Bologna, Viale Aldini 190, Italy.

**Tel:** (51) 331567. **Telex:** 511549. **Fax:** (51) 332451.

**Terminal:** Porto Corsini-Ravenna: Total storage capacity of about 100,000

cu. metres for petroleum products. Tanks between 500 and 15,000 cu. metres for low and high flash products. Storage and handling facilities for lubricants. Total storage capacity for chemical products 70,000 cu. metres. Tanks between 250 and 5,000 cu. metres for low and high flash products. Some tanks of stainless steel, some rubber or specially coated; nitrogen blanketing facilities; modern 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 190 metres (623ft) in length and up to 8.5 metres (28ft) draught. Twenty-five pipelines, between 6 inches and 12 inches diameter (some insulated and of stainless steel) from berths to the storage tanks. Vessels can discharge several products simultaneously.

## MAVRAC

Route du Port Pétrolier, 13117 Lavera, France.

**Tel:** (33) 42 44 42 44. **Fax:** (33) 42 44 42 00.

A subsidiary of LBChimie Group, MAVRAC operates two terminals:

**Lavera:** 94,000 cu.metres capacity for chemical storage. Access by rail, road and sea (11.8m draught).

**Port Saint Louis du Rhône:** 20,700 cu.metres capacity for chemicals, petrochemicals, animal and vegetable oils. Access by road, rail (1,000 ton block trains) and sea (7.9m draught).

## NOORD NATIE TERMINALS NV

Stadswaag 7-8, B-2000 Antwerp, Belgium.

**Tel:** (3) 232 99 40. **Telex:** 31677. **Fax:** (3) 233 39 36.

Situated in the port of Antwerp. There are 188 tanks ranging from 30 to 8,000 cu. metres, with a total capacity of 225,000 cu. metres for various bulk liquids including mineral and lubricating oils, vegetable and animal oils and fats and non-dangerous chemicals. All tanks equipped with heating coils. Three mooring berths for seagoing vessels and a special dock for

handling barges. Direct road and railway connections. Three weighing bridges. Drumming installation.

## NORDIC TANK STORAGE AB

Brännolljegatan, Skarvikshamnen, S-418 34 Gothenburg, Sweden.

**Tel:** (31) 640130. **Telex:** 27580. **Fax:** (31) 545449.

Nordic Tank Storage AB operates four terminals in Sweden.

**Gothenburg:** 116 tanks from 50 to 25,000 cu.metres with a total capacity of 1 million cu.metres for petrol, gas oil, light and heavy fuel oils, bunker oils, lubricating oils, chemicals, vegetable oils etc., blending and conditioning, as well as the storage of international oil consignments in transit.

Capable of handling vessels up to 280 metres in length with a draught of up to 13 metres. Our network of pipes is connected to the shared pipeline system of the refineries and the oil companies.

**Heisingborg:** 12 tanks from 50 to 10,000 cu.metres with a total capacity of 35,000 cu.metres for petrol, gas oil and vegetable oils etc.

**Norrköping:** 36 tanks from 30 to 3,000 cu.metres with a total capacity of 14,000 cu.metres for chemicals, petrol, gas oil etc.

**Trellëborg:** 9 tanks from 20 to 3,500 cu.metres with a total capacity of 12,000 cu.metres for gas oil, fuel oil, lubricating oils, chemicals, molasses etc.

There are seven terminals in Sweden for petroleum products and chemicals.

Gävle .....	195,000 cu.metres
Kalmar .....	33,000 cu.metres
Nynäshamn .....	40,000 cu.metres
Söderhamn .....	25,000 cu.metres
Sundsvall .....	15,000 cu.metres
Umeå.....	12,000 cu.metres
Västerås .....	16,000 cu.metres

## OIL RAIL TERMINALS (LEEDS) LTD

South Accommodation Road, Leeds LS9 0RT, UK.

**Tel:** (0532) 480574. **Telex:** 5535. **Fax:** (0532) 400762.

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## PAKTANK-offices:

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telex 20894  
fax (31) 159000

Pakterminal Ltd.  
Port of Muuga  
Maardu TEE 57  
EE0103 Tallinn  
Estonia  
tel. (372) 2-236733  
fax (372) 5-249694

Paktank GmbH  
Duisburgerstrasse 17  
4040 Neuss/Rhein  
tel. (2131) 272129-222929  
telex 8517726  
fax (2131) 21820

VTG-Paktank Hamburg GmbH  
Brandsende 2-4  
2000 Hamburg 1  
tel. (40) 322843  
telex 2163506  
fax (40) 322630

Paktank Méditerranée S.A.  
B.P. 87, 2048 Ariana, Tunisia  
tel. 216-1-235825-766629-766909  
telex 14895  
fax 216-1-767470  
tel. Rotterdam (10) 4002130/  
4002318

Paktank Corporation  
Houston, Texas  
77027  
2000 West Loop  
South, Suite 2200  
tel. (713) 623-0000  
telex 775149  
fax (713) 6234480

Paktank Nederland B.V.  
Boompjes 60-68,  
3011 XC Rotterdam  
P.O. Box 102,  
3000 AC Rotterdam  
tel. (10) 4002911 - telex 22163  
fax: Crude and product storage (10) 2130060  
Chemical storage (10) 2130061

Thai Tank Terminal Ltd.  
14th Floor, Sino-Thai Tower  
32/37 Asoke Road,  
Sukhumvit 21  
Bangkok, 10110, Thailand  
tel. 2-260-1261-2  
telex 21393 Napetro th  
fax 2-260-1263

Tankstore Pte. Ltd.  
Six Battery Road 15-08  
Singapore 0104  
tel. (65) 2258600  
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# PAKTANK

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# Independent Bulk Storage

**Head Office:** Haynes Road, Cadishead, Manchester M30 5BX.

Part of the BTP plc group of companies. Thirty-two acre site only one mile from M1 and M62 motorways. Liner trains of up to 2,000 tonnes are received in modern sidings and discharged at 500 tonnes per hour. Equipped with high-speed, self-service road vehicle loading bays. Products stored in mild steel tanks ranging from 600 to 6,000 cu. metres. Complete range of low and high flash petroleum fuels.

## OIL TANKING GMBH

Admiralitätstraße 55, D-2000, Hamburg 11, Germany.

Tel: (40) 37 0990. Telex: 2163232. Fax: (40) 37 099 199.

Oiltanking has a total storage capacity of 4.6 million cu.metres. The company operates seven seaport terminals, designed for rapid handling, in Amsterdam, Ghent, Copenhagen, Hamburg, Houston, Malta and Singapore. All terminals occupy key positions in the international oil storage business and are backed by a dense network of nine German inland terminals. Deepwater terminals and inland storage facilities can be combined, permitting a wide variety of solutions for individual problems. The Amsterdam terminal in particular plays an important role in the distribution of high and low flash products in North-West Europe and the UK. Vessels up to 85,000 dwt are handled at this terminal and their cargoes redistributed on coasters and barges. Extensive product treatment facilities for the blending, leading, upgrading and downgrading of gasoline are also available.

The Malta facility is the first public terminal to be located so near to the primary trade route between the Suez Canal and Gibraltar, with connections to ports in Europe, the Middle East, Africa, the US and the Black Sea. Oiltanking Malta is located in the Malta Freeport complex on Marsaxlokk Bay, so in-route products may be shipped in, stored, blended and shipped out duty-free at Malta. The first of three terminal phases is completed with 174,000 cu.metres for clean products while the second phase with 55,000 cu.metres of black products is scheduled to go on-stream mid-1994.

Taking into account the importance of Ghent concerning the storage of chemicals, the storage capacity at our Ghent terminal for such clean products will be increased by 93,000 cu.metres. Installation of the tanks varying from 800 to 12,000 cu.metres has already begun and first operations will start mid-1994.

Further investments are made in the German market.

In the centre of the West-German industrial region of Ruhrgebiet, Oiltanking acquired its ninth German terminal at Duisburg. Located at the Rhine near to the Dutch border, the site offers excellent connections to other German regions and the Benelux countries. Activities under Oiltanking's management start mid-1993. In the first phase a total storage capacity of 15,000 cu.metres for gasoline and 20,000 cu.metres for gas oil is available. The second phase with another 18,000 cu.metres for gasoline is planned to go on-stream at the end of 1994.

The location of Oiltanking Gera in Thuringia/East Germany affords good storage opportunities in this region. The storage capacity will be increased by 10,000 cu.metres for gasoline and 57,000 cu.metres for gas oil, totalling up to 107,000 cu.metres by mid-1994.

## GERMANY

**Hamburg:** Forty-one tanks, sizes 2,000 to 26,000 cu.metres. Total capacity 418,000 cu.metres. Low/high flash petroleum products and heavy fuel oil storage. Sea, barge, rail and road. Berth for tankers up to 85,000 dwt.

**Berlin:** Thirty tanks, sizes 1,600 to 25,000 cu.metres. Total capacity 349,000 cu.metres. Low/high flash petroleum products. Barge, rail and road.

**Karlsruhe:** Thirty-nine tanks, sizes 600 to 20,000 cu.metres. Total capacity 177,000 cu.metres. Low/high flash petroleum products and LPG storage. Barge, rail and road.

**Bendorf:** Twenty-two tanks, sizes 2,000 to 20,000 cu.metres. Total capacity 145,000 cu.metres. Low/high flash petroleum products. Barge, rail and road.

**Frankfurt:** Twenty-five tanks, sizes 95 to 5,000 cu.metres. Total capacity 50,000 cu.metres. Low/high flash petroleum products and chemical products. Barge, rail and road.

**Honau:** Twelve tanks, sizes 5,000 to 20,000 cu.metres. Total capacity 115,000 cu.metres. Low/high flash petroleum products. Barge, road and pipeline.

**Duisburg:** Six tanks, sizes 5,000 to 20,000 cu.metres. Total capacity 35,000 cu.metres. Low/high flash petroleum products. Barge, rail and road.

**Hamm:** Eight tanks, sizes 3,000 to 15,000 cu.metres. Total capacity 76,000 cu.metres. Low/high flash petroleum products. Barge, rail and road.

**Gera:** Four tanks, sizes 10,000 cu.metres. Total capacity 40,000 cu.metres. High flash petroleum products. Rail and road.

## THE NETHERLANDS

**Amsterdam:** Fifty-three tanks, sizes 690 to 40,000 cu.metres. Total capacity 800,000 cu.metres. Low/high flash petroleum products, heavy fuel oil, crude oil, components, feedstocks and molasses. Sea, barge, road, rail and pipeline. Berth for tankers up to 85,000 dwt.

## BELGIUM

**Ghent:** Thirty-eight tanks, sizes 3,000 to 47,250 cu.metres. Total capacity 600,000 cu.metres. Low/high flash petroleum products, feedstocks, chemical products, fertilisers and edible oils. Sea, barge, rail and road. Berth for tankers up to 65,000 dwt.

## DENMARK

**Copenhagen:** Thirty-nine tanks, sizes 1,600 to 16,500 cu.metres. Total capacity 339,000 cu.metres. Low/high flash petroleum products, heavy fuel oil and slop oil. Sea, coaster and road. Berth for tankers up to 40,000 dwt.

## MALTA

**Malta:** Eleven tanks, sizes 500 to 35,000 cu.metres. Total capacity 174,000 cu.metres. Low/high flash petroleum products, components and feedstocks. Berth for tankers up to 120,000 dwt.

## OMNI TANK GMBH

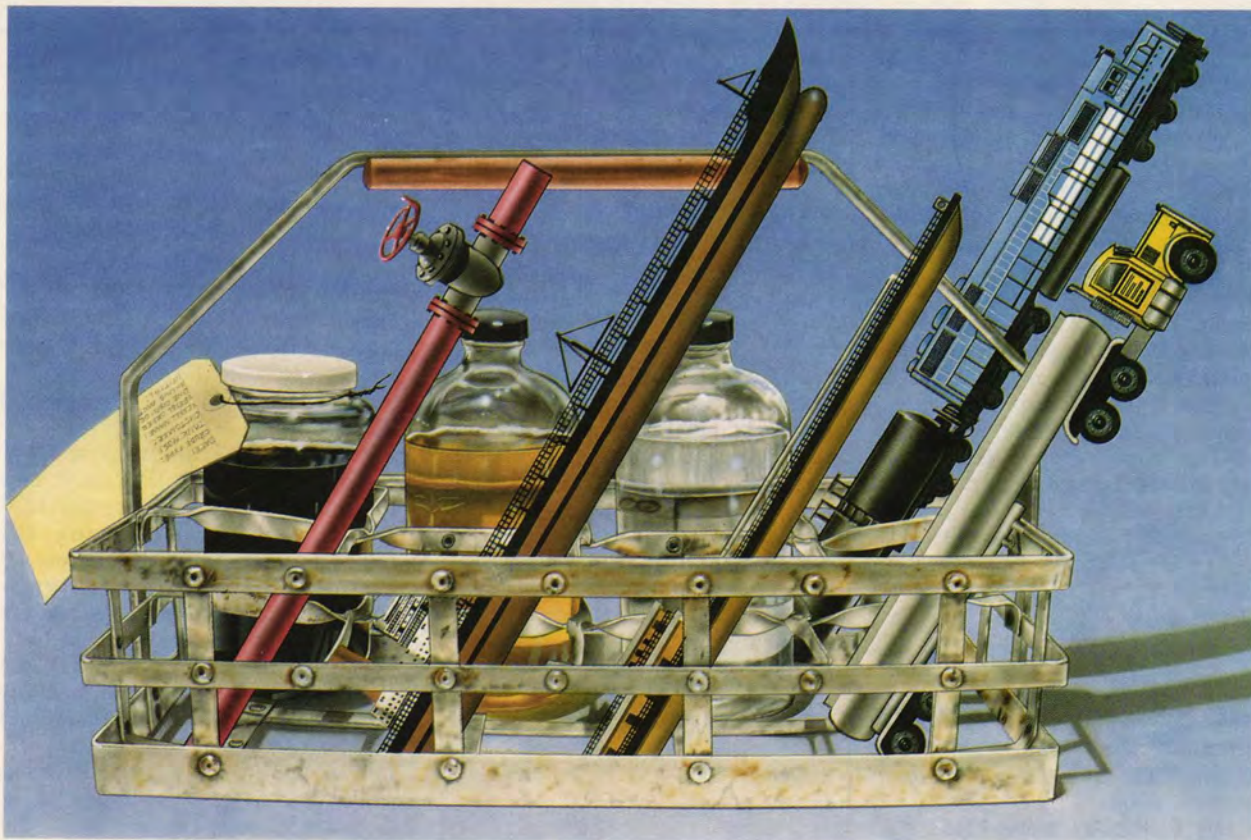
Marienstraße 20 40212 Düsseldorf.

Tel: (0211) 350515. Fax: (0211) 357697.

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

**Essen:** 112,000 cu. metres. 39 tanks ranging from 600 to 12,000 cu. metres for petroleum products, chemical and petrochemical liquids and solvents.

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FAX: (713) 457-7991

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**Hanau:** 48,000 cu. metres. 23 tanks for gasoline, gas oil, jet fuel and petrochemical liquids. Blending facilities are available. Access by road, rail and barge.

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

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

## PAKTANK INTERNATIONAL BV

PO Box 7300, 3000 HH Rotterdam, The Netherlands.

*Tel: (10) 4002911. Telex: 22163. Fax: (10) 4139829.*

The world's largest independent tank storage company, providing bulk storage and related facilities to the chemical and oil industries. Around 13 million cu. metres of tank storage capacity at terminals in Western Europe and further capacity in the USA, Tunisia and Singapore (including capacity of partners). All Panocean terminals with the exception of those in the UK are now owned by Royal Pakhoed nv, our parent company. Broere and ACS Antwerp are also 100 percent owned by Royal Pakhoed nv.

### THE NETHERLANDS

**Botlek (Rotterdam):** 1,576,000 cu. metres capacity; access by sea, road, rail and pipelines; 39ft 6in draught sea berths, storage for petroleum products, chemicals and specialised liquids.

**Europak (Rotterdam):** 1,973,000 cu. metres; sea, pipelines; 68ft; crude oils and petroleum products. Able to receive vessels up to 72ft via the Maasvlakte terminal.

**Laurens haven (Rotterdam):** 926,000 cu. metres; river, pipelines; petroleum products.

**NOM/Pernis (Rotterdam):** 150,000 cu. metres; sea, road, rail; 38ft 10in;

petroleum products, chemicals, aromatics.

**Maasvlakte Oil Terminal CV (Rotterdam):** 4,400,000 cu. metres; sea, pipelines; 72ft; crude oils.

### SWEDEN

**Goteberg:** 75,000 cu. metres; sea, road, rail; 36ft; petroleum products, chemicals, lubricating oils, molasses, latex.

**Sodertalje:** 117,500 cu. metres; sea, road, rail; 32ft; petroleum products, asphalt, chemicals, vegetable and animal oils and fats.

**Malmö:** 24,000 cu. metres; sea, road, rail; 36ft asphalt, petroleum products, chemicals.

### GERMANY

**Neuss:** 58,000 cu. metres; river, road, rail; petroleum products, chemicals.

**Tollerort and Hohe Schaar (Hamburg) and Kiel:** See under VGT PAKTANK HAMBURG GMBH.

**USA:** 1,350,000 cu. metres; chemicals.

**SINGAPORE:** 830,000 cu. metres; oil storage.

**ESTONIA (Tallinn):** 50,000 cu. metres; oil storage (construction completed 1st phase).

**THAILAND:** 10,000 cu. metres; chemical storage (construction

completed 1st phase).

**TUNISIA:** 300,000 cu. metres; oil products.

## PANOCEAN STORAGE & TRANSPORT LTD

**Head Office:** Chester House, Chertsey Road, Woking, Surrey, GU21 5BJ, UK.

*Tel: (0483) 726241. Fax: (0483) 725459.*

Panocean's terminals are strategically located at Eastham and Birkenhead on Merseyside and at Hull on the east coast serving the requirements of Britain's industrial heartland with excellent motorway connections. Products handled include chemicals, lubricating oils, edible oils, latex and other liquids. Blending and clarification of luboils and drumfilling facilities. Merseyside terminals BS 5750 accredited.

**Birkenhead (Merseyside):** 101 tanks ranging in size from 20-2,000 cu. metres with total capacity of 46,000 cu. metres, for high flash point products. Insulated and coated tanks. Blending and clarification of lubricating oils. Drumfilling. Access for ships and road vehicles.

**Eastham (Merseyside):** 83 tanks



Paktank - Botlek terminal

# Independent Bulk Storage



ranging in size from 50-3,500 cu. metres with total capacity of 92,000 cu. metres for high and low flash point products. Heated, insulated, coated and stainless steel tanks. Drumfilling. Access for ships, road vehicles and railcars.

**Hull (Humberside):** 36 tanks ranging in size from 65-2,600 cu. metres with total capacity of 22,000 cu. metres for high and low flash point products. Heated, insulated and coated tanks. Blending and clarification of lubricating oils. Access for coasters and road vehicles.

## PINNACLE STORAGE

Choats Road, Dagenham, Essex RM9 6PU, UK.

Tel: (081) 593 7211. Fax: (081) 593 1632.

Owned by Transport Development Group plc (TDG) and formerly known as London & Coastal Oil Wharves Ltd.

Dagenham terminal: Situated between London and the Dartford Tunnel, this is the nearest major public storage terminal to London. The terminal now operates 236 tanks with a total capacity of 110,900 cu. metres. As well as the 26 new tanks commissioned in 1987, the company has recently acquired additional capacity at Dagenham including 58 tanks of less than 100 cu. metres capacity. Jetty facilities for vessels up to 228 metres LOA with additional berths for smaller vessels and barges. Full range of chemical storage facilities includes stainless steel tanks and pipelines, lined, insulated and heated tanks, and inert gas blanketing. The terminal handles a wide range of vegetable oils, edible oils and technical oils as well as chemicals and fuels. Facilities for bunkering vessels, blending products and filtering.

The terminal has a modern workshop, weigh-bridge, radio communications, fully computerised stock accounting and easy access to the M25.

Chemical analysis services: Include the testing of petroleum and chemical products to ASTM, IP and BSI standards. Laboratory NAMAS accredited.

## PL TRANSTORE LTD

Riverside House, East Street, Birkenhead, Wirral, Merseyside L41 1 BY, UK.

Tel: (051) 647 4111. Fax: (051) 666 2136.

PL Transtore Ltd is a subsidiary of Acatos and Hutcheson PLC. As an independent company our dedicated tank farms can accommodate a variety of diverse bulk liquids. Our 3 piggable discharge lines feed mild steel tanks which are lagged and fully serviced, and range in size from 50-1000 tonnes with a maximum capacity of 20,000 cu. metres. Processing Divisions can offer the facility of custom designed plant for Rotary Vacuum Filtration, Separation, Acid Refining, Drum Filling and Depackaging. Laboratory services use the latest analytical techniques and equipment. We also operate a fleet of modern stainless steel roadtankers which are available on long-term contract or spot hire and can carry low/medium hazard and edible (SCOPA Registered) products.

## POWELL DUFFRYN TERMINALS LTD

Commercial Enquiries: C. Scott, Sales Manager UK, Powell Duffryn House, London Road, Purfleet, Essex, RM16 1PR.

Tel: (0708) 865701. Telex: 21725. Fax: (0708) 868983.

Operates three terminals in the UK.

**Barry (South Wales):** High and low flash tankage, for petroleum and chemical products, with a total capacity of 113,000 cu. metres. Tank sizes from 60 to 14,400 cu. metres; mild steel - many lined, lagged and coiled, using stainless steel fittings when required. Three tanker berths with a minimum depth of 9.8 metres (32ft), served by over 15 pipelines in stainless or mild steel, lagged and traced as required. Blending and drumming; weigh-bridge; road and rail facilities. This location is ideal for supplying the industrial areas of South Wales, the South of England, the Midlands and the North-West.

**Ipswich (Suffolk):** High and low flash storage; tanks from 50 to 10,000 cu. metres with a total capacity of 89,000 cu. metres for petroleum and chemical products. Many tanks lined, lagged and coiled. Three tanker berths with a minimum depth of 7.9 metres (26ft), using both stainless and mild steel pipelines; blending; road facilities.

**Purfleet (Essex):** Two jetties: the main

seven-berth private jetty with a minimum depth of 10.6 metres (35ft) can accept vessels of up to 45,000 tons displacement or a maximum length of 800ft; a smaller chemical jetty upstream. High and low flash tankage for petroleum and chemical products, with a total capacity of 269,000 cu. metres. Tank sizes from 50 to 15,000 cu. metres; stainless or mild steel; many lined, lagged and coiled, using stainless steel fittings when required. Fourteen stainless and mild steel main pipelines; many are lagged and traced for temperature control. Full trainloads on 100-tonne rail cars and all types of road tankers; weighbridge; blending and drumming.

All three terminals offer terms for dedicated or commingled petroleum product storage.

## PROPETROL

Head Office: 65 Quai Jacoutot, BP 13, F-67013 Strasbourg Cedex, France.

Tel: (33) 88 45 90 10. Telex: 890619 and 880078. Fax: (33) 88 45 90 20 and (33) 88 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** (two locations), **Village Neuf** (near Basle), **Gergy** (near Chalon-sur-Saône) and **Villeneuve-La-Garenne** (8 km north of Paris).

Together these terminals represent a total storage capacity of about 190,000 cu. metres of bulk petroleum products, 50,000 cu. metres of bulk liquid chemicals and petrochemicals and over 6,000 sq. 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.

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 products dyeing, blending of oils and fuels, heat supply, tank-truck weighing, bunkering of barges with tank-trucks and customs services.

## PROQUIMICA, S.A.

**Head Office:** C/Orense, 20, 2-5 - Madrid, Spain.

*Tel: (34) 1 5 56 07 52. Fax: (34) 1 5 56 03 48.*

**Terminal:** Dock of Flammables - 08039 Barcelona, Spain.

*Tel: (34) 3 3 35 58 12. Fax: 34 3 3 35 57 41.*

PROQUIMICA, S.A. is an independent company dedicated to storage and handling services of bulk chemicals and petroleum products (alcohols and oils for industrial and other uses, monomers, solvents, raw materials, gasoline, diesel, heavy oils), with a highly specialised and experienced staff. The terminal is located in the 'Dock of Flammables', Barcelona Port.

**Services:** In and out from/to ship. In and out from/to road tankers. In and out from/to rail cars under development. Transshipment facilities through the Terminal (with or without intermediate storage). Storage of 62,000 cu. metres total capacity, in tanks ranging from 50 to 3,000 cu. metres. 24 hours operation. Heating and refrigeration. Blanketing and drying. Drumming. Blending operations. Logistical and technical advice.

**Facilities:** Handling of high and low

flash, corrosive and other special products. Mild steel tanks, all with dedicated lines for road tanker loading. Specially coated tanks. Stainless-steel tanks and pipelines. Special equipment for special products. Manual and semi-automatic drumming lines. Covered warehouse for drums and others. Land availability for further expansions. Authorisation to store liquified gases. Two berths, 39ft draught, 480 ft length, no beam restrictions.

## PUSBACK u. MORGENSTERN PETROTANK

Neutrale Tanklager-Ges.mBH u. Co. KG, Leher Landstraße 94, D-27607 Langen/near Bremerhaven.

*Tel: (49) 4743 895-0. Fax: (49) 4743 895-18.*

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 about 176,000 cu. metres. Seagoing vessels are possible at:

**Nordenham-Blexen:** draught max 32ft, LOA 170m.

**Bremen:** draught max 31ft, LOA 150m.

There are barge, rail and truck facilities available in the other terminals.

Storage of heavy fuels, gas oil, Urea and other liquid products.

## SIMON STORAGE GROUP

Priory House, 60 Station Road, Redhill, Surrey RH1 1PH.

*Tel: (0737) 778108. Telex: 58218 SSSSTOR G. Fax: (0737) 778112.*

Simon Storage manage storage investments in the UK and Eire for Simon Engineering plc, some of which are in joint venture with the Royal Van Ommeren Group. All enquiries regarding the operating companies should be addressed to Simon Storage.

**Aviation and Plant Services:** Simon Storage also provide comprehensive contract management services for the oil industry including aviation into plane services, terminal, oil and gas pipeline management, onshore oilfield operation.

**Cumbrian Terminal:** Prince of Wales Dock, Workington, Cumbria.

*Tel: (0900) 605151. Telex: 64331 CSTORR G. Fax: (0900) 67986.*

31,581 cu. metres for petroleum products and chemical storage. Transport by road, rail and sea. Ships Agency: Workington - can handle 10,000 tons 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: (0469) 572615. Telex: 52291 ISCOL G. Fax: (0469) 577019.*

**East:** *Tel: (0469) 571241. Telex: 527931 ISCEA G. Fax: (0469) 41012.*

**Killingholme:** *Tel: (0469) 40381. Telex: 52291 ISCOL G. Fax: (0469) 41012.*

Operates three installations: two at Immingham Dock (East and West) and one at Killingholme. More than 300 tanks with a total capacity of 570,000 cu. 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



Simon Storage - Tyne terminal



## Solid in liquids.

Our facilities are as steady as a rock. We're solid in liquids. It means we are a partner you can rely on. We meet your requirements in the storage and handling of petroleum products, chemicals, molasses and edible oils and fats. But there's more. Solid in liquids also reflects our drive to achieve higher standards in our service to you. Some are clearly visible. Others hide from sight. You won't be surprised to hear that we are annually investing a great deal of time and money in safety and environmental measures.

Solid in liquids also implies being where you expect us to be. With a total terminal capacity of over 10 million cbm in Europe, North America, Mexico and Asia, we provide a global network with a local touch.

In short, solid in liquids means you can rely on us.

Van Ommeren Tank Terminals, Westerlaan 10, 3016 CK Rotterdam, The Netherlands.  
Telephone +31 10 4642346. Telefax +31 10 4642819. Telex 21435 vo nl.



**Van Ommeren**  
Tank Terminals



# Independent Bulk Storage

excellent segregation of grades. Use is made of three jetties: Eastern, Western and one at Killingholme. 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 tons 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 both Immingham and Killingholme. New tankage under construction.

**Seal Sands Terminal:** Seal Sands, Middlesbrough, Cleveland TS2 1UB.

*Tel: (0642) 546775. Telex: 58218*  
**STOR G. Fax: (0642) 546076.**

Over 100 tanks with a total capacity of 196,400 cu.metres for petroleum products, chemicals including molten sulphur, VCM and LPG's and a wide range of edible or specialist products. Two jetties, one taking vessels up to 30,000 tons dwt. The terminal is connected to local chemical plants by pipeline. Transport by road, rail and sea. Block trains handled.

**Shannon Terminal:** Foynes Harbour, Foynes, Co Limerick, Eire.

*Tel: (010353) 69 65506. Fax: (010353) 69 65601.*

One installation. 14,000 cu.metres for petroleum and chemical products on the River Shannon. The jetty can accommodate 20,000 ton tankers and facilities are included for the loading to road tank wagons and the supply of products to barges at the jetty. Land available for expansion of the terminal.

**Tyne Terminal:** Northumberland Dock, North Shields, Tyne and Wear NE29 6DY.

*Tel: (091) 296 0999. Telex: 53180*  
**VELVA G. Fax: (091) 258 6996.**

Total capacity 54,704 cu.metres. Fifty mild steel tanks, ranging in capacity from 300 to 8,600 cu.metres for chemicals, gasolines and oils. Blending facilities. Many tanks are coiled. 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.

## SOGESTROL

**Head Office:** Route de la Chimie, 76700 Gonfreville l'Orcher, France.

*Tel: (33) 3553 3770. Telex: 190582.*  
*Fax: (33) 3553 3694.*

Two terminals, with a total capacity of 340,000 cu.metres, located in the industrial area of Le Havre Port, near chemical and petrochemical plants, and reserved exclusively for chemicals and petrochemicals and all dangerous liquids. Tanks are insulated, coated, heated, refrigerated, of mild and stainless steel, with traced insulated lines. Nitrogen facilities. Tanks from 5,000 cu.metres have a floating roof. Access by road, rail, sea, river. Connections with certain local plants.

**Terminal No. 1:** 161 tanks from 50 to 15,000 cu.metres. Three jetties, draught of 38ft for 50,000 ton ships, length 250 metres. Reception from and delivery to ships, barges, road containers, rail cars and drums. Drumming and pipelines to local industries.

**Terminal No. 2:** 52 tanks from 315 to 4,900 cu.metres included 7 tanks from 315 to 2,000 cu.metres of stainless-steel. Three jetties, draught of 38ft for 40,000 ton ships. Reception from and delivery to ships, barges, road containers and rail cars. Drumming station connected to tanks; facility to drum directly to road containers and rail cars. The terminals are both certified ISO 9002 since February 1992 by Lloyd's Register Quality Assurance. SOGESTROL is jointly owned by the SOGESTRAN Group and LBChimie.

## SOTRASOL

157, avenue Charles de Gaulle, 92200 Neuilly Sur Seine, France.

*Tel: (1) 47 47 51 00. Fax: (1) 46 41 03 27.*

A subsidiary of LBChimie Group, SOTRASOL operates two terminals:

**Tarnos (Port de Bayonne):** 101,000 cu.metres capacity for chemical liquids, crude oil, liquid fertilisers, animal and vegetable oils and fats. Seventeen tanks from 640 to 15,000 cu.metres, some stainless steel, some with heating coils or insulation. Nitrogen blanketing facilities. Access by road, rail and sea (two jetties with draught up to 28ft). The terminal is certified ISO 9002 since July 1992 by

Lloyd's Register Quality Assurance.

**Le Havre:** One hundred tanks from 30 to 5,000 cu.metres, with a total capacity of 105,000 cu.metres for mineral oils, chemical products with a flash point of over 100°C, liquid fertilisers, molasses, natural and synthetic latex and vegetable and animal oils and fats. Tanks are partly stainless steel, some heated and insulated. Access is by road, rail and sea (three berths, maximum draught 38ft).

## SOUTH WESTERN TAR DISTILLERIES LIMITED

High Street, Totton, Southampton SO4 4TN.

*Tel: (0703) 663444. Telex: 47355*  
**BURBOS G. Fax: (0703) 873429.**

Located at Totton in the Port of Southampton, SWTD has over 125 tanks in a range of sizes up to 7,000 cu.metres. Total storage capacity is 36,000 cu.metres with planning permission for further expansion. Some tanks are stainless steel and a wide range of products are handled ranging from low flash products up to and including fuel oils and bitumen.

The site has its own rail sidings and jetty facility with capacity to take up 2,000 tonnes and is immediately adjacent to the M27 and M271 motorways.

A smaller storage facility (5,000 cu.metres) is also available at Hertford.

## STOCKAGE INTERNATIONAL COMPAGNIE (S.I.C.)

103, quai Emile Cormerais, B.P. 53, 44801 Saint Herblain Cedex, France.

*Tel: (33) 40 46 26 48. Fax: (33) 40 46 52 52.*

A subsidiary of LBChimie Group, SIC operates one storage in Nantes with a capacity of 30,000 cu.metres for liquid chemicals, animal oils, vegetable oils and molasses.

## TANQUIPOR, LDA

**Head Office and Installation:** Parque Industrial da Quimigal Lavradio- 2830 Barreiro-Portugal.

*Tel: (01) 2073794. Fax: (01) 2075941.*

# Independent Bulk Storage



**Office:** Avenida Infante Santo, 23-1 Esq., 1300 Lisbon, Portugal.

**Tel: (01) 3969117. Fax: (01) 3970717.**

The tank terminal, located in the Port of Lisbon, has a total capacity of 87,000 cu. metres for storing ammonia, chemicals and petroleum products. Maximum draught at the jetty is approximately 32ft at high tide.

## TANKLAGER-GESELLSCHAFT MANNHEIM HOYER mbH

Essener Str. 64, D-68219 Mannheim, P.O. Box 81 04 06, D-68204 Mannheim.

**Tel: (49) 621 89 98 0. Fax: (49) 621 80 14 17.**

The Tanklagergesellschaft HOYER mbH, 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 and South Germany, Mannheim allows economical access to Eastern France and North Switzerland.

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

The tank storage depot Mannheim-Rheinau has a total of 224,000 cu. metres tank space, and the storage depot in Mannheim-Handelshafen has over 68,000 cu. metres. The tank space

of both of these can be extended by a further 50-80,000 cu. metres.

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

Modern cargo handling area with 8,000 sq. metres storage space at Mannheim-Handelshafen are particularly suitable for the storage and transshipment of lubricants. 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, tanks with special cladding, insulation and facilities for nitrogen supply.

In addition to expert storage of a wide variety of products, such as fuel oils, chemicals, molasses, vegetable and animal fats, 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 transshipment by ship/tank car as well as a complete rail service.

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

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 LIMITED

Seal Sands, Middlesborough, Cleveland TS2 1UA, UK.

**Tel: (0642) 546767. Telex: 58477. Fax: (0642) 546222.**

Jointly owned by Royal Pakhoed Holding NV and GATX Corporation. Operates two terminals in the UK.

**Middlesborough:** 58 tanks from 30 to 6,500 cu. metres, with a total capacity of 80,000 cu. metres. Coated mild steel and stainless steel for petroleum and chemicals. Road and sea. Jetty facilities at South Wharf for ships up to 7,500 tonnes dwt, 12 docklines (six stainless steel).

**Seal Sands:** 110 tanks from 55 to 8,500 cu. metres, with a total capacity of 175,000 cu. metres. Mild steel coated and stainless for petroleum and chemicals. One sphere of 6,650 cu. 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. 25 docklines (15 stainless steel).

## THE INDEPENDENT TANK STORAGE ASSOCIATION (ITSA)

Executive Secretary: H.H. Cail, 24 Chiswick Quay, London W4 3UR, UK.

**Tel: (081) 995 3393. Fax: (0900-1800hrs) (081) 995 3393.**

The Association exists to give information and advice to government and other regulatory bodies in connection with the practical, safety and environmental health aspects of the bulk liquid storage business. Membership is open to all companies operating in the United Kingdom whose main business is storage of bulk liquids for third parties. A minimum capacity of 50,000 cu. metres is required for full membership and all companies with over that amount are currently



TLG Tanklager-Gesellschaft HOYER mbH – Mannheim terminal



# Independent Bulk Storage

members of ITSA. Associate membership is available to those with less than 50,000 cu. metres capacity, and the Association last year enrolled its first Associate member. ITSA is a founder member of the recently formed Federation of European Tank Storage Associations (FETSA) aimed at representing the industry and its particular characteristics in discussions with the EC on developing legislation.

## THE ROSS CHEMICAL & STORAGE CO LTD

Dock Road, Grangemouth FK3 8UB, Scotland.

Tel: (0324) 474774. Fax: (0324) 485476.

**Grange Dock, Grangemouth:** Sixty tanks ranging from 800 to 2,650 cu. metres, for fuel oil, motor spirit, petrochemicals, aviation fuel and molasses. Served by a common-user oil jetty with mild and stainless-steel jetty lines. The jetty is capable of handling ships up to 20,000 tons dwt. Distribution by road. Office facilities and land available for expansion.

## VAN OMMEREN BRAGTANK AG

Head Office: Westquaistrasse 12, CH 4019 Basle, Switzerland.

Tel: (61) 65 44 22. Telex: 963180. Fax: (061) 651692.

Van Ommeren Bragtank AG, a member of the Van Ommeren group, has one installation in Switzerland.

**Basle:** The terminal has 63 tanks with a total capacity of 346,000 cu. metres. All mineral oils can be stored. There are six jetties for barges. Access is by river, road and rail. Steam and oil heating is provided and there are bunkering facilities for barges.

## VAN OMMEREN TANK TERMINALS (VOTT)

Head Office: 10 Westerlaan, 3016 CK Rotterdam, The Netherlands.

Tel: (10) 464 2346. Telex: 21435 VONL. Fax: (10) 464 2819.

VOTT is part of Royal van

Ommeren NV, with a worldwide capacity of 11,522,000 cu. metres. It has 30 terminals (3 under construction) situated in 15 countries.

### THE NETHERLANDS:

**Amsterdam:** 600,000 cu. metres capacity; access by road, rail, sea and inland waterways; 41 feet draught berths, storage for petroleum products, molasses and animal and vegetable oils and fats.

**Botlek (Port of Rotterdam):** 940,000 cu. metres capacity; access by road, rail, sea and inland waterways and pipeline; 41 feet draught; storage for chemicals, petrochemicals and petroleum products; pipeline connections to adjacent refineries, CEPS and Van Ommeren Tank Terminal at Europoort.

**Europoort (Port of Rotterdam):** 750,000 cu. metres capacity; access by road inland waterways, sea and pipeline; 71 feet draught; storage for petroleum products; pipeline connection to CEPS, Van Ommeren Tank Terminal Botlek and adjacent refineries.

**Vlaardingen (Port of Rotterdam):** 435,000 cu. metres capacity; access by road, rail, sea and inland waterways; 40 feet draught; storage for animal and vegetable oils and fats, petrochemicals and molasses.

### BELGIUM

**Antwerpen:** Gamatex is a 50/50 joint venture between GATX Terminals and operates one terminal in Antwerp, Belgium. The terminal offers 137 tanks with a total capacity of 518,130 cu. metres for clean mineral oils, chemicals, edibles and pressurized gases. There are 5 jetties for barges and seagoing vessels (draught up to 13.5 metres). Access is by sea, rail and road. Pipeline access is available. Tankage is insulated, coiled, coated, stainless steel and heatable. All chemical tanks are equipped with dedicated lines, pumps and loading racks for railcars and trucks. Prepump, blending, drumfilling and nitrogen blanketing are available.

### FRANCE

**Fos-sur-Mer:** DPF, a company in which Van Ommeren has a share has one installation in France, at Fos-sur-Mer. The terminal has 40 tanks with a total capacity of 780,000 cu. metres. All mineral oils can be stored. There are five jetties for seagoing vessels (up to 72ft) and one for coastal vessels (21 ft). Access is by sea, rail, pipeline and road. Blending facilities are provided

(MTBE, lead, butane).

### GERMANY

**Hamburg:** The terminal has 300 tanks with a total capacity of 711,000 cu. metres for storing mineral oils, petrochemical liquid, liquid fertilisers, animal and vegetable oils and fats, and molasses. There are four jetties for seagoing vessels and barges (draught up to 44ft), seven berths for barges and coasters. Access is by road, rail and sea. Product lines are partly stainless steel. Tankage is insulated, coiled and coated, provided with steam and oil heating and partly equipped with nitrogen blanketing. Pre-pump facilities, drumfilling plant, blending and dyeing facilities for gasoline and fuel oil and molasses are also available.

### SPAIN

**Barcelona:** Located at the Port of Barcelona's Flammables Area, it has access by road, sea and in the near future, by railroad. Operates with 75 tanks ranging from 30 to 2,000 cu. metres, total capacity 35,000 cu. metres, equipped for practically any kind of chemical and petrochemical product. Drumming and warehouse facilities available. Suitable for transit operations and ship to ship transfers, using the free zone facilities.

### UNITED KINGDOM

**London:** This terminal on the river Thames has 134 tanks with a total capacity of 348,000 cu. metres suitable for storage of clean low flash petroleum products and chemicals. Access is by sea (draught 36 feet), rail and road (bottom loading facilities).

## VTG-PAKTANK TANKLAGER HAMBURG GMBH

Brandsende 2-4 2000 Hamburg 1, Germany.

Tel: (40) 322843. Telex: 2163506. Fax: (40) 322630.

**Hohe Schaar (Hamburg):** 427,000 cu. metres; sea, road, rail; 48ft; crude oils, petroleum products, chemicals.

**Tollerort (Hamburg):** 32,000 cu. metres; sea, road, rail; 29ft; petroleum products, chemicals, lubricating oils, latex, vegetable and animal oils and fats.

**Kiel:** 8,000 cu. metres; sea, road; 30ft; petroleum products.

# STAR ENERGY



## STAR ENERGY RESOURCES LTD

...belongs to the private locally owned Star Energy group, which is internationally active, specializing in the fields of petroleum products blending, rental of petroleum storage tanks, trading and shipping of crude oil, refined products, and gas.

Star Energy's site in the Jebel Ali Free Zone currently has a total of 17 oil storage tanks with a capacity of approximately three million barrels, in addition to two tanker berths.

Star Energy has established itself as the only company in the Middle East specializing in the services of storage rental and product blending.



### Star Energy Resources Ltd.

P.O. Box 16811  
Jebel Ali Free Zone  
Dubai  
United Arab Emirates  
Tel : (084) 56733  
Fax : (084) 56548  
Tlx : 49632 SERL EM



*The Symbol of Service*

## UK BULK LIQUIDS STORAGE

CHEMICALS ● LUBOILS ● PETROLEUM PRODUCTS  
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Fax: 051-327 4995

### HULL

Tel: 0482-781118  
Fax: 0482-781147



## Panocean Storage and Transport Limited

CHESTER HOUSE, CHERTSEY ROAD, WOKING, SURREY GU21 5BJ, UK  
Tel: 0483 726241 Fax: 0483 725459

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# Independent Bulk Storage

## VTG VEREINIGTE TANKLAGER UND TRANSPORTMITTEL GMBH

**Head Office:** Neue Rabenstrasse 21, 20354 Hamburg 36, Germany.

**Tel:** (40) 441910. **Telex:** 2170080 vt d.

VTG, a member of the PRE-USSAG 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 cu.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:** 221,000 cu.metres, 85 tanks ranging from 50 to 20,000 cu.metres for all petroleum products, solvents and petrochemicals; access for barges, road and rail tank cars and liner trains.

**Duisburg:** 300,000 cu.metres, 212 tanks varying in size from 15 to 9,000 cu.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.

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

**Hanover:** 314,000 cu.metres. 22 tanks ranging from 500 to 70,000 cu.metres for crude oil, petroleum products, chemicals and solvents. Access for road and rail tank cars, liner trains and barges; crude oil pipeline.

**Munich:** 155,000 cu.metres, 49 tanks ranging from 50 to 47,000 cu.metres for storing petroleum products, chemical and petrochemical liquids and solvents. Blending facilities for gasoline are available. Access as above.

**Regensburg:** 77,000 cu.metres, 60 tanks varying in size from 100 to 9,000 cu.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.

**Köln:** 101,000 cu.metres, 31 tanks ranging from 25 to 25,000 cu.metres for storing petroleum products, chemicals and solvents. Access by road, rail, barge and pipeline (RMR).

**Mainz-Gustavburg:** 256,000 cu.metres, 33 tanks ranging from eight to 40,000 cu.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.

## New tank storage association

### Federation of European Tank Storage Associations

After some four years of discussions following an Italian initiative, seven Association of Independent Tank Storage companies in the European Community member states decided in April at a meeting in Rotterdam to form a European umbrella organisation, to be called the Federation of European Tank Storage Associations.

The countries represented are: Italy, France, Spain, Belgium, the Netherlands, Germany and the United Kingdom. In the past each had its own national bulk storage association but henceforth there will also be a pan-European one, based in Brussels, to promote the common interests of members in relations with international governmental and non-governmental organisations.

It was felt essential for European storage operators to be able to act with one voice, since European storage capacity totals 38 million cubic metres (of which EC members account for 32 million cubic metres). This represents over one-half of the world total. With the formation of the new grouping, European tank operators will be better placed, for instance, to lobby the EC on future legislation and other relevant matters.

Registered in Belgium, the new organisation will be run from a small office with a small permanent staff. As and when required, working parties will be formed for specific tasks. Four representatives will sit on the executive committee:

**Chairman:** Richard J Kellaway, GATX Terminals  
**Vice-chairman:** Philippe Marache, LBChimie  
**Treasurer:** Josef F Adriaens, Panocean/Paktank  
**Secretary:** Jaap J van Oostendorp, VOTOB



The Institute of Petroleum

## Energy Economics Group

### Autumn Programme

<b>September</b>	Professor Valeri Shapiro on 'Russian Oil and Gas'
<b>18 October</b>	'Promoting the Engineer as the Professional of the Next Century'
<b>21 October</b>	Dr Ian Thompson on 'Gas Market Liberalisation'
<b>22 November</b>	Mr Roger Hutcheson on 'European Automotive Fuels'



Personnel Education & Training  
Discussion Group Evening Meeting

## Action Learning

Integrating Individual Development  
and Business Improvement

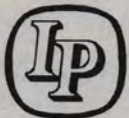
By Chris Brooks

Wednesday 22 September 1993  
5.15 p.m. for 5.45 p.m.

Chris Brooks, Marketing and Training Consultant, Shell International Chemical Company Limited will illustrate how Action Learning was developed and used in Shell Chemicals UK Ltd and directly contributed to the company's bottom line.

His talk will be relevant to all industries and all are welcome. Discussions are normally completed by 7.00 p.m.

It would be helpful if you could call Bob Edmondson at the Institute of Petroleum (Tel: 071-636 1004) if you or your colleagues plan to attend.



Energy Economics and Personnel  
Education and Training Discussion Groups

## Promoting the Engineer as the Professional of the Next Century

Monday 18 October 1993, 5.30 p.m. to 7.00 p.m.

An evening meeting with the three aims of promoting engineering to schools as a rewarding profession; facilitating public discussion on the urgent need for Britain to promote applied sciences and to enhance the status of engineers; and ensuring that the oil and gas industry will continue to have access to an expanding pool of engineering talent from which to select its engineering recruits in the 21st Century.

Chaired by Mr Graham Able, Headmaster of Hampton School.

**Speakers:** Professor Michael Laughton,  
Dean of Engineering, University of London  
Professor Harold Baum, Head of the School of  
Life, Basic Medical and Health Sciences,  
King's College, London

Please inform **Pauline Ashby** at the Institute of Petroleum (Tel: 071-636 1004) if you or your colleagues plan to attend.



The Institute of Petroleum

## Developments in Microbial Control in Metal Working Fluids

Thursday 14 October 1993

To be held at The Institute of Petroleum

It is not difficult to kill or control microbes in MWF; previous IP symposia have addressed chemical (biocide) methods and physical methods (pasteurisation, filtration etc). The traditional objective has been the prevention or delay of spoilage with the spin-off of less MWF product used and less spoiled fluid discharged to waste. Recent initiatives have added new dimensions to this simple concept, namely that microbes may be a health hazard in MWF even when malfunction is not significant and also that toxic chemicals (particularly biocides) in MWF and sludges could be a health or environmental issue when discharged to waste. The overall antimicrobial strategy for MWF must recognise the necessity of a 'cradle to grave' approach which satisfies all health and environmental concerns and regulations.

Speakers from UK and Scandinavia will present papers covering these various topics; MWF users should integrate this knowledge into an acceptable MWF management policy.

A panel discussion at the end of the meeting will give an opportunity for delegates to put their concerns and ideas forward for comment and debate.

Topics to be presented at this conference will include:

- End user problems
- Formulation trends in metal working fluids
- Potential health hazards in metal working fluids
- Inhalation hazards of microbially contaminated metal working fluids
- Regulatory issues
- Advances in physical methods of decontaminating metal working fluids
- Disposal of metal working fluids pressures on the aquatic environment

For further information, and a copy of the registration form, which will be available shortly, please contact **Caroline Little**, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR. Tel: 071 636 1004. Telex: 264380. Fax: 071 255 1472.

# Economic benefits of contracting out storage

By Richard Kellaway, Managing Director, GATX Terminals Ltd.

**There has been a dramatic reduction in the number of storage terminals since the 1970s. The general tendency amongst oil companies is to retain only a handful of wholly owned locations to retain strategic strength, whilst hiring space or exchanging product or joint venturing facilities for the balance of supply requirements.**

The increasing burden of environmental legislation in general and the EC Stage I directive on gasoline emissions in particular will force companies to look even closer at the economic viability of retaining their own terminals. Whereas ownership in whole or part will give oil companies a warm glow of security, there are strong reasons for considering the added flexibility of hiring tankage from an independent storage company.

The key word in this description is INDEPENDENT. The storage company operates as a liquid warehousing facility and does not own or trade in the products that it stores. It does not therefore compete in any way with its customers. All clients are treated equally. No one takes precedence on the road loading racks or the jetties. This is not always the case in exchange deals or even with joint venture terminals.

## Benefits

The oil company can release capital for its mainstream activities – exploration, refining and marketing. It has always been accepted practice to lease rail cars or trucks or ships; it is becoming equally common to lease storage.

The oil company can then forget the risks and problems of long-term ownership. Personnel are provided. A good deal of administrative back-up is provided. Any final clean-up of the terminal site is the responsibility of the storage company. Compliance with legislation on air emission,

water quality, soil pollution, safety cases, disposal of waste, COSHH – the list expands yearly – is the responsibility of the storage company.

The oil company can choose to store for short or long periods to suit its marketing strategy. Extra tanks can be taken on for new products or tanks dropped off where the market changes (the storage company is fortunately not entirely dependent upon the petroleum market for survival. Anything liquid is stored from vegetable oils to LPG, crude oil to molasses, chemicals to liquid sulphur).

The cost of the service provided is transparent. The client knows exactly what the storage costs. This is much harder to evaluate with wholly owned terminals where the economics can be obscured with exchanges or refinery netbacks or the sheer weight of history.

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**'Every independent is fanatical about this responsibility'**

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The cost of the service has to be competitive. The United Kingdom is a small island. There will always be another way of supplying a particular location. The storage company can keep the price competitive by using all the latest automation methods and hopefully by attracting as many clients as possible. Techniques such as bottom loading have transformed truck turn-around times so that a truck can enter, load and leave a terminal within 12-15 minutes. The limitation on product handling has therefore been largely removed as most storage companies have adequate tankage available. This just leaves the method of supply to be determined. Fortunately there is a trend away from supply in the 'rowing boat' class of ship to larger more economic vessels or to pipeline.

The customer is therefore getting all the benefits of economies of scale which would never be achievable by

himself and may only be partially achievable in a joint venture. The storage companies in fact pioneered the concept of commingling which has dramatically cheapened the costs of storage and kept rates remarkably low for over 20 years.

There may be six or seven major customers at any one terminal together with one or two oil traders (who are increasingly being backed by international oil companies with no direct marketing ambitions in the United Kingdom). This gives great comfort to all the supply departments which can use company assistance when supply is difficult or buy direct at certain times.

There is often extra tankage available to provide space for seasonal demand or during refinery shutdowns or if a strike threatens or any emergency has occurred. This is a service which would not be available if independent storage shrunk in the United Kingdom or was only available in Rotterdam.

Oil companies should be aware that the Stage I directive from the EC on gasoline emissions will greatly reduce the availability of gasoline storage in the future.

The Independent Tank Storage Association (ITSA) has had support from the EC Commission and the British government for a modest derogation to allow up to 25,000 tonnes of gasoline to be stored without the need for vapour recovery but there has been no support from the oil industry. From 1998 onwards there will be very little spare storage equipped to handle gasoline and provide a home, for instance, for pre-Budget stocks.

In fact, there is a chance of storage terminals reverting to bonded warehouse status to bring the United Kingdom into line with the rest of Europe. This would eliminate the benefits of stocking up before the Budget. Any change back to bonded status should include inland terminals. Pipeline terminals were the main casualties of the Oil Warehousing Review where it could take a week or more for product to arrive at the

terminal. For all sorts of good environmental reasons pipelines should be encouraged and not discriminated against by the government.

### Quality management

One aspect of independent storage is sometimes overlooked. The companies specialise in storage. They do nothing else. Many have been operating since the turn of the century. Every oil and chemical company you can name will be storing product somewhere in the world with one of the large international storage companies. This gives the independents an incomparable knowledge of storage comprising not only their own experience but also the experience of all the world's great companies.

This brings us back to the main benefit of using an independent. They do not store their own product. They hold it in trust for their clients who expect to receive back as far as is humanly possible the same quantity of product discharged into the tanks and certainly the same quality of product whether or not the product has been commingled. Every independent is fanatical about this

responsibility as their reputation and their survival in business depends upon it. The client has the right and the luxury of complaining fiercely when things go wrong, an opportunity which is not always so easy in-house.

This fundamental aim of the business is now strengthened by ISO9002 certification which proves that the storage company does what it says it does. Many companies also use total quality management techniques to back up and extend ISO9002 to ensure that every employee is thinking about ways to constantly improve the operations. Finally the British independent storage industry has established a National Vocational Qualification scheme in conjunction with the Petroleum Training Federation. This means that over the next five years every operator will be fully qualified and certificated under the City and Guilds umbrella. The NVQ will enhance ISO9002 and vice versa. ITSA believes that this approach is a world first.

The sum total of all these arguments is that any oil company should feel totally safe to entrust its products with an independent storage

company and, like contracting out the truck fleet, may well achieve significant recognisable cost benefits in the short and the long term. The benefits can be enhanced by building up the partnership concept whereby both the oil company and storage company are as open as possible with each other so that the client requirements are met as precisely as possible. It is becoming essential for both parties to build up this type of trusting relationship to provide security for both sides.

If the general trend in the industry is towards less and less storage terminals handling more and more product then the independent storage locations which survive will inevitably play a larger and larger part in UK oil distribution. In a global sense, however, the costs of meeting all the environment legislation will be so great that only the very largest companies which are totally dedicated to the business of storage will survive to provide the service. ■

**This is a shortened version of a paper given at a recent IP conference, 'Improving Oil Industry Competitiveness through the Logistics Chain'.**



Design 1:

Broad navy and burgundy diagonal stripes of equal width separated by a fine gold line, with the Institute's archaeopteryx crest 'watermarked' faintly within all the navy stripes and an additional single archaeopteryx crest watermarked in the burgundy stripe below the knot.

Each design is available in either silk or polyester:

Silk ties	£17.99
Polyester ties	£10.50

Prices are inclusive of postage, packing and VAT.

Please send orders to:

Ms Caroline Nutt, Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR.



Institute of Petroleum

## Fellows' Ties

Design 2:

As Design 1, except that the additional single archaeopteryx crest within the burgundy stripe is embroidered in full colour.



# Fate and Effects of Marine Pollution in UK Waters – with a perspective on IP-sponsored research

By Dr Jenifer M Baker

This report reviews the literature concerning the fate and effects of marine oil pollution in UK waters, starting with the *Torrey Canyon*. Particular emphasis is given to accidental spills because of public concern, though oil sources other than spills are also investigated. The review includes studies carried out in temperate waters throughout the world where they are relevant to understanding UK incidents. The report identifies the contribution made by IP-sponsored research and discusses its importance. Finally it draws conclusions concerning the significance of oil pollution in UK waters and suggests areas where further research would be useful.

This report has been widely distributed to oil companies, the Department of the Environment, the Ministry of Agriculture, Fisheries and Food, the Marine Pollution Control Unit, Lord Donaldson's Inquiry and the Ecological Steering Group on the oil spill in Shetland. Copies are available for reference in the IP Library.

The main findings are summarised here.

In a variable and constantly changing marine environment, it is essential to take natural fluctuations and trends into account when trying to distinguish pollution effects. For example, there are documented cases of declines in shore organisms following very hot or cold weather which could easily have been confused with oil spill effects.

Chronic sources (eg land-based discharges) contribute more oil overall to UK waters than catastrophic pollution (eg tanker accidents), though the latter generates more concern because of the acute threats to coastal resources, shores and wildlife.

Natural seepages provide a minor input of hydrocarbons to UK waters which is of considerable biological interest. Some North Sea seeps of light hydrocarbons support unique biological communities with food

webs apparently based on the hydrocarbon-degrading bacteria associated with the seeps.

The fate and effects of oil vary widely, depending on its physical and chemical properties, the degree of weathering or degradation and the physical state.

Both natural cleaning and human intervention encompass physical, chemical and biological processes, with microbial degradation being particularly important for the eventual disappearance of oil from the marine environment. Dispersal, either natural or using chemical dispersants, redistributes oil as droplets in the water column, thus reducing the threat to shores and wildlife and promoting biodegradation by enhancing oxygen supply. Biodegradation on the shore may in some circumstances be promoted by tilling and/or bioremediation (fertiliser treatment).

Clean-up methods may have disadvantages in particular situations (eg hot-water washing can kill shore invertebrates, while dispersed oil may affect organisms in the water column). It is therefore important to weigh up the advantages and disadvantages of the different clean-up methods (net environmental benefit analysis) as part of the contingency planning process.

The acute effects of a spill may include large mortalities of seabirds and shore organisms but there is no evidence that the populations of these and other organisms including fish and mammals have been significantly affected in the long term. Nevertheless, the possibility remains that some localised populations could be affected by particular combinations of circumstances.

On shorelines, documented oil retention times vary from a few days (on wave-exposed rocky shores) to more than 20 years (on sheltered marshes where the oil has penetrated the sediment or been buried). Oil retention times have a bearing on biological recovery times, which range from 1-20 years depending upon shore type and other variables. The information is summarised and analysed in **Figure 1**. Aggressive shore clean-up can extend recovery times in some cases (though may nevertheless be justifiable, for example if a net environmental benefit analysis indicates a large advantage for birds or mammals).

In the case of large nearshore spills, there may be some effects on sea bed organisms, although these are usually less drastic than the short-term effects on intertidal organisms because there is much less contact with the oil.

Other localised seabed effects are associated with discharges and other disturbance, for example around off-shore platforms.

IP sponsorship played a catalytic role in establishing oil pollution research after the *Torrey Canyon* incident. Particular strengths of IP projects have been monitoring the oil port of Milford Haven, rocky and sedimentary shore studies including field experiments on clean-up, and sediment/oil interactions. In these areas the IP work has provided a substantial part of the total UK effort and a valuable contribution to the international scientific literature.

In the future, it would be useful to take more advantage of the longer-term information which has been obtained over the past 25 years. More detailed analysis of existing information could be combined with focused re-survey work (eg at historical spill sites) to provide perspectives on subjects such as predicting shore recovery times for different scenarios and analysing a case history (Milford Haven) where 30 years of dispersant use in nearshore waters does not appear to have caused ecological havoc.

### Conclusions

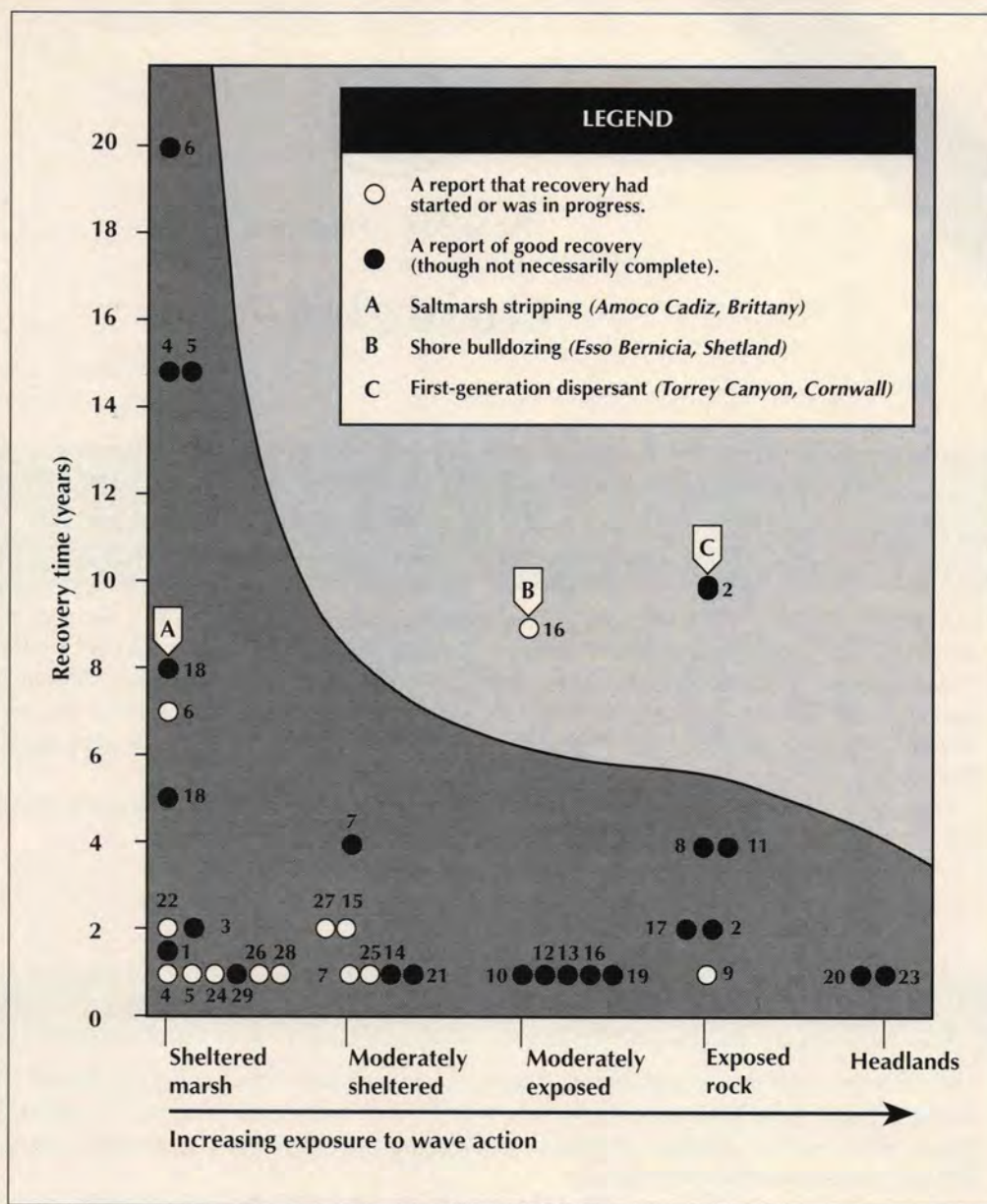
There is a relationship between recovery time and exposure to wave action, with many reports of good recovery within one or two years for the more exposed (mainly rocky) shores. With sheltered march shores recovery times may be much longer, though are not inevitably so. The relationship is somewhat 'fuzzy' because other variables such as oil

type and oil loading are also involved; there is also some fuzziness with what exactly is meant by 'recovery', 'sheltered', and 'exposed' in the various publications consulted.

Further information would be particularly useful in the moderately sheltered part of the spectrum of shore types, where long-term studies would give a better idea of the times taken to good recovery. In other words, studies in this area would be particularly helpful in

refining the tentative model indicated by the curve.

Recovery times were long (over eight years) for the three most aggressive cases of shore cleaning (see A, B and C above), and in the cases of B and C the cleaning treatments seem to have taken the recovery times well outside the normal range to be expected for these types of shore. In the case of the saltmarsh A, post-cleaning recovery was facilitated by re-planting. ■



Biological recovery on shores following oil spills: analysis of information from UK and other temperate zone incidents and field experiments. A, B and C are incidents where particularly aggressive shoreline cleaning was carried out.

The spills have been arranged along an exposure gradient from sheltered march, through shores of intermediate exposure to wave action and various substratum types, to very exposed rocky headlands. This arrangement has been done on the basis of site descriptions and maps in the various scientific publications concerned and is not quantitative.

**NEW**



The Institute of Petroleum

## Guidelines

### RECOMMENDATION FOR SAFE USE OF RADIO TELEPHONE INSTALLATIONS IN CABS OF PETROLEUM CARRYING VEHICLES INCORPORATING IP SPECIFICATION DOC-1.92.1

In 1992 the Electrical Committee DOC-1 produced a specification DOC-1.92.1 designed to allow operators to achieve a high level of safety in their use of radio telephone equipment in the cabs of petroleum carrying vehicles. The specification is particularly directed towards the avoidance of radio frequency induced sparking in fittings or equipment that may be close to or mounted on the vehicle. It is based on the Electrical Research Association Report 90-0481 which was prepared by the ERA on behalf of the IP. (Details of the specification were published in the July 1992 issue of *Petroleum Review*)

The recommendations and specification, including a typical block diagram showing 24v and 12v supplies for RTU, are available at a price of **£16.00. (Members £12.00) (Overseas £18.00)**.

### THE INSPECTION AND TESTING OF AIRPORT HYDRANT PIT VALVES

This advisory document is primarily intended to give guidance in developing procedures for the inspection and testing of airport hydrant pit valves in service. It covers static testing and inspection on a weekly basis and dynamic testing with or without deadman control. Testing after repair or overhaul is addressed as are methods for containing fuel spray during monthly static testing.

The document is available at a price of **£16.00. (Members £12.00) (Overseas £18.00)**

### GUIDANCE NOTES ON REFINERY AND DISTRIBUTION TERMINALS WORK PERMIT SYSTEMS

This document provides guidance on the general principles of permit to work systems in the downstream sector of the petroleum industry and is directed at refineries, distribution terminals and similar installations. An important aim is to achieve a basic level of harmonisation on the issue of permit to work systems in order to provide a consistent, recognisable framework for people, such as contractor personnel, subject to working at a variety of locations in the petroleum industry.

It should be read in conjunction with the Oil Industry Advisory Committee (OIAC) document 'Guidance on Permit to Work Systems in the Petroleum Industry' which gives detailed guidance on permit to work systems.

The document is available at a price of **£16.00. (Members £12.00) (Overseas £18.00)**.

**These publications can be obtained from the IP Library. Tel: 071 636 1004. Fax: 071 255 1472**



The Institute of Petroleum

# Economics of Refining Conference

## What the Environment Is Costing the European Refining Industry

Tuesday 19 October 1993

To be held at The Cavendish Conference Centre, London

This conference is the latest in the series on the Economics of Refining, which are held every two years and attract very large audiences.

This year, the Institute takes a cold hard look at the frightening costs associated with the increasingly stringent European regulations being pressed forward in the name of the environment. Initially our industry must find the money to pay for

the changes, but eventually the general public will have to pay in increased product prices – so to what extent is it all really necessary?

The 1993 IP Economics of Refining Conference will include the latest papers on modern technology to ease some of the problems and a concrete example of very large sums of money already committed to a major environmental upgrade.

### Topics to be presented will include :

- EC environmental legislation and the European oil industry
- New technologies for efficient refining in the environmentally conscious 1990s
- Achieving refining profitability while improving environmental performance
- Technological options for the clean & cost effective use of heavy residues
- New catalyst and process developments in residuum upgrading
- Upgrading Shell's Pernis refinery for improved environmental performance

For further information, and a copy of the registration form which should be available at the end of July, please contact **Caroline Little**, Conference Officer, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR, UK. Telephone: 071 636 1004. Telex: 264380. Fax: 071 255 1472.

# IP Information Service News

## Selected additions to Library Stock

### Directories

*ANEP 93 European petroleum year book*. 26th edition. Hamburg, Urban-Verlag, 1993.

*European petroleum directory 1993*. Tulsa, Pennwell, 1993.

*USA Oil Industry directory 1993*. Tulsa, Pennwell, 1993.

*USA Oilfield service, supply and manufacturers directory 1993*. Tulsa, Pennwell, 1993.

*The chemical tanker register 1993*. London, Clarkson Research Studies Ltd, 1993.

*The tanker register 1993*. London, Clarkson Research Studies Limited, 1993.

### Economics/Business/Policy

The energy consequences of the proposed carbon/energy tax. COMMISSION OF THE EUROPEAN COMMUNITIES DIRECTORATE GENERAL FOR ENERGY (DG XV11). Feb 93.

*Petroleum refinery process economics*. By: Maples R E., Tulsa USA, Pennwell Books, 1993.

*The effects of the 1993 budget changes*. London, Ernst & Young, 1993.

*Britain's energy policy and the coal crisis*. INSTITUTION OF ELECTRICAL ENGINEERS. London, IEE, 1993.

### Environment

*Bioremediation for shoreline cleanup following the 1989 Alaskan oil spill*. EXXON RESEARCH AND ENGINEERING CO. By: Bragg J R, Prince R C, Wilkinson J B, Atlas R M. Florham Park NJ USA, Exxon Company, Dec 1992.

*Dispersants and their role in oil spill response*. IPIECA report series volume 5. London, IPIECA, 1993.

*Global climate change: a petroleum industry perspective*. London, IPIECA, 1991.

*Natural gas in developing countries: Evaluating the benefits to the environment*. By: Homer J. World Bank discussion paper 190. Washington DC, World Bank, 1993.

### Standards

API RP 2A - LRFD *Recommended practice for planning, designing & constructing fixed offshore platforms - load & resistance factor design*. 1st ed. Washington DC USA, American Petroleum Institute, Jul 1993.

API RP 2A - WSD *Recommended practice for planning, designing & constructing fixed offshore platforms - working stress design*. 20th edition. Washington DC USA, API, Jul 1993.

API RP 2FP1 *Recommended practice for design, analysis, & maintenance of moorings for floating production systems*. 1st ed. Washington DC USA, American Petroleum Institute, Feb 1993.

API RP 1117 *Lowering in-service pipelines*. 1st ed. Washington DC USA, American Petroleum Institute, Feb 1993.

API Publication 2517D *Documentation file for API publication 2517 Evaporation loss from external floating - roof tanks*. 1st ed. Washington DC USA, API, March 1993.

*1993 annual book of ASTM standards. Section 5 Petroleum products, lubricants and fossil fuels. Volume 05.02 Petroleum products & lubricants (11) D 2597 - D 4629*. Philadelphia, USA, ASTM, 1993.

BS EN 589: 1993 *Specification for automotive liquefied petroleum gas*. Milton Keynes UK, BSI, 1993.

## Library/Information Department

### Times of Service

Visitors welcome: 9.30 a.m. to 5.00 p.m.  
Telephone queries: 10.00 a.m. to 5.00 p.m.  
Monday to Friday (except Bank Holidays).

### Staff contact list

**Loans and Periodicals** Liliana El-Minyawi,  
*Library Assistant*

**Library holdings and use of Library** Margaret Whellams,  
*Assistant Librarian*

**Online searches, information queries, statistical information** Lyn Nevin and Julia Clark,  
*Information Officers*;  
Catherine Cosgrove,  
*Head of Department*

**IP Statistical Service subscriptions** Julia Clark

**IFEG** Catherine Cosgrove

IFEG

## News

Our next event will be a Picnic in the Park and visit to the Open Air Theatre in Regent's Park to see *The Taming of the Shrew* on the evening of Thursday, 12 August.

All IFEG members should by now have received their IFEG Members Directory for 1993. If not - contact Catherine Cosgrove.

*If you are interested in joining IFEG, for £10 for 1993, please contact Catherine Cosgrove on 071-636 1004 or write to her at the Institute of Petroleum, 61 New Cavendish Street, London, W1M 8AR.*

## Selected additions continued

BS 8010: Part 3: 1993 *Code of practice for pipelines Part 3: Pipelines subsea: design, construction and installation*. Milton Keynes UK, BSI, 1993.

### Upstream Oil Industry

*Development of the oil and gas resources of the United Kingdom 1993: A report to Parliament by the Minister for Energy (The Brown Book)*. DEPARTMENT OF TRADE AND INDUSTRY. London, DTI, 1993.

*Oil and gas pipeline fundamentals*. By: Kennedy, John L. 2nd ed. Tulsa, Pennwell, 1993.

### Periodicals new to the IP

*Middle East Economic Survey*  
*Oil and Gas: Russia, Central Asia and the Caucasus*. ISSN 0966-4505



The Institute of Petroleum

## New Consultant Handbook 1993/94

Members of the Institute of Petroleum offer consultancy services in a wide range of petroleum industry subjects. Currently about 500 members offer 60 different categories of expertise.

A handbook of all consultants indexed by category is available from the Institute for £12. (Payment by cheque or credit card with the order.)

*Additives Technology*  
*Aviation*  
*CAD (Computer Aided Design)*  
*Corrosion Technology*  
*Custody Transfer Arrangements*  
*Energy Efficiency*  
*Environment - General*  
*Environment - Marine Pollution*  
*Expert Witness Services*  
*Finance*  
*Fuels & Fuel Technology*  
*Government & EC Relations*  
*Health & Hygiene*  
*Heat Transfer*  
*Human Resources*  
*Industrial Relations*  
*Information Technology*  
*Investigation*  
*Laboratory & Test Method Advice*  
*Legal Advice*  
*Loss Prevention*  
*Loss Prevention - Marine*  
*Lubricant Technology*  
*Maintenance & Inspection*  
*Management Organisation*  
*Marine Operations*  
*Market Research & Analysis*  
*Marketing - General*  
*Marketing - Operations*  
*Measurement & Fluid Flow*

*Microbiology*  
*Oil & Gas Allocation*  
*Oil / Gas Economics & Pricing*  
*Oil & Gas Explorations*  
*Oil & Gas Production*  
*Oilfield Chemicals*  
*Oilfield Development*  
*Oilfield Machinery & Equipment*  
*Oilfield Sub-sea Development*  
*Petrochemicals*  
*Petroleum Information Services*  
*Pipeline Planning & Management*  
*Planning & Economics*  
*Plant Design*  
*Platform Decommissioning*  
*Project Services & Engineering*  
*Public Relations*  
*Quality Management & Assurance*  
*Refinery Operations*  
*Risk Analysis*  
*Risk Analysis - Financial*  
*Road Transport*  
*Safety*  
*Safety Critical Systems*  
*Site Selection & Investigation*  
*Supply & Distribution*  
*Technical Writing*  
*Telecommunications & Networks*  
*Trading & Shipping*  
*Training*

Alternatively a list of consultants in any category will be provided free of charge on application (maximum 2 categories).



Anyone interested should contact Jo Howard-Buxton at the IP, or send a request for the handbook, together with a cheque for £12 to: Technical Department, Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR.  
Tel. 071 636 1004 Fax. 071 255 1472

## Mooring-tensioner units

Bardex Corporation, USA has introduced a series of mooring and tensioning systems designed to reduce the topside load weight and free-up space on the decks of floating production vessels (FPVs) used in developing marginal and deepwater oil fields.

The Bardex system designs are in response to growing pressure from field developers who want to maximise the total deck load of FPVs with various production equipment. In order to outfit the FPV with all the desired production equipment, there is a need for a new kind of mooring system that cuts back on valuable space presently required to accommodate bulky chain windlasses and, at the same time, achieve weight savings.

The new mooring and

tensioning systems will, according to Bardex, reduce the weight on the deck by as much as 75 percent and take up considerably less deck space.

The systems use specially designed hydraulic linear chain pullers which feature a small foot print and straight-pull design. Depending on application, provision can be made for rapid release, automatic cycling, cylinder position monitoring and/or other variations to the basic design.

The unit's lower latch or stopper is designed with appropriate safeguards to take tension forces up to full breaking strength of the stud-link chain that is used in the puller. Cylinders are designed to supply the specific pretensioning force required for



Mooring tensioner unit

initial tensioning. This can be any percentage up to 100 percent of chain break strength. By using double acting cylinders, the chain can be pulled in or paid out under full tension in a controlled manner.

## Emergency response trailer

Rapid control and containment of hazardous cargo spillages on the roadside is provided with the new Emergency Response trailer from BRS Tankfreight.

In an emergency, the trailer can be connected quickly to any suitable vehicle and towed to the scene of an accident, where it can be used to assist the emergency services, if required, in spillage containment. Special equipment on the trailer can be used to transfer products safely to an empty tanker, if necessary.

Once the scene of the accident is made safe, other equipment in the trailer can be deployed to assist in the clean-up operation, helping to

limit the effects of pollution on the local environment.

Thirteen trailers are located at strategic BRS Tankfreight depots throughout the United Kingdom, ensuring a quick reaction to an incident. Each trailer is operated by a specially trained team and contains equipment to meet the specific needs of the local BRS Tankfreight operation.

The basic contents of each trailer include a chemical spillage control kit, a 110/240 watt mobile generator for power and lighting purposes and corken compressor unit, which enables LPG vapour to be transferred across from one tanker to another.

Mr David Giles, a director

of BRS Tankfreight says, 'In these environmentally sensitive times, it is the duty of every responsible operator to ensure they have the proper equipment in place to deal quickly and effectively with accidents'.



Emergency Response trailer assisting the fire brigade.

## Emergency lighting

Simplex Lighting has launched a new emergency lighting system designed to improve safety in offshore installations and other hazardous areas.

Reports on several offshore disasters have highlighted the need for escape routes to be clearly defined with emergency lighting which is not dependent on the survival of power supplies.

The new Simplex Lumicae fittings have been developed in conjunction with Statoil and Conoco to meet these objectives. The new system is capable of withstanding fire, explosion and severe vibration. Totally sealed, the product is rated IP68 in emergency mode.

Mounted safely at a low level, the Simplex Lumicae is visible in dense smoke and does not emit any toxic gases in a fire. It operates in emergency mode for up to four hours in the event of a mains failure. It requires zero maintenance, providing uninterrupted lighting for ten years with no change of tube or batteries.

## Seabed dredge

Alluvial Mining have built a giant 30ft high seabed dredge for the excavation of caissons and silos set in the seabed. It has particular applications where subsea valves and pipeline interconnections need to be embedded in very soft sediments.

The circular frame AMROD-SD can dredge holes up to 9m in diameter and 7.4m deep. It carries a 10 inch dredge head mounted on a vertical moving mast, with the suction mouth on a rotating beam.

The whole structure sits on the seabed on mud mats or on top of and encircling the previously installed caisson. Once the

frame is in place, the operator can manoeuvre the suction head to any position within the work area, using remote controls at the surface. At the same time he can lower it to any depth within the caisson.

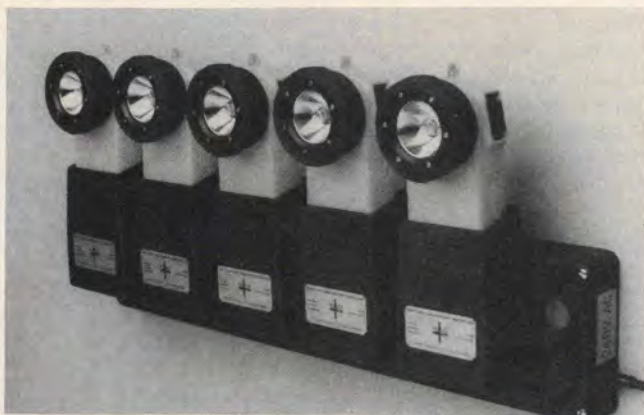
The structure can be used at depths to 600m and can incorporate buoyancy aids to prevent it from sinking into softer materials.

Following fabrication and tests at Alluvial Mining's Sudbury yard, the structure will be transported offshore to dredge holes for Christmas tree installations in the Norwegian sector of the North Sea. The whole dredge can be disassembled into six components for road transportation.

## Intrinsically safe torch

Furneaux Riddall Company Limited have obtained intrinsic safety certification for a new torch – the Halo Plus2. It is the only British made torch using Ni-Cad rechargeable batteries and a halogen bulb with the following certification – EEx ib e 11C, T3 for Ni-Cad batteries; T4 for Alkaline batteries. To overcome the problems of using Ni-Cad batteries with a halogen bulb, a special circuit was specifically designed for this purpose.

### Safety torch



## Scale build-up technology

Norwegian based RC Group have developed an infrared thermography technique, through their subsidiary RC Electro Automation, for identifying the build up of scale on process and production equipment offshore.

The technique was first established when RC Electro Automation were commissioned last year by Phillips Petroleum to evaluate new areas where thermography might be used for onstream inspection of mechanical, electrical and process equipment.

The most interesting results were found when looking at the build up of scale and leakage through pressure safety valves on Christmas trees, flow lines and production headers.

The major advantage of infrared thermography is that it allows users to measure the temperature of objects at a safe distance from the object and, in the case of process lines, without shutting down production. Using a Thermovision 470 thermal imaging system supplied by AGEMA

Infrared Systems, RC Electro Automation believes it has now succeeded in developing a technique which will allow operators to locate scale or deposits in pipelines, determine their thickness and take precautionary action as required.

A thermal image (thermogram) is taken of a pipeline where scale has been allowed to build up. The Isotherm feature on the thermogram indicates the temperature along the pipeline. Where scale has built up the temperature is lower so, as the thickness of the scale decreases the temperature of the outside surface of the pipe increases. The scale is therefore acting as an insulator, reducing heat flow from the inside of the pipe to its surface.

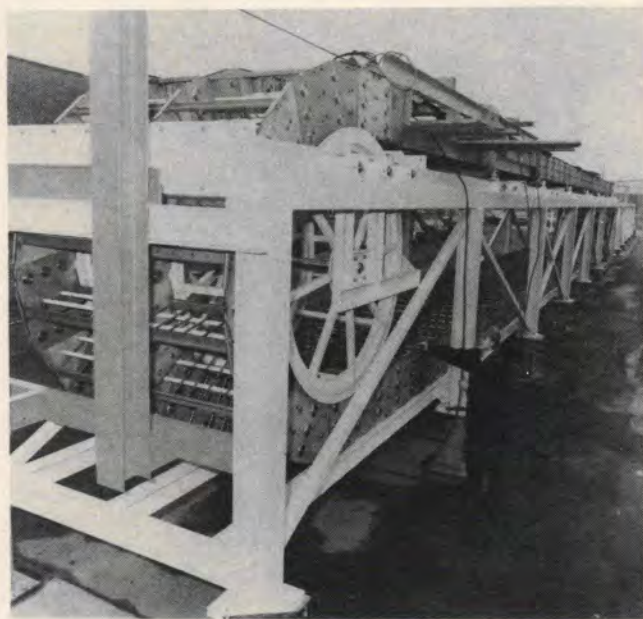
The application of thermography in detecting scaling is a small area of RC Electro Automation's work and the company has also achieved some interesting results looking at pressure safety valves – in particular blockages, restrictions and leakages.

## Drag chain system

Metool products of Nottingham is to deliver a £1.5 million contract for drag chain packages for Conoco's Heidrun field in the North Sea. The drag chain systems manage the flexible cables and hoses which service the drilling module and enable the drilling rig to be moved from one well slot to another without tangling or damaging the supply lines or having to disconnect and reconnect them.

Metool has designed and manufactured four drag chain sets to accommodate movement along the rig's north/south and east/west axes. The north/south system consists of two chains: one 15.75m long which will carry cables and another 13.95m long to carry 28 hoses. The unit has a nominal traverse facility of 19.6m. The east/west unit is a carriage system with two 24.7m chains. The west loop carries cables and the east loop 20 hoses, with a nominal traverse of 38.50m.

The company has fitted all drag chains with hoses at their works and has also supplied special attachments for supporting and lifting the equipment during transport and installation so they can be lifted onto the module as single units.



Drag chains for Heidrun platform

## Contact list

Furneaux Riddall Company Limited	0705 668621
Bardex Corporation (USA)	(805) 964 7747
BRS Tankfreight	0423 506181
Simplex Lighting Ltd	021 557 2828
Alluvial Mining Limited	0787 880218
Metool Products Ltd	0602 225931
RC Electro Automation (Norway)	+47 4 63 16 00

# FORTHCOMING EVENTS

## August

### 3rd-5th

**Darwin, Australia:** 'South East Asia Australia Offshore Conference '93'. Details: IBC Technical Services, 545 Orchard Road, #12-01, Singapore 0923. Tel: (65) 732 1970. Fax: (65) 733 5087.

### 24th-27th

**Stavanger, Norway:** 'Environment Northern Seas '93'. Details: Mrs C Frimann-Dahl, c/o Norwegian Trade Council, Charles House, 5/11 Lower Regent Street, London SW1Y 4YY. Tel: (071) 973 0188. Fax: (071) 973 0189.

### 30th-3rd September

**Dundee:** 'Natural Resources and Environmental Law and Practice'. Details: Mrs Moira McKinlay, Centre for Petroleum & Mineral Law & Policy, The University of Dundee, Park Place, Dundee, Scotland DD1 4HN. Tel: (0382) 307300. Fax: (0382) 22578.

## September

### 7th-10th

**Aberdeen:** 'Offshore Europe 93'. Details: Offshore Europe Partnership, Rowe House, 55/59 Fife Road, Kingston upon Thames, Surrey KT1 1TA. Tel: (081) 549 5831. Fax: (081) 541 5657.

### 9th

**London:** 'British Annual Energy Forum 1993'. Details: The British Energy Association, 34 St. James's Street, London SW1A 1HD. Tel: (071) 930 1211. Fax: (071) 925 0452.

### 9th-15th

**York:** 'International Solvent Extraction Conference'. Details: Conference Secretariat, Society of Chemical Industry, 14/15 Belgrave Square, London SW1X 8PS. Tel: (071) 235 3681. Fax: (071) 823 1698.

### 13th-16th

**Cranfield:** 'Calibration of Flowmeters'. Details: Short Course Administrator, Department of Fluid Engineering & Instrumentation, School of Mechanical Engineering, Cranfield Institute of Technology, Cranfield, Bedford MK43 0AL. Tel: (0234) 754766. Fax: (0234) 750728.

### 13th-17th

**Manchester:** 'Computation of Industrial Heat and Fluid Flow Problems' - short course. Details: Mrs I Bowker, UMIST, PO Box 88, Manchester M60 1QD. Tel: (061) 200 3702. Fax: (061) 200 3723.

### 13th-October 8th

**Boston, Massachusetts:** 'The Third Annual International Petroleum Management Certificate Program' - A four week programme covering the International Petroleum Business. Details: Sue Maloney, IHRDC Seminars, 535 Boylston Street, Boston, MA 02116 USA. Tel: (617) 536 0202. Fax: (617) 536 4396.

### 15th-18th

**Oxford:** 'International Business Outlook'. Details: International Herald Tribune Conference Office, 63 Long Acre, London WC2E 9JH. Tel: (071) 836 4802. Fax: (071) 836 0717.

### 15th-17th

**Singapore:** '1993 Regional Conference on Energy Price

Risk Management'. Details: Ms Saskia Dormaar, IIR Pte Ltd, #08-03 Golden Wall Centre, 89 Short Street, Singapore 0718. Tel: 65-33835321. Fax: 65-3364017.

### 16th

**London:** 'Kvaerner Subsea Booster Station'. Details: Gareth Edwards, Institution of Mechanical Engineers. Tel: (071) 973 1243.

### 16th-17th

**London:** 'UK and International Oil and Gas Taxation - Optimising your Tax Efficiency to Maximise your Profits'. Details: IIR Ltd., 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD. Tel: (071) 412 0141. Fax: (071) 412 0145.

### 19th-29th

**Divonne-les-Bains, France:** '25th International Petroleum Economics Seminar'. Details: Dr Bob Gale, Seminar Manager, Petroleum Economics Limited, Piercy House, 7 Cophall Avenue, London EC2R 7BU. Tel: (071) 638 3758. Fax: (071) 638 3708.

### 20th-21st

**Vienna:** 'The Future of European Energy'. Details: Jackie Murphy, The Economist Conferences, 40 Duke Street, London W1A 1DW. Tel: (071) 493 6711. Fax: (071) 931 0228.

### 20th-21st

**London:** 'Reduce Time to Market by Implementing Simultaneous Engineering'. Details: The Customer Services Manager, IIR Ltd., Industrial Division, 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD. Tel: (071) 412 0141. Fax: (071) 412 0145.

### 20th-24th

**Oxford:** 'Natural Gas - The Commercial Challenges', a five-day Seminar/Workshop. Details: Anita Gardiner, The Alphanatia Partnership, Alphanatia House, 82 Rivington Street, London EC2A 3AY. Tel: (071) 613 0087. Fax: (071) 613 0094.

### 20th-24th

**Manchester:** 'Turbulence Modelling for CFD Applications' - short course. Details: Mrs I Bowker, UMIST, PO Box 88, Manchester M60 1QD. Tel: (061) 200 3702. Fax: (061) 200 3723.

### 21st-22nd

**Edinburgh:** 'Environmental Monitoring at an Oil Terminal: The Shetland Experience'. Details: The Meetings Secretary, The Royal Society of Edinburgh, 22-24 George Street, Edinburgh EH2 2PQ. Tel: (031) 225 6057. Fax: (031) 220 6889.

### 21st-22nd

**London:** 'Fourth International Conference - The Jack-up Platform, Design, Construction & Operation'. Details: The Jack-up Conference Secretary, Ocean Engineering Research Centre, Department of Civil Engineering, City University, Northampton Square, London EC1V 0HB. Tel: (071) 477 8141. Fax: (071) 477 8570.

### 21st-22nd

**Cardiff:** 'The First International Conference on Combustion & Emissions Control'. Details: Conference Department, The Institute of Energy, 18 Devonshire Street, London W1N 2AU. Tel: (071) 580 0008. Fax: (071) 580 4420.

# FORTHCOMING EVENTS

## 22nd-23rd

**London:** 'Energy Futures' – workshop. Details: Training Department, International Petroleum Exchange, International House, 1 St Katherine's Way, London E1 9BR. Tel: (071) 481 0643. Fax: (071) 481 8485.

## 23rd-24th

**Aberdeen:** 'Practical Application of Total Quality Management in Offshore Companies'. Details: IIR Ltd., 28th Floor, Centre Point, 103 New Oxford Street, London W1CA 1DD. Tel: (071) 412 0141. Fax: (071) 412 0145.

## 26th-2nd October Newfoundland:

'MARSIM '93' – International conference on Marine Simulation and Ship Manoeuvrability. Details: Mrs J Harris, MARSIM '93, Conference Co-ordinator, Marine Institute, PO Box 4920, St. John's, Newfoundland, Canada A1C 5R3. Tel: 709 778 0660. Fax: 709 778 0346.

## 27th-28th

**Nicosia, Cyprus:** 'The 7th APS Conference – Middle East Strategy to the Year 2006: Oil, Gas, Border Issues & Energy Finance.' Details: APS Conferences, P.O. Box 3896, Nicosia, Cyprus. Tel: (357 2) 351778. Fax: (357 2) 350265.

## 27th-29th

**London:** 'Seatrade Tanker Industry Convention'. Details: Vanessa Stephens, The Seatrade Organisation, Seatrade House, 42 North Station Road, Colchester CO1 1RB. Tel: (0206) 45121. Fax: (0206) 45190.

## 27th-30th

**Cranfield:** 'Pumps and the Plant Design Engineer'. Details: Short Course Administrator, Department of Fluid Engineering & Instrumentation, School of Mechanical Engineering, Cranfield Institute of Technology, Cranfield, Bedford MK43 0AL. Tel: (0234) 754766. Fax: (0234) 750728.

## 27th-1st October

**Aberdeen:** 'Drilling Engineering – A five day training course'. Details: Centre for Continuing Education, Heriot-Watt University, Riccarton, Edinburgh EH14 4AS. Tel: (031) 451 3014. Fax: (031) 451 3005.

## 21st-23rd

**Bradford:** 'Hydrocyclones'. Details: Dr J Svarovska, Course Director, Fine Particle Software, 8 Carlton Drive, Bradford, West Yorkshire BD9 4DL. Tel/Fax: (0274) 546276.

## 28th-1st October

**London:** 'Third Grove Fuel Cell Symposium – The Science, Engineering and Practice of Fuel Cells'. Details: Kay Russell, Conference Department, Elsevier Advanced Technology, Mayfield House, 256 Banbury Road, Oxford OX2 7DH. Tel: (0865) 512242. Fax: (0865) 310981.

## 29th

**Aberdeen:** Diverless Operations: Installation, Construction and Intervention'. Details: 2 Marlborough Street, Faringdon, Oxon SN7 7JP. Tel: (0367) 242525. Fax: (0367) 241125.

## 29th-30th

**Aberdeen:** 'Human Factors in Emergency

Response Offshore' – Developments in Evacuation, Escape and Rescue. Details: Philippa Giles, Business Seminars International Ltd, Grant House, 56/60 St John Street, London EC1M 4DT. Tel: (071) 490 3774. FaxL (071) 490 2296.

## 30th

**Bath:** 'Duration of Repeated Dose Toxicity Studies – A Commonsense Approach?' Details: Dr Paul Illing, Health and Safety Executive, R425

Magdalen House, Stanley Precinct, Bootle L20 3QZ. Tel: (051) 951 3420. Fax: (051) 922 7918.

## 30th-1st October

**London:** 'Risk Management for the Transport of Dangerous Goods – The Pan-European Challenge'. Details: Jane Worman, IBC Technical Services Ltd., Gilmoora House, 57-61 Mortimer Street, London W1N 7TD. Tel: (071) 637 4383. Fax: (071) 631 3214.



## IP Annual Dinner 1994

The Institute of Petroleum's Annual Dinner in 1994 will be held at

*Grosvenor House, Park Lane, London W1 on  
Wednesday 16 February*

### IMPORTANT - PLEASE NOTE

Ticket application forms will be sent as part of Petroleum Review to all individual and collective (Company) IP members in their **October 1993 Petroleum Review**.

However, because of possible postal delays, non UK/European members who wish to apply for tickets should contact **Caroline Little** at the IP at **61 New Cavendish Street, London W1M 8AR** as soon as possible, and an application form will be forwarded during late September.

The closing date for receipt of ticket applications will be **Friday 22 October 1993**.

No applications will be considered after this date.

**Tel: 071-636 1004. Telex: 264380. Fax: 071-255 1472.**

# Institute News

## New IP branch in The Netherlands

Finally after a whole year we are there! The legislation of the Netherlands Branch is a fact – this seemingly simple requirement turned out to be an enormous challenge. On behalf of the committee many thanks to: Chevron, the Netherlands Section of the SPE and the IP in London for their contributions.

Our first technical meeting for members and non-members proved to be a success. The Committee members of the Netherlands Branch of the IP were the guests of the International Institute for Energy Law (IIEI) of the University of Leiden where this first meeting took place in December last year.

The main speaker, Drs ER van der Wyck, executive of Shell Nederland BV in Rotterdam, gave a highly appreciated presentation, illustrated with a large number of slides, on 'The West European Gas Market Challenge'.

He was followed by Prof Dr PJ Slot and Dr Peter Cameron of the Directorate of IIEI who talked on 'The Energy Law and the Work of the IIEI' and 'Developing a Legal Framework for Pitfalls and Opportunities of the Petroleum Sector in Russia'.

Mr Charles Smith, IP President, concluded the presentations with a fascinating review of 'The Role of the Institute of Petroleum' – now extended with the formation of the new branch in the Netherlands.

The subsequent 'Question and Answer' session clearly showed that the delegates were captivated by the contents of the presentations.

Mr Kees Fister, Chairman of the new branch, told the meeting that it was intending to hold one or two further meetings during 1993. After special thanks to the speakers and to the hosts, those present enjoyed a small cocktail party.

The committee is now seeking the views of IP members in the Netherlands and Belgium on suggestions for future branch activities. We are encouraged by the interest and support experienced to date from companies, institutions and individuals; for this reason we are enthusiastic about achieving our mission in The Netherlands.

**K Fister, Chairman**

### COMMITTEE

Kees Fister	Chairman
Chris Fisher	Secretary
Geoff Franks	Treasurer
Jeremy Hogg	Committee member
Michael Loxham	Committee member
Nicholas Vouïte	Committee member
Peter Ward	Committee member
Didi Ajodhia	Secretariat

## New Fellows

### Mr L Wilson Berry Jr

Following several senior appointments within Texaco in the United States, Mr Berry moved to Brussels in 1986 as Vice-President and General Manager, Texaco Services (Europe) Ltd. Returning to New York in 1990, he served for two years as General Manager, M & M, for Texaco Europe, before transferring to London as Managing Director, Manufacturing and Marketing, Texaco Ltd, and Regional Director for the United Kingdom and Ireland. His responsibilities cover all manufacturing and marketing activities within Texaco Ltd, including refining, chemicals, oil trading, natural gas liquids and marine fuels, and for Texaco Ireland.

### Mr H Bandeira Vieira

Mr Bandeira Vieira holds the dual roles of Managing Director and Chief Executive of Fina plc and Fina Exploration Limited. During a long career with Fina, he served (1977-83) as Vice-President, Petrofina SA, President and Managing Director, Fina Petroleos de Angola and, from 1986 to 1992, as Executive Director, Petrofina SA. Mr Bandeira Vieira has a Mining Engineer's degree from the University of Lisbon,, an MSc in Petroleum Engineering from Stanford University and an MBA from Boston University.

### Mr D A Bennett

Following a Masters in Mathematics, Mr Bennett joined Texaco Inc, rising by 1987 to Division Vice President, E&P Technology, and by 1989 to Division Manager, Onshore Exploration USA. In 1990 Mr Bennett transferred to Texaco Ltd, as General Manager, Exploration and, most recently, as Managing Director, Exploration and Producing, where he is responsible for Texaco's upstream activities in the United Kingdom.

### Dr C Gibson-Smith

Dr Gibson-Smith joined BP following a Sloan Fellowship at Stanford University in Management Science and a Doctorate in Geology from Newcastle. He became President of BP Alaska Exploration in 1985, moving to BP Exploration in 1987 as Assistant General Manager, Corporate Planning. Two years later, he was appointed Deputy Chief Executive Officer – Europe, and after a year took on his current responsibilities as Chief Executive (Europe), BP Exploration.

### Mr D Deines

Mr Deines has a degree in Physics and Mathematics, and his varied career spans senior positions with Kaman Aircraft Corp, Hughes Aircraft Corp, Schlumberger Ltd, Pan Ocean Oil Corp and Marathon Oil Co. He joined Marathon in 1976 as Deputy General Manager –

## UK Deliveries into Consumption (tonnes)

Products	† May 1992	* May 1993	† Jan-May 1992	*Jan-May 1993	% change
Naphtha/LDF	262,563.0	188,234.0	1,434,480.0	1,239,780.0	-14
ATF – Kerosine	584,162.0	650,051.0	2,579,831.0	2,624,055.0	2
Motor Spirit	2,010,277.0	1,914,589.0	9,799,686.0	9,433,234.0	-4
of which unleaded	927,264.0	998,563.0	4,422,103.0	4,823,160.0	9
of which Super unleaded	117,244.0	117,173.0	552,295.0	580,847.0	5
Premium unleaded	810,020.0	881,390.0	3,869,808.0	4,242,313.0	10
Burning Oil	126,629.0	137,313.0	1,157,195.0	1,172,851.0	1
Derv Fuel	888,495.0	932,278.0	4,482,187.0	4,723,732.0	5
Gas/Diesel Oil	546,177.0	533,944.0	3,420,669.0	3,343,192.0	-2
Fuel Oil	774,526.0	811,227.0	4,908,082.0	4,423,882.0	-10
Lubricating Oil	59,560.0	59,021.0	313,714.0	314,682.0	0
Other Products	584,094.0	567,654.0	2,827,220.0	2,959,372.0	5
<b>Total above</b>	<b>5,836,483.0</b>	<b>5,794,311.0</b>	<b>30,923,064.0</b>	<b>30,234,780.0</b>	<b>-2</b>
Refinery Consumption	505,371.0	523,270.0	2,483,447.0	2,576,191.0	4
<b>Total all products</b>	<b>6,341,854.0</b>	<b>6,317,581.0</b>	<b>33,406,511.0</b>	<b>32,810,971.0</b>	<b>-2</b>

† Revised with adjustments \*Preliminary

# Institute News

Nigeria. After positions in Africa, the United Kingdom and Norway, in 1984 he was appointed Vice-President and Managing Director, Marathon Petroleum Ireland Ltd, where his responsibilities cover oil and gas exploration and production operations on and offshore. Mr Deines is a long-time supporter of the IP Irish Branch and its current Chairman.

## Mr P H Downs

Mr Downs has been an active Committee member of the IP London Branch since 1986, and chaired its Programme Sub-Committee for two years. Upon gaining a Dip Chem Eng from University College in 1970, he joined Shell UK. After a wide range of positions in refining and planning, he was appointed in 1988 to the position of Strategy Manager, Refining, where he was responsible for refining strategy development. Mr Downs served as Chairman of the UK Petroleum Industries Association Atmospheric Emissions Working Group for the last five years and has recently become an independent consultant.

## Mr D S Garwood

A long and varied career, both in the United Kingdom and overseas, has assisted Mr Garwood in gaining the in-depth experience necessary for his current responsibilities as Southern Area Manager, Inspectorate Ltd, Oil and Petrochemical Services division, where he is responsible for 25 cargo surveyors and analysts. Mr Garwood has been involved with the IP Essex Branch as Treasurer, Vice Chairman, Recruiting Officer and currently as Chairman and also represents the Branches Committee on the IP Council.

## New Members

Miss E Adams, Andersen Consulting, 2 Arundel Street, London, WC2R 3LT  
Mr F Ahmed, 4 Sovereign Close, Castle Bar Park, London, W5 1DE  
Mr W J Amos, Exxon Chemical Ltd, Oliver Road, West Thurrock, Grays, Essex, RM16 1RA  
Ms K C Baragona, Richards Butler, Beaufort House, 15 St Botolph Street, London, EC3A 7EE  
Mr J M Barclay, 1 Damfield Road, Fraserburgh, Aberdeenshire, AB43 5SJ  
Mr J Beattie, Graham Miller (Thailand) Ltd, 604-5 TDI Building, 42 Surawongse Road, Bangkok 10500 T  
Dr R M Bell, Environmental Advisory Unit Ltd, Yorkshire House, Chapel Street, Liverpool, L3 9AG  
Mr G Bird, 1 Park Close, Wickford, Essex, SS12 9EH  
Mr I S Bissett, I.S.Bissett Engineering Svcs Ltd, 1 Bucklerburn Drive, Peterculter, Aberdeen, AB1 0XJ  
Mr S T Bottomley, Concept Petroleum Consultants, 30 London Road, Hitchin, Herts, SG4 7NG  
Mr A L Bracey, Lanstar, Shelah Road, Halesowen, West Midlands, B63 3PN  
Mr J Camilleri, Just Jade, Mountbatten Street, Blata il-Bajda, HMR 02 Malta  
Mr A R Davidson, Nessco Ltd., Nessco House, Kirkhill Drive, Dyce, Aberdeen, AB2 0EU  
Mr R J Davies, Chemisol Ltd, Thornley Hse Carrington Bus Park, Carrington, Urmston, Manchester, M31 4DD  
Mr D Dellepiane, Corso Montecarlo 70/2, 18030 Ventimiglia (im), Italy  
Mr R S Dixon, Aviation Fuel Service Ltd., Calshot Way, Centre Area, Heathrow Airport, Hounslow, Middx, TW6 1PY  
Mr H Dodds, 32 Woolerton Drive, Dumpling Hall Estate, Newcastle-upon-Tyne, NE15 7RX  
Mr T D Evans, Oil Technics, Upper Mill, Inverbervie, Montrose, Angus, DD10 0SP  
Ms E K Farrington, Mars & Company, 12-18 Grosvenor Gardens, London, SW1W 0DH  
Mr C J R Faulkner, 14 The Coppins, Ampthill, Bedford, MK45 2JN  
Mr F M Felix, SONANGOL, Merevale House, Brompton Place, London,

## SW3 1QE

Mr P Fellows, Bredon Lodge, Cotswold Road, Oxford, OX2 9JG  
Mr I W Goldie, Slaughter & May, 35 Basinghall Street, London, EC2V 5DB  
Mr P W Greenaway, 12 Elyne Road, London, N4 4RA  
Ms S M Green, National Remote Sensing Centre, Delta Hse, Southwood Crescent, Southwood, Farnborough, Hants, GU14 0NL  
Mr T Hammond, Christiania Bank, 1 Portsoken St., Lloyds Chambers, London, E1 8RU  
Mr D R Haywood, 35 Balmoral Road, St Andrews, Bristol, BS7 9AX  
Mr J Isaacs, The Beeches, Whitegate, Northwich, Cheshire, CW8 2BL  
Mr A D Jarmine, 17 Heathfield Close, Godalming, Surrey, GU7 1SL  
Mr A G Joy, 370 Lordswood Lane, Chatham, Kent, ME5 8JS  
Mr A S Karim, 34 Wimborne Road, Southend-on-Sea, Essex, SS2 5JF  
Mr A D Lee, 35 Albert Den, Albert Place, Aberdeen, AB2 4YX  
Major J M Leeming, 5 Steepe Way, Burbage, Marlborough, Wilts, SN8 3BX  
Mr R Marsden, 13 St John's Road, Westcott, Dorking, Surrey, RH4 3PN  
Mr J W McHardy, Pump Care Ltd., Castle Road, Ellon, Aberdeen, AB41 9RF  
Mr A Meinhard, NOWSCO Well Service GmbH, Rudolf-Diesel Str.27, D-49363 Vechta, Germany  
Mr D Murray, Graig Group, International Mooring Services, Silverburn Crescent, Bridge of Don, Aberdeen, AB23 8EW  
Mr K M O'Dea, 5 Oakleigh Court, Malahide, County Dublin, Ireland  
Mr J S Oliver, 22 Colthill Road, Milltimber, Aberdeen, AB1 0EF  
Mr K Peacock, International Bechtel Inc, PO Box 2661, Abu Dhabi, United Arab Emirates  
Mr M J Richards, Mars & Co, 12-18 Grosvenor Gardens, London, SW1W 0DH  
Mr M Robinson, 13 Gubyon Avenue, Herne Hill, London, SE24 0DU  
Mr R Ronayne, Aviation Fuel, Services Ltd., Calshot Way, Central Area, Heathrow Airport, Hounslow, Middx, TW6 1PY  
Dr R Scott, Staddlestone, The Paddock, Allbrook, Hants, SO5 4SD  
Mr T D Smith, NESSCO Ltd., Nessco House, Kirkhill Drive, Dyce, Aberdeen, AB2 0EU  
Mrs S Thompson, The Poplars, Swinthorpe, Lincoln, LN3 5AR  
Mr J C Thomson, Oceanroutes (UK) Ltd, Swire Hse, Souter Head Road, Altens, Aberdeen, AB1 4LF  
Mr C G Turner, Whessoe Varec Ltd, Heighington Lane, Newton Aycliffe, Co. Durham, DL5 6XZ  
Mr R K Turner, Penspen Ltd, Darpen House, Citadel Place, Tinworth Street, London, SE11 5EH  
Mr H Watkins, SGS Inspection Services (SA) Ltd, P O Box 12993, Dubai, United Arab Emirates  
Mr N Watson, AMEC Process & Energy Int. Ltd, Centurion Hse, Hadrian Road, Wallsend, Tyne & Wear, NE28 6HD  
Mr J J Watts, 18 Hayesford Park Drive, Bromley, Kent, BR2 9DB  
Mr J R Wood, 5 Manor Park, Nether Heyford, Northampton, NN7 3NN  
Mr J Worrell, Fluid Data Ltd, 20 Bourne Ind Park, Bourne Road, Crayford, Kent, DA1 4BZ

## Students

Mr M F Adjei, 25 Shelley House, Milton Garden Estate, Shakespeare Walk London N16 8TJ  
Mr N M Arijio A-28 Baldia Coloney Hyderabad Sind Pakistan  
Mr J L Forbes 38 Fullwell Road Bozeat Wellingborough Northants NN9 7LY

## Student Prize Winner

Mr R Griffin Dept of Geological Sciences University of Durham Science Labs., South Road Durham DH1 3LE

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**The Institute of Petroleum**

**THE FIFTH OIL MEASUREMENT CONFERENCE  
New Developments in Tank  
Calibration & Meter Proving**

**Thursday 4 November 1993  
To be held at The Institute of Petroleum**

Attention is increasingly focused on quality management and measurement accuracy in the drive to reduce oil loss and increase operating efficiency. It is therefore an appropriate time to hold a conference to review tank calibration and meter proving. Accurate tank calibration is a pre-requisite for the accuracy of all methods of tank gauging, including automatic tank gauging systems, while traceability in meter proving is fundamental to the relationship between readings obtained in proving and International standards of measurement.

This one day conference is divided into two sessions, with an introductory paper by the National Engineering Laboratory on measurement traceability.

**Topics to be presented include:**

- Measurement traceability from international standards of mass and length through to field equipment
- Review of tank calibration techniques, including new technologies and a comparison of the accuracy and cost of various methods, plus new moves to standardise tank recalibration frequency
- Latest developments in tank calibration, especially electro-optical methods and their various applications
- A tank operator's perspective of what is sought in tank calibration and calibration services
- Analysis of large data base of offshore and jetty meter provings and the lessons to be learned
- The role of a Weights and Measures Laboratory in meter calibration
- Norwegian methods of the calibration of small volume provers
- Central proving – used in many countries; why not in the United Kingdom?

*For further information, and a copy of the registration form which will be available shortly, please contact  
Caroline Little, The Institute of Petroleum,  
61 New Cavendish Street, London W1M 8AR, UK.  
Telephone: 071 636 1004. Telex: 264380. Fax: 071 255 1472.*



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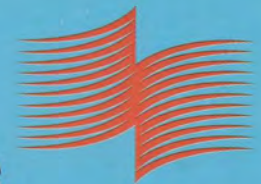
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