PETROLEUM REVIEW

IP THE INSTITUTE OF PETROLEUM

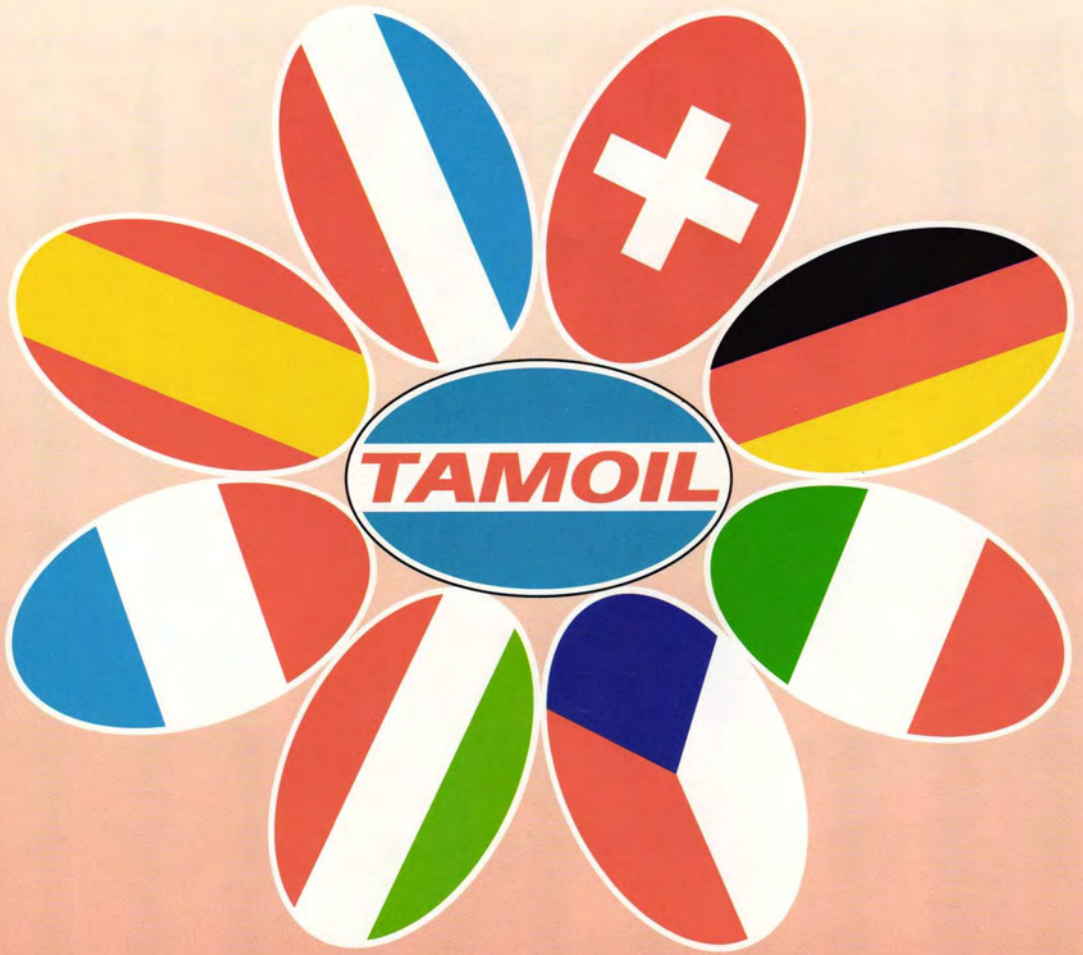
June 1994

Europe
An assessment of recent forecourt marketing strategies

Spain
Steady march towards greater liberalisation

Survey
A survey of information technology

OTC
The Offshore Technology Conference reflects an optimistic industry



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Screen image of CADCentre's REVIEW

NEWS IN BRIEF

22 April

The UK government has blocked an energy conservation bill designed to improve energy efficiency in the home. The bill's sponsor, Liberal Democrat Alan Beith, accused junior environment minister Tony Baldry of sabotaging the bill by tabling dozens of amendments and making long-winded speeches.

25 April

Western Geophysical has been awarded a licence for a two-phase seismic survey on the Faroese Continental Shelf.

The world's largest pre-stressed barge is to be built at Marseilles. Weighing 107,000 tonnes, the barge will be the production and control centre for Elf Congo's N'Kossa offshore field.

26 April

For the first year ever, US oil imports will account for more than half the country's consumption, according to the Independent Petroleum Association of America (IPAA).

27 April

Mr Valery Remizov, deputy chairman of Gazprom, has confirmed that up to 10 percent of the company's shares will be up for offer once the next stage of its privatisation programme is complete.

Argentina and the UK are to hold talks in July over joint exploration around the Falkland Islands. Previous discussions two years ago broke up over the demarcation line between Falkland Island and Argentinian waters.

28 April

Lasmo has spurned a £1.5bn hostile bid by rival Enterprise Oil which, if successful, would create an independent oil and gas group worth over £3bn. Lasmo claimed the offer 'totally failed to recognise the value of the company'.

BP has been given 'Annex B' consent for phase one development of the Machar field, in block 23/26a of the northern North Sea.

29 April

US Secretary of State, Warren Christopher, has warned the international community not to loosen oil sanctions against Baghdad. 'The stakes are too high to give Mr Hussein the benefit of the doubt,' he told the *New York Times*.

1 May

Exploration and appraisal on the UK Continental Shelf fell 48 percent in the first quarter of 1994, according to Arthur Andersen.

2 May

Unleaded petrol now accounts for over half the total volume of petrol sold in Britain, according to the European Union.

The four energy capitals of Aberdeen, Houston, Stavanger and Perth have pledged to create a superleague of worldwide oil capitals. Meeting in Houston, they agreed to launch the initiative in August.

3 May

Broken Hill Pty has pledged to 'defend vigorously' a A$4bn legal claim for environmental damage from 6,000 Papua New Guineans. The villagers claim the energy and mining group caused pollution and flooding around the Ok Tedi copper and gold mine.

Aker and its subsidiary, Norwegian Contractors, have refused to enter negotiations with insurance companies over the loss in 1991 of the Sleipner East gravity base structure.

Qatar has clinched two LNG contracts to supply Japan and South Korea, according to the *Middle East Economic Survey*.

Despite claims by Norway that there is no deadlock over the Frigg Treaty negotiations, UK energy minister Tim Eggar has warned that talks are unlikely to re-open in the near future.

4 May

Beijing has confirmed plans to impose a price cap on mounting gasoline and diesel prices.

OPEC forecasts that oil prices will reach $24 per barrel in the year 2000 and $34 per barrel by 2020, according to Dr Subroto. The drop reflects pressure from Saudi Arabia to adhere more strictly to quotas.

5 May

Several leading US oil industry associations have attacked President Clinton's plans to increase insurance cover for oil companies. Mr James Day, Chairman of the National Ocean Industries Association, warned that current proposals to increase liability cover to $150m for each installation could push many producers out of business.

The Ekofisk field was temporarily shut down after Norway's largest offshore union, the OFS, staged a four-hour strike. The action was in protest at a change in government policy, allegedly allowing oil companies to increase their percentage of non-union labour.

6 May

June futures for Brent blend reached $16.20, largely as a result of fears that civil war in Yemen might cut off the country's exports.

8 May

Chevron has signed a study agreement with Maraven, a subsidiary of PdVSA, to evaluate the feasibility of a joint venture in the Boscan oilfield.

9 May

Price Waterhouse has set up a new Asia-Pacific energy centre in Hong Kong to serve the international petroleum and power industries.

OPEC output fell sharply by 350,000 barrels a day to 24.64 million barrels, according to the *Middle East Economic Survey*.

Chevron is planning to cut back on investment in the Tengiz project in Kazakhstan.

10 May

Iraq has agreed to repay a $1.5bn debt to Bulgaria once the UN embargo is lifted. Run up during the Iran/Iraq war, the debt will largely be paid back in oil supplies.

Aker has established a new firm which aims to help cut development and operating costs in the North Sea. Aker Offshore Partner will have a staff of around 1,400.

11 May

Hardy Oil & Gas has announced a natural gas discovery in the Offshore Federal Waters of the Gulf of Mexico, 150 miles southeast of Texas.

Two Florida congressmen have filed a Bill banning all oil and gas activities along the states's Outer Continental Shelf until at least the year 2002.

12 May

Mobil has swapped a 25.5 percent interest in licence P449 in the UK North Sea in exchange for Arco's 55 percent interest in a horizontal cross section of block 49/29c, part of licence P702.

The Spratly Islands' oil contract between Mobil and Vietnam violates China's sovereignty in the South China Sea, according to Beijing. The foreign ministry claims the deal will involve Mobil encroaching into Chinese waters adjacent to the islands but pledges to settle the dispute by peaceful means.

Repsol has signed a $27m, seven year deal with Sonatrach, allowing the Spanish company to carry out exploration in the Zirara block in Algeria.

13 May

Lasmo has unveiled its formal defence paper against Enterprise Oil's takeover bid. The document concentrates on the company's new management team and investment plans and claims the Enterprise offer treats Lasmo shareholders as 'second class citizens with reduced dividend entitlements'.

Esso oil is soon to be available in India after an absence of 18 years, following the signing of a blending and marketing agreement with Hindustan Petroleum.

ARCO has confirmed losses of $22m after investing in the derivatives market in April.

16 May

The war of words over the hostile Lasmo bid continued with a second document from Enterprise. Chairman Graham Hearne said Lasmo was unable to 'understand what it takes to build an E&P business with genuine long-term growth prospects'.

Elf ordered to improve safety on Piper Bravo

Elf Enterprise could face prosecution following the Health and Safety Executive's (HSE) decision to pass on details of an investigation into a gas release on Piper Bravo to the Procurator's Office.

The incident, which took place in February, was the first of three on the showpiece platform in just four months. In March, a small fire broke out while oil was being drained from a valve and last month 98 non-essential personnel were evacuated from the rig after a minor explosion within the flare stack.

As *Petroleum Review* went to press, investigations into the other two incidents were still ongoing. However, an HSE spokesman said the Procurator Fiscal had been kept informed of all three cases throughout.

HSE has also served Elf, as operator of the platform, with an Improvement Notice which covers all three incidents and which requires the implementation of a 'structured system for hazard identification, assessment and control of risks'. Improvement Notices require employers to take remedial action on specific matters within a specified time limit and contravention of the requirements is an offence under the Health and Safety at Work Act.

An Elf spokesman said the company had appointed senior engineers and safety specialists to ensure 'full and prompt compliance with the requirements of the Notice'.

The frequency of incidents in recent months on such a politically-sensitive rig has prompted an outcry from unions officials.

Mr Roger Spiller, head of the Manufacturing, Science and Finance Union's offshore section, urged the HSE to set up an inquiry into gas leaks in the North Sea as a whole.

However, an HSE spokesman said this was already underway. 'We have established a database specifically on gas releases and we have had very good co-operation from all the operators. Unfortunately, it is too early as yet to extract any meaningful information from the data.'

Piper Bravo incorporates many state-of-the-art safety features, including freefall lifeboats and computer monitoring, and there has been some suggestion that the recent incidents might simply be a reflection of highly sensitive gas detection technology. However, HSE has largely discounted this. 'We're looking into it,' said a spokesman, 'but we don't think it has a bearing on these cases.'

As *Petroleum Review* went to press, production on both the Piper Bravo and the nearby Saltire platform was still suspended following the latest incident on 2 May. Restoring normal operations was expected to take until the end of May and full compliance with the Improvement Notice could extend the shutdown into June. Prior to the incident, the combined daily rate of production was 114,000 b/d.

Piper Bravo evacuated after explosions within the flare stack

Shell complaint over Texaco ad

Shell has lodged a formal complaint against Texaco's multi-million pound advertising campaign for New CleanSystem3, but not in time to affect the first phase of ads.

The Broadcast Advertising Clearance Centre (BACC) has requested that Texaco clarify and re-submit evidence to back its claim that CleanSystem3 cleans not just intake valves and fuel injectors but actually reaches inside the combustion chamber, the very heart of the engine. This, claims Texaco, can help both new and older cars achieve greater economy and performance, whilst lowering emissions. However, according to Shell, there is no industry-recognised test for measuring combustion deposits.

When *Petroleum Review* went to press there had been no ruling by the BACC and a spokesman for Texaco said the campaign would be unaffected.

'The first phase of advertising has now run its course. There will be more advertisements later in the year but they will be of a different nature.

'We showed reams of evidence to the BACC initially and they cleared it then,' he added. 'Now they want to look at it again but no date has been set.'

According to Advertising Manager Richard Little, exhaustive tests have been carried out by Texaco in its own laboratories in the United States and Europe, and by Ricardo, the leading independent UK automotive consulting engineers. 'They all found that the performance of this revolutionary new fuel fulfils all the claims made of it.'

Benzene risk at filling stations?

Air pollution monitoring around filling stations carried out by Friends of the Earth has revealed benzene levels of up to 19 parts per billion (ppb).

The tests indicate that the five ppb standard for benzene in air as a running annual average, as proposed by the government's Expert Panel on Air Quality Standards, is widely exceeded in areas close to petrol filling stations, said the pressure group.

'Air samples taken by us from locations near petrol stations were on average some one and a half times higher than busy roadside locations and were in the range 2ppb-19ppb,' said a spokeswoman.

Malcolm Watson of the UK Petroleum Industry Association (UKPIA) said the 5ppb standard was an annual average, whereas Friends of the Earth had monitored during rush-hour traffic. 'These figures may indicate a problem or they may not, but we are genuinely interested in their findings,' he added.

Wytch Farm breaks drilling record

BP has broken another world record in extended reach drilling at Wytch Farm in Dorset.

Its fourth extended reach well has reached out 11,225 feet using the same 12¼ polycrystalline diamond compact (PDC) drill bit at an average angle of around 82° from vertical.

This is the last well to be drilled from the existing wellsite on Goathorn peninsula. A further seven or so wells are to be drilled from a new site, some of which are targetted to reach a horizontal step-out in excess of six kms.

NEWSDESK

Retailers claim victory over oil and shop sales

The Petrol Retailers' Association (PRA) claims it has thwarted the government's attempts to allow oil companies greater powers over the type of goods sold on forecourts.

According to the PRA, the government's decision to release the petrol wholesalers from some of the undertakings, which have governed their relationship with the retailers since 1966 and which reined in their powers over oil and shop sales, runs directly counter to European legislation.

The PRA has been protesting strongly against the changes since January's announcement but now it claims a letter from the Office of Fair Trading has backed its case.

According to the letter, the 'theoretical freedom given to the wholesalers by the revisions made are curtailed by the applicability of European law.

'As EC law takes precedence over domestic law, the provisions of Part II and Part III (of the undertakings), in practical terms, are still in effect.'

The letter concludes that licensees will continue to have the ability to choose their own supplier, at least until the EC regulations are reviewed in 1997.

'We are now preparing for the 1997 review', said the PRA, 'as, quite clearly, some oil companies will continue to press for restrictions.'

A spokesman for the Department of Trade and Industry said that the decision to revise the 1966 undertakings was in response to a recommendation by the Monopolies and Mergers Commission. 'We were therefore duty-bound to carry out a review and to release the oil companies from the undertakings where adverse effects no longer existed.'

The spokesman added that keeping within EC parameters was a matter for the oil companies, not the government.

'We've released them in terms of national competition – it's now up to the legal departments of the oil companies to determine for themselves whether they are in contravention of any EC laws.'

Gas independents fear government back-off over competition

Independent gas suppliers fear the UK government may be backing off from the 1996 deadline for opening up the domestic market to competition.

'We're concerned that the Department of Trade and Industry has lost its commitment', Mr John Astrop, Commercial Director at Kinetica, told *Petroleum Review*. 'There have been a lot of evasive comments lately.'

Some industry sources have suggested that the government is considering delaying beyond the next election for fear that a liberalised gas market, with the consequent removal of a cross-subsidised universal tariff, will provoke a further scare amongst voters over rising fuel prices.

The late publication of a joint DTI/Ofgas consultative paper, which gives details of how competition will work in the domestic gas market, has done little to allay concern amongst the independent suppliers. Due to be published in February, the document finally materialised last month after Ofgas director general Clare Spottiswoode threatened to rewrite it herself and send it out without governmental approval. Perhaps more significantly, it was published immediately after the May local elections were over.

Now the concern is that the document is too sketchy. 'An awful lot of detail has now to be put into the Parliamentary debate if this Bill is to be drafted in time', said one independent.

However, others are simply relieved that it is finally out. 'The publication confirms that the authors are serious about April 1996,' said Mr Martin Fleming, managing director of Caledonian Gas. 'I'm relatively happy that it has touched upon most if not all of the relevant issues – as a consultative paper, it can't be too detailed.'

The independents now await a second vital document, due to be published this month by Ofgas, which will set out the framework for a transportation price control formula. It is this paper, they say, which will really determine the price of ga s to the domestic consumer in the liberalised market.

Air service planned for the CIS

French independent airline, Euralair, is poised to launch a regular passenger and cargo service serving the CIS oilfields of the Caspian and Aral Seas using a Boeing 737-200 QC aircraft.

'This type of aircraft is ideal for the movement of oil and gas technicians as well as their equipment and supplies. The change to 'combi' configuration can be done within an hour of departure,' said Euralair's cargo director, Christophe Decre. 'The most popular mix, I think, will be a four pallet load and 34 passengers, although other combinations are possible.'

Given the dominant American presence in the oil industry, Mr Decre expects most of the traffic for the service (to be named CIS Combi Express) to be generated from the United States.

'Our plan is to appoint a specialised broker at JFK airport in New York where cargo would be grouped before being booked on B747 passenger flights for shipment into the Paris airports of Roissy-CDG and Orly.'

Personnel would fly into Paris from the States too and then take a short shuttle trip to Euralair's hub at Le Bourget, the smallest of Paris's three main airports.

The service is due to begin in the Autumn, initially on a weekly basis before moving to a daily frequency.

IP President Charles Smith receiving his CBE with wife Isobel

The Falklands – the next North Sea?

By Graham Bound, Falkland Island Government and
Kevin Murphy, Consultant, Environmental Resources Management

Initial surveys indicate that there may be significant oil and gas reserves off the Falkland Islands. The Falkland Islands government commissioned international consultants ERM (Environmental Resources Management) to look at the potential impact of a discovery on the islanders and their environment. This article outlines the background to the study and some of the main issues raised.

For as long as most Falkland Islanders can remember, their belief in the existence of oil beneath or around those South Atlantic Islands has been a virtual article of faith. There may have been scant geological evidence but the conviction was nurtured by off-the-cuff remarks by 'politicians'; broad comparisons with the oil-bearing coastline of nearby South America and conspiratorial whisperings about the 'real' reason why Britain was prepared to defend the island. It was a comforting, if vague, possibility for the future but, until very recently, no more than that.

Oil dream

In the late 1980s the politics and economics of the region began to form an environment in which, amazingly to some this tiny community could think realistically about making its dream of oil-fuelled security a reality. Of primary importance was management of the political dispute. While all sides, Britain, Argentina and the Falklands, stood rigidly by their traditional arguments and familiar rhetoric was sometimes uttered for public consumption, a more pragmatic approach to matters of mutual interest gradually took over. British investment in the Argentine government's galloping privatisation programme was welcomed by both sides and agreements were forged between the Falklands government and the Argentines over management of the area's valuable fish stocks. There are now routine meetings to discuss such issues as well as direct communications on practical matters like air-sea rescue in the area, joint fishery research cruises, mutual notification of military exercises and humanitarian gestures towards the families of those who died in the war.

Britain's declaration of a fisheries conservation zone around the Islands in 1985 enabled islanders to harness the economic power of the fishing industry which, in the space of two years, increased the government's revenue from some £14 million to £40 million annually. There was no more need for British aid after 1992; infrastructural developments such as roads, schools, port facilities and communications were then willingly funded by the islanders themselves. These projects, with the international airport built by Britain in 1984, brought the Island into the 1990s. There was now a mood of confidence and determination to control the future, a mood which is now exemplified in the search for oil.

Young elephant seal

With the possibility of deposits onshore having been largely ruled out through basic geological work, the quest for petroleum deposits offshore began in November 1991 when the Falklands Government (FIG) issued a proclamation establishing authority over the surrounding continental shelf. The resulting exploration zone covers an irregular area, and allows for median lines between Argentine and Falklands territory. However at some points the zone extends to 200 miles from the centre of the archipelago.

Having previously appointed the British Geological Survey (BGS) as consultants, with their guidance FIG went quickly on to license preliminary seismic survey work. Geco-Prakla (UK) Ltd, a division of the Schlumberger group, and Spectrum Energy and Information Technology Ltd, commenced work in roughly equal areas to the north and south of the Islands in early 1993. With the preliminary information now analysed and described generally as encouraging, the companies are marketing the data. Early indications are that there is substantial interest.

Licensing round soon

In close consultation with the British government, FIG is drafting the legislative framework which must be in place before licences are granted for detailed exploration and drilling. This is expected to be completed within a few months and FIG will then invite bidding for exclusive exploration licences. These should be awarded during 1995. The initial exploration will allow for detailed seismic work without imposing a drilling commitment.

Comparisons with the North Sea have been frequent. The BGS notes that the basic geology of the region is similar. The maritime environment is comparable with that found west of

Stanley seafront

Shetland. They point out, however, that the area available for exploration is some 50 percent larger than the British sector of the North Sea. The BGS simple prognosis is for 'potentially huge reserves, given the size of the area and the nature of the geology'.

Within the islands there is a general willingness to grasp the opportunities which may be offered. In April 1994 a delegation from the Falklands Chamber of Commerce visited Scotland to study the business opportunities which North Sea oil has brought to the communities there. The group's leader, David Hall who is a director of an inter-island shipping company in Stanley, said he was confident that the islanders had a lot to offer, and that their involvement in ancillary services would help to control the industry. 'By maximising local involvement, we are more likely to get the social and environmental aspects right, whereas by keeping the industry completely offshore or based somewhere else, the risks to us would be increased.'

Is oil worth the price?

Nevertheless, significant worries are being expressed among islanders. What effect might there be on the area's wildlife and habitat? During the southern spring and summer (from September through March) the Falklands are one of the most important breeding sites in the southern hemisphere for millions of penguins, albatross, elephant seals and sea lions. The rugged coasts are a year-around home to indigenous species of duck, geese, wading birds and scavengers. Images of the *Exxon Valdez* and *Braer* disasters are vivid and frightening to people who value the natural beauty of their home.

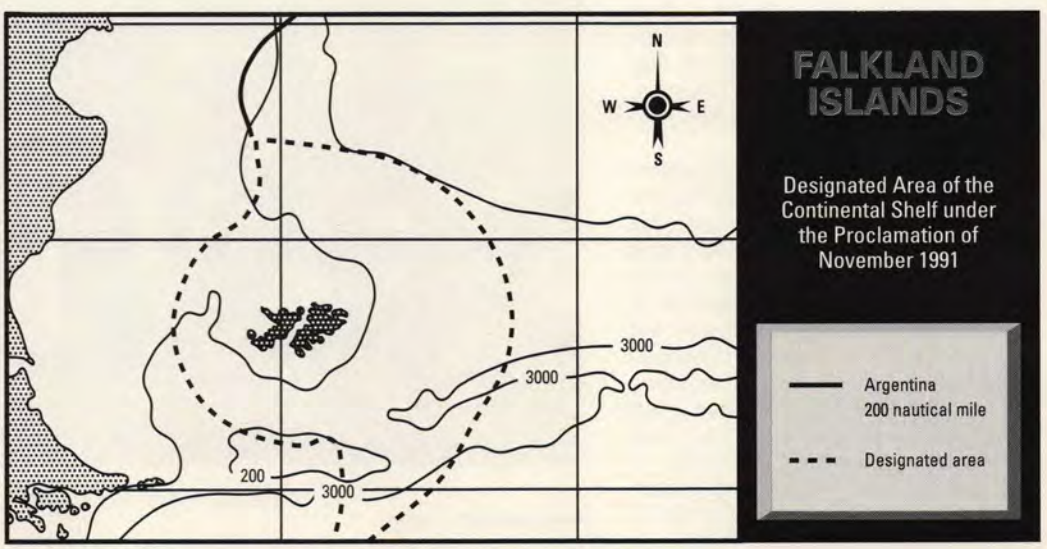
Culturally, there is also a risk. The tiny community of 2,150 souls, mainly concentrated in Stanley but also living solitary lives on sheep farms, is delicate and their economy fragile. Political uncertainty and economic stagnation have caused de-population in the past. An oil industry living cheek by jowl with the traditional community could again drive islanders away or change them utterly. Is oil worth the price?

The questions are now being tackled by a team of consultants from Environmental Resources Management (ERM) which also carried out studies associated with the island's fishing industry in the late 1980s. ERM has been briefed to identify the threat and propose strategies to develop the industry with minimum impact. Its report is currently in the hands of FIG.

The starting-point was to talk to oil companies for whom both issues have become familiar territory over the years. Those approached have experience of operating in some of the world's least hospitable locations; regions where the logistics of exploration and production can only be approached through the most carefully managed operations. All saw the Falklands as a feasible proposition and were prepared to outline their approach to such matters as transport, construction, support facilities and environmental protection. This helped in estimating a range of levels of interaction which might occur between the industry and the islands.

At the exploration stage, for example, virtually all activities might be carried out offshore with support from the South American mainland and the islands only used for minimal office and warehouse facilities and as a change-over point for personnel being helicoptered to and from the rigs for connecting charter flights. At the other extreme there might eventually be a range of support facilities based on the islands, including loading quays, upgraded port facilities and offices. The same is true of production where the scenarios range from all loading being carried out offshore and/or piped to the South American mainland to a significant Falklands-based operation, complete with pipelines, a tanker-loading terminal and all the associated support and maintenance staff.

Much, of course, would depend on the positioning of licensed exploration blocks around the islands as well as the timing of the different licensing rounds and the size of the resource. A block to the west of the islands could easily be serviced from the South American mainland but this would be a far more difficult proposition if it were anywhere to the north and east. The gap between



West Falkland coastal view

licensing rounds would itself affect the rate of development and the speed at which the Falklands island community became acclimatised to it.

Industry would expect to minimise its impact on the natural environment by developing appropriate environmental protection measures, whatever its involvement with the islands. In this respect, all international oil companies now operate some form of environmental policy and management system, the quality of which can be among determining factors in winning the licence for a block. This will be the case if bidding goes ahead in the South Atlantic.

Nature conservation

To this end oil companies have in principle been willing to support a wide variety of nature conservation projects and Falkland Conservation (vice president Sir David Attenborough), the body responsible for nature conservation on the islands, has a number in progress. It is already known that the islands contain wetlands of international importance – as designated under the Ramsar Convention – while birdlife, seabed surveys and terrestrial ecology studies are among a whole range of conservation projects which have been earmarked for attention.

As part of its review of environmental legislation in relation to nature conservation on the Falklands, the ERM report found a need for new laws to protect sites and species at the planning and operational stages of oil industry activities. Ideally this would cover not only onshore and coastal areas but also the waters surrounding the islands where there are numerous species of marine mammals and birds (including, of course, the penguins). In fact, the early designation and protection of sites would probably help oil companies in the long-term planning of their activities.

As well as taking account of environmental sensitivities, any plans for oil industry activities in the region would also have to specify the use of sophisticated pollution control technologies as well as equipment and practices to minimise chronic spillages and avoid the risk of catastrophe.

The report discusses such techniques as Submerged Turret Loading, developed by Statoil for year-round use in the harshest North Sea weather conditions, and floating production units which use a semi-submersible production system to offload directly into tankers. The use of double-hulled tankers and the routing of ships away from sensitive areas would also help to minimise the likelihood of any spill, while operators would be expected to provide adequate oil spill response equipment and personnel to deal with an incident from the islands.

The potential interaction between oil industry personnel, equipment and resources and Falkland islanders was a prime focus of the study. What would be the socio-economic impact on the tiny human community? Even the smallest influx of equipment, transport and personnel could bring about a change in the way of life of the islanders and the heavier intervention scenarios would almost certainly destroy it. A similar question faced the authorities over the construction of the 2,000 strong Mount Pleasant military base after the Falklands War. The result on that occasion was a decision to keep the two settlements largely independent of each other in order to maintain the existing balance of island life.

Because of the nature of their exploration work, oil companies now have considerable experience in dealing with fragile communities such as the Falklands. They are aware of the need to strike a balance between the sensitivity of local communities and the potential for individual enterprise. They will often support community projects as much as local commerce, investing in schools, hospitals and infrastructure development.

In all of this, there is a sense of urgency. Pieces are falling into place quickly. The FIG, in an effort to assess local feeling on the issue, has stimulated discussion by pointing out that the oil industry develops the momentum of its own very quickly and controls have to be put in place at any early stage. Emphasising the urgency, another delegate in the recent fact-finding tour to Scotland, Terry Betts, remarked, 'We are looking at when, not so much if'.

King penguins colony

Photographs by G L Bound

OTC reflects a pensive but optimistic industry

By Philip Algar

The Offshore Technology Conference, held in May of each year, at the Astrodome complex in Houston, Texas, provides an accurate reflection of the size and mood of the international upstream oil and gas industry. In 1982, when the event attracted a record 108,000 visitors and 2,500 exhibiting companies, occupying 631,000 square feet, the mood was one of ill-informed optimism. In the late 1970s when the industry was even more buoyant, the emphasis was on fun, rather than hard selling. Prices and demand would rise, obligingly, on a regular basis, and, doubtless, supply would always meet burgeoning demand. Booths, or stands, sought to attract attention by mounting displays which owed more to show business than commercial marketing: concentrating on how to improve profitability was unnecessary.

Offshore Technology Conference

Now, obviously, all is different and the attitude is patently more sober, with significantly less being spent on corporate hospitality. Any demonstration of excess could create the wrong impression, especially when governments around the world are being lobbied strongly for less demanding terms as crude oil prices languish at five-year real lows or worse.

The 1994 show, just finished, drew 32,908 registrants, virtually the same as in 1993, 1,320 exhibitors from 26 countries, (1,254 last year) who occupied 234,000 square feet, just one percent more than in 1993. Well over one million people, from over 100 countries, have attended OTC, since it was inaugurated in 1969. The number of exhibitors this year was the highest since 1985, when the total was 1,725. The record number, of 2,500, was reached in both 1982 and 1983.

As some service companies realise that overseas expansion is an agreeable alternative to stagnant or declining sales in maturing home markets, the conference and exhibition reflected this increasing awareness of the need to move to new geographical markets. Many companies were making their Houston debut; the need to look overseas had motivated some of the British companies, according to Alan Campbell, of the Grampian Regional Council.

Key themes

In recent years, the global industry has shrunk and gained a degree of gravitas that was once lacking. The emphasis on minimising costs was reflected not only, for example, in the papers presented at the conference but also in the nature of exhibits shown. Some large groups did display new and expensive equipment but many other companies opted for lighter-weight or smaller exhibits or even just posters. Relatively few companies had expensive up-market colour brochures available, preferring simple, inexpensive leaflets.

Safety was another of the key themes dominating both the exhibition and conference, especially for some UK companies, which exhibited individually and on collective stands organised by, inter alia, the Association of British Offshore Industries, ABOI and Grampian Regional Council. Products and services shown by UK companies included explosion-proof lighting and electric motors, fire protection for valves and controls, computer-scheduled maintenance procedures for rigs, diverless connection of subsea pipelines and an escape system for the rapid evacuation of personnel from an offshore rig or platform.

Dr Subroto, Secretary General of OPEC views an exhibition

An information booth was also operated by the Energy Industries Council, the United Kingdom's largest trade association of suppliers of capital equipment and services to the worldwide energy sector. It represents 260 members. Random conversations with many of the British companies revealed that they were pleased with both the quantity and quality of the visitors and John D'Ancona, outgoing Director General of the Offshore Supplies Office, said that a number of overseas delegations had either visited the group's booth or had discussions with UK officials.

In the early days of the North Sea industry, a major exhibition inspired one supply company to trumpet that it had just signed a contract with an unnamed offshore group to provide the latter with an unspecified number of pairs of safety boots. Conferences and exhibitions are still seen as a useful venue to announce new developments or contracts. At OTC this year, for example, a visibly underwhelmed press conference witnessed the ratification of an important agreement between the state oil company of Azerbaijan, SOCAR, and McDermott International for joint ventures to seek marine and onshore construction and shipyard work in the Caspian Sea region. The agreement had been signed in early April in Baku.

At another press conference, the Western Australian government announced new foreign investment incentive plans, to persuade national and international companies to locate their Asian regional headquarters in western Australia. The engaging and out-going Secretary General of OPEC, Dr. Subroto, asked by one journalist what he had done for the organisation, grinning, replied that he hoped that he had given it a kindly and friendly face.

OTC always attracts international delegations, official and unofficial and the 1994 event saw officials from, for example, Australia, Azerbaijan, Brazil, China, France, Malaysia, Netherlands, Norway and Venezuela. As usual, countries took space collectively, and, alongside OTC 'veterans' such as the United Kingdom and Norway, Australia was represented for the first time at the show.

Presentations

Delegates had the opportunity of attending some of the 237 papers delivered in 48 sessions, over four days. Topics included instrumentation and control systems, deepwater pipelines and connections, Alba field development, ocean drilling and petroleum geoscience, environmental compliance, economic development of satellite or marginal fields, corrosion and materials and field decommissioning. A series of lunch meetings, awards ceremonies and, for the media, some 15 press conferences, also provided opportunities to discover current thinking on a range of topics stretching from abstruse technology to government relations.

The number and diversity of topics addressed at the conference prevents any overall summary, not least as many of the papers, which discussed technology of immediate and direct application to actual field situations, were highly technical. However, like the exhibition, many concentrated on cost-saving, or improved efficiency, and safety and environmental issues. One overall general impression was that the industry was moderately confident of meeting the new twin challenges of depressed low prices, widely expected to persist, and the successful introduction of both new technology and improved efficiency.

There were also gloomy moments, with some speakers citing the apparent failure of some governments, not least that of the United States, to recognise the problems that the sector and the American people face and to make some concessions. For example, Larry Strahan, of People for an Energy Policy, in an emotional presentation, claimed that Saudi Arabia was 'flooding our country with cheap oil' and OPEC was 'involved in predatory pricing to destroy our ability to produce domestic oil and gas'.

The need for a collective domestic industry approach to the US govern-

ment, for assistance, was also stressed by leading figures from the independent sector, including Robert Anderson of Hondo Oil & Gas and Robert Allison Jr., of Anadarko Petroleum Corp. Mr Anderson complained that large areas were outlawed for drilling, 'because of the sand lizard'. The industry had failed to put its case to the country and one reason was that it had never really defined 'who we are'. 'Spurious environmental reasons' had prevented the US industry from exploring some key offshore areas and the Arctic National Wildlife Refuge and 'that was nuts', according to Mr Allison.

Victor Beghini, President of Marathon Oil, having observed that 'We're not sure if we want a viable energy industry in this country', then praised the UK government for devising a tax regime which maximised the contribution of the industry to the benefit of the total national economy. The consensus view, however, was that whilst lobbying had to continue, there was no combination of internal circumstances that would lead to a fundamental shift in US energy policy.

The chairman of the International Association of Drilling Contractors, Robert Rose, complained that new proposals for the Gulf of Mexico, involving the Environmental Protection Agency, represent 'costly legislation that will fetter exploration and production without producing real benefits'. The initiative was a solution to a problem that did not exist. Other speakers bemoaned the apparent power wielded by environmentalists and called for more sober reactions to perceived problems, including the increased use of cost-benefit studies.

The potential in the mature Gulf of Mexico, allied with the application of new seismic techniques, to look below the salt structures, exercised many speakers and was a frequent topic of informal conversation. Baker Hughes had claimed that the Gulf was now the 'hottest offshore market in the world'. There are 36,000 square miles of horizontal salt deposits which, before 3D seismic, concealed underlying structures and their potential.

Frigg differences

The press conferences revealed major differences between the UK and Norwegian governments, on the role of the Frigg gas line, after Frigg field reserves are exhausted. Gunnar Myrvang, the Deputy Industry and Energy Minister, said he hoped that Norway could reach a negotiated solution on the future use of the line and he denied that the talks were deadlocked. However, Tim Eggar, the UK Energy Minister, rejected the suggestion that discussions would be resumed shortly. 'We are still talking about a pipeline with a a great deal of capacity when there is a lot of gas available in the UK'. Some UK observers had difficulty reconciling this with the UK government's avowed desire for open gas markets. According to Mr Eggar, companies anticipating to move non-Frigg gas through the line after 1996/97 would be 'disappointed' and they may have been 'misinformed on the use of the line'.

At the usual official reception, Mr Eggar stressed recent North Sea progress and the success of UK companies in overseas markets. He also emphasised the need for cost-reductions, without which 'there will be no industry'.

Mr Myrvang forecast that Norwegian gas exports would rise from 25 billion cubic metres last year to between 60 and 70 billion cubic metres by 2000. 1994 oil output would be about 2.5 million barrels a day and production from existing fields on stream and under development would peak at 2.8 mbd in 1996. This level would be maintained for five years if new field yields were included.

Dr Subroto, the OPEC Secretary General, making his first visit to OTC, spoke thrice. OPEC production could exceed non-OPEC production by 2005 but, in the meantime, he was more optimistic on prices for the third and final quarters because of higher demand. By 2000 and 2020, respectively, prices could be $24 and $34 per barrel. Current prices were the result of a cyclical pattern, rather than a structural problem. World demand could expand from the current level of 66 million barrels per day (mbd) to 79 mbd by 2010, when demand on OPEC would be 42 mbd.

Paul Kingston of Heriot-Watt University, putting oil spills into context, argued that up to six times the volume spilled from the *Exxon Valdez* originates from domestic sources. Exaggeration from environmental groups, the media and from politicians distorted the public's view and increased their concern, because their sources of information were limited. He emphasised nature's ability to recover rapidly: there was no good evidence that substances did not accumulate in the tissue of animals. Some oil companies were perceived as rich and able to afford anything, so claims were high, although the record shows that fish catches, after a spill, soon recover and can easily reach record levels.

The OTC Distinguished Achievement Award for Companies was made to Brown & Root, for its 'sustained and continuing contributions to the design and construction of offshore facilities in many physical environments and under a wide range of technical and commercial conditions'. Bramlette McClelland, whose company, McClelland Engineers was acquired by Fugro International in 1987, was granted the Distinguished Achievement Award for Individuals, 'for exemplary and pioneering work in the area of soil mechanics and foundation evaluation and design that has advanced the capability of industry to operate worldwide in the offshore environment using a variety of structures'.

Facing up to the pressures

By Frank Leggatt, Marketing Manager, Retail Division, Shell UK Ltd.

At the IP Conference 'Petroleum Retailing and Competition' on 28 April 1994, Mr Frank Leggatt, Marketing Manager of Shell U.K. Limited Retail Division, described how the roadside forecourt sector must adapt to meet the intense pressures of the fiercely competitive and shrinking UK retail fuels market. Here are the main points from his speech.

As a relative newcomer, I have to say that my first impressions of petroleum retailing were of an industry not facing up to changing business and market realities.

The last couple of years have seen a general awakening, and the pain of change will not go away. The industry has a long way to go to rebuild in a way and to a size which makes sense. In Shell, we believe that the pain is worthwhile; as long-term players we believe the winners will do well.

'We must learn to live with and adjust to the supermarkets'

With the structural oversupply of motor fuels throughout Europe, the relative cost of product at the refinery gate will reduce as export opportunities are harder to find. But this will not bring margin benefit to those of us on this side of the refinery gate. Most towns in the United Kingdom are already overpumped, and have one or more supermarket forecourts.

Pump price competition is fierce in the struggle for market share, when there is not the volume to go round. Individual attempts to 'buy' volume merely reduce general price levels. Even with some volume gain, income is probably reduced. Attempts to 'steal' margin, unless backed by real justification in the customers' eyes, lose share which is difficult to win back. Gradually industry margins are being eroded. One penny less per litre is £300 million of profit – £30 million for a 10 percent player.

The situation should not be stable, yet capacity remains virtually unchanged. Let us say, for the purposes of argument, that to compete with the hypermarkets' unit cost advantage and hold a reasonable premium for convenience and service, throughput needs to average 4 million litres. This would mean that several thousand sites would need to close now. This is not of course happening. The two main reasons are like slow fuses – the explosion is a long time coming but will be just as deadly.

Firstly, historically strong positions take time to deteriorate below critical mass. Secondly, ours is a good cash business – even if not especially profitable – and is particularly so if its fabric is not being properly maintained or developed for the future.

Limitless financing seems to have been historically available. Oil companies have poured money in, with a main competitive weapon the oil company as 'friendly banker'. Banks have been fairly free lenders, presumably against the security of big oil company names. But now oil companies can find more rewarding places to invest and banks are more careful.

Threats abound

In a mature, complacent industry, someone is bound to find a new way of attracting customers providing that they can get hold of the product. Hence the supermarkets. Their share will grow to 20 or 30 percent, and their pricing position significantly reduces unit margins. The fuels income available to forecourt operators will reduce by a huge amount. There is no point in hoping that this will go away, or that it is somehow unfair. We must learn to live with and adjust to the supermarkets.

'Convenience normally justifies a premium'

We must also live with regulation. The hazardous nature of our fuels operation, and a redundant view of the competitiveness of our market, mean we already have our share. Regulation should not worry us if it is efficiently applied and consistently interpreted, if inspection and remedy are properly directed at the greatest risk, and if it is not used solely to protect traditional operators in areas where we wish to compete. But as we move into new areas, particularly in retailing food, we face more regulation, stretching management and adding costs.

The impact of environmental regulation is likely to be greatest. The cost of environmental negligence is potentially great. But because the cost of acting responsibly is also high, many forecourts are currently operated at unacceptable risks. This cannot continue. The environmental cost of being in business will dramatically increase.

Satisfying the customer

But the most important factor separating winners from losers will be the continuous delivery of what customers want. Understanding what customers really want is very difficult, and understanding what they will pay for, more so. But we know that price, convenience and quality of service are key.

Marketing propositions with different mixes of these can be equally effective, and customers are quite capable of working out the trade-offs. But propositions which get the mix wrong will not work. A quality offering which skimps on cost, and is therefore not consistently delivered, may make money for a while but will eventually lose customers. A quality offering properly resourced which prices at a discount is a lose-lose; income reduces, and costs stay high. It is easy to 'leave money on the table'. For example, if all the hypermarkets were to raise their prices by a penny, I doubt if it would help roadside sales volumes but collec-

tively the hypermarkets would make £50 million per annum more.

Forecourt shops

There are currently many wrong propositions in place but the pressure and excitement of change may be obscuring whether the end-game is winnable. At the centre of this is the forecourt convenience store. Here there is such a variety of propositions that they cannot all work. Some appear bizarre – convenience normally justifies a premium but we are seeing convenience discounters.

The popular impression is that forecourt retailers started selling groceries in a tit-for-tat with hypermarkets for selling petrol. In fact the growth of forecourt shops stems from the same consumer changes which brought out-of-town one-stop shopping. Forecourt convenience store potential is enormous. Forecourts are the obvious convenience location for motorists, and many pedestrians. In three years, Shell has increased shop sales by 20 percent per annum, improved sales per litre by 50 percent and grown gross margins by over 30 percent.

However, even in its growth phase this market also looks set to be fiercely competitive. And forecourt operators do not automatically make good shopkeepers, nor do their fuel suppliers necessarily know how to run a shop chain. Shop location decisions are infinitely subtle. Real attention to detail is needed to manage several thousand product lines instead of four, and to achieve the consistency underpinning the creation of a retailer brand. Nothing is more forgiving than a growing market. But when the easy growth stops, fixed costs are high and fuel income is much reduced, many will be deeply disillusioned.

Owner/operator/supplier

There are three separate roles in the petrol station business – owner, operator and fuel supplier. Often of course these are not played by three separate people, and a host of different relationships have developed. But responsibilities and benefits are often confused, giving the relationships as much potential for internal conflict as for external alignment into the market-place. Disentangling these relationships – at the heart of our business – will be essential for sustained competitiveness.

Without a fast reduction in site numbers, we cannot expect increasing shop sales and improved operating efficiencies to outweigh lost fuel income – at least not fast enough. So the overall cash available will be squeezed. Confused relationships have made it difficult to see how income and costs relate to investment and risk for the owner, operator and supplier. As the amount available for sharing reduces, this will clarify. The operator, with investment and risk normally in working capital only, is likely to be squeezed first. An owner can easily invest £500,000 in a site; the operator perhaps £50,000. It seems obvious that the owner should take 10 times as much out, assuming risks are equal. The fuel supplier has a major investment in the product, in infrastructure and in his brand, against which he must receive a return. It also seems reasonable that he should at least receive base rate on his financing.

'Real attention to detail is needed to manage several thousand product lines instead of four'

And the winners will have to become excellent retailers. Customers increasingly expect the same detailed attention to their needs on forecourts as they receive buying other goods and services. Perhaps more so, as buying petrol is not intrinsically fun or easy. Owners of sites and fuel suppliers with a network and brand to protect will see it as critical to success that the operator has a retailing mentality and delivers the standards and service expected.

On sites owned by the fuel supplier, these factors will push to direct management. The crucial question is whether fuel suppliers can become good retailers, generating from a retailer brand sufficient income to justify the extra investment and resourcing. It is on this that the long-term future structure of our business will turn. For the foreseeable future the best shows in town are watching oilmen becoming retailers, and grocers becoming oilmen.

Dealers who own their own sites face the same competitive pressures. In choosing a supplier/retailer brand with which to ally, the dealer's decision may be governed less by the size of the cheque, which is in any event being squeezed, but by asking 'If the cheque is so big, where's the catch?'.

Without wishing to exaggerate the gloom, it is difficult to see anything but a tough future for the roadside forecourt sector at its current size and shape.

The hypermarkets, despite pressures building on them, will consolidate a good slice of market share. The long-term refiners, and that does not necessarily mean all refiners, will eventually achieve sound competitive networks – probably two national, the rest regional – based on their company-owned sites and partnerships with well located, like-minded dealers. Niches will remain to be exploited. But as hypermarket saturation brings narrowing price differentials, the fuels market slowly declines, sources of finance dry up and costs grow, it is difficult to see who else can play.

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French downstream still faces hurdles

By Stuart Todd

The French downstream sector showed one or two bright spots last year – such as improved refining margins – but other problems remain. These include concern over the government's fiscal policy, the high cost of environmental protection and an escalation of vehicle offences, as distributors try to contain costs. These factors contribute towards the continuing weakness of distribution margins.

However, France's oil refining sector staged a solid recovery in 1993. Figures from the national petroleum industries federation, the Union Francaise des Industries Pétroliéres (UFIP), reveal profits (before taxation and the impact of price changes on inventories) for 1993 of FFr2.6 billion compared with losses of FFr500 million in 1992.

Refining recovery

French refineries, like their European counterparts, benefited from a steady downswing in crude prices, capacity utilisation above 95 percent and an exceptionally cold autumn which contributed to a firmness in heating gas oil prices. The combined effect of these factors was a significant increase in refinery margins during 1993. 'However, the recovery remains fragile. While refinery margins for the first 11 months of 1993 stood at FFr92/tonne, compared with the FFr60/tonne average for 1992, they are still short of covering fixed costs of at least FFr100/tonne'. 'Moreover, our indications show that refinery margins fell during December 1993,' UFIP President, Bernard Calvet, commented.

Mr Calvet estimates surplus capacity in Europe at 40 million tonnes, the equivalent of the combined output of around 10 refineries. 'As far as France is concerned, there are no plans, for the time being, to close refineries or to significantly reduce capacity but clearly some small-scale refineries in Europe are at risk.'

According to the UFIP, French distribution margins are the lowest in Europe and are too weak to ensure the profitability of the service station networks. 'France's stock of service stations fell from 22,900 in 1991 to 20,175 in 1992 and 1993 is likely to show a further diminution in retail outlets,' Mr Calvet said.

Total French consumption of refined petroleum products for the 12-month period from December 1992 to end-November 1993 decreased by 3.2 percent, the rise in diesel sales (+4.0 percent) not being sufficient to compensate for the slump in petrol fuels (-3.2 percent) and fuel oils (-3.7percent).

Taxation worries

Opposition to French government policy to accord fiscal advantages to natural gas to the detriment of petroleum products, constitutes one of the major pillars of the UFIP lobby. 'Discrimination between fuel oils and natural gas can't be explained by reasons of national security or energy independence because the two are for the most part imported', Mr Calvet said. 'The future of refineries, particularly smaller ones which are dependent on the heavy fuels market and whose size makes it uneconomical to opt for radical conversion, is threatened by this policy. Moreover, 3,000 companies specialising in domestic heating fuel distribution are also at risk – all this without any economic justification for consumers nor improvement in energy self-sufficiency in France.'

UFIP highlight that taxation on heavy fuels with a low sulphur content, used by industry, is 19.5 percent, compared with 0 percent for coal, 11.5 percent for gas and 2 percent for electricity. 'In the domestic sector, taxation on heating oil is 68 percent compared with 15.7 percent for natural gas. We are lobbying for fiscal harmonisation and an end of subsidies for gas and electricity. Hopefully, a parliamentary debate in 1994 will discuss these proposals.' Mr Calvet said.

Automotive fuels have also been a favourite target for the French government in its search for extra revenues. A consumption tax levied on such products increased no less than three times during 1993. Fiscal duties on a litre of leaded petrol account for 80.8 percent of its price at the pump, with only the United Kingdom imposing a higher tax rate. Before taxation, French prices are among the cheapest in Europe (FFR1.06/litre compared with the EU average of FFr1.28/litre at the beinning of 1994). 'We understand the budgetary pressures on the government but moves towards the harmonisation of taxation on automotive fuels should not be jeopardised,' Mr Calvet said. 'In all areas of the downstream sector, there is a need to

put an end to all discriminations in favour of either a class of operator or type of energy be it through taxation or administrative measures. It is the only way to avoid unfair competition which leads to distortions in the market-place and inefficiency.'

Environmental costs

Environmental protection is also a major issue. The UFIP estimate that 'green' investment undertaken by its members will total FFr44 billion for the period 1991-99, including FFr5 billion for unleaded petrol, FFr8.2 billion for the desulphurisation of automotive gas oils and domestic heating fuels and FFr8 billion for the recovery of Stage 1 volatile organic compounds. 'While we view environmental protection as a priority, there has been a tendency to move too quickly in this domain and one only has to look to the United States to see the mistakes which have been made. Perhaps now is the time for a pause in the anti-pollution drive with more scope given to in-depth cost benefit analyses on the impact of the measures being proposed.' Mr Calvet said. 'What we would like to see is a coherent, rational and concerted approach. Instead of national government and the European Union bringing in legislation which seeks to regulate firms' activities, it would be better to fix global, for the quality of the environment and give the industrial sector the leeway to take their own initiatives which would be closely monitored. More is to be gained from the enforcement of existing regulations than the proliferation of new ones.'

Mr Calvet said that a prerequisite for progress in the future was a 'level playing field, where the same rules apply to everyone – at least in OECD countries, so that the oil refining industry does not suffer the same problems linked to the re-location of production facilities which are afflicting the textile and steel-making sectors in Europe.'

Vehicle offences up

One downstream area of growing concern to UFIP is the road transport sector and in particular, the rise in the number of vehicle offences. Quoting French Ministry of Transport statistics on HGV traffic globally, UFIP point out that between 1988 and 1992, the number of annual recorded offences relating to over-loading increased from 23,711 to 48,497. During the same period, offences relating to driving hours and rest periods rose from 5,512 to 9,454 and those for breaches in MOT vehicle test regulations from 14,487 to 28,754.

Prompted by these statistics, the UFIP has produced a study of the impact on costs resulting from breaches in legislation governing the transport of petroleum products by road. The study was based on the general assumptions that a road tanker has a 38-cubic metre capacity, the average distance covered per delivery (including return journey) is 150km and that the cost of hiring a vehicle and driver is FFr7,800 per week. It then takes two examples of road tanker operation, one which respects the legislation in force and another which is in breach of it.

Mr Bernard Calvet, UFIP President

In the first example, the road tanker is loaded to 33.8 cubic metres, the equivalent of 40 tonnes, records an average speed of 46km/h and the driver clocks up 45 hours behind the wheel during the week. This works out at FFr1,310 per delivery, the equivalent of FFr39/cubic metre.

The second example is based on the hypothesis that legal limits referring to loading, travelling speed and driving hours are overstepped by 10 percent. The vehicle is loaded to capacity (38 cubic metres or 44 tonnes), the average speed is 50km/h and the driver spends 50 hours per week in the cab. This works out at operating costs per delivery of FFr1,210, namely FFr32/cubic metre. The difference is therefore FFr7/cubic metre, the equivalent of cost savings of nearly 20 percent.

Need for European harmonisation

'Clearly there is considerable temptation to break the law and an increase in the number of vehicle inspections and the imposition of tougher sanctions is imperative in order to prevent it.' Mr Calvet said. 'There is also a real need for European harmonisation on operating conditions in the road haulage sector. French hauliers must comply with stricter codes of conduct than their neighbours in bordering states which constitutes a serious disadvantage.' The French Transport Ministry recently announced a package of measures for the road transport sector, including stiffer penalties for HGV offenders. 'The measures are designed to put an end to the scandal which sees some operators picking up business by flouting the law at the expense of others who respect it.'

The UFIP highlights the safety record of dangerous goods vehicles (DGV), drawing on the latest available national road statistics on fatal and corporal accidents during the period 1990-91.

The figures reveal that DGVs played a part in 101 accidents on French roads in 1990. This compares with 1,542 accidents involving HGVs and the total number of accidents which totalled 162,573.

The 101 accidents led to 16 deaths and 115 injured. However, the statistics distinguish those accidents in which DGVs had a direct impact, for example, where they were the cause of ensuing fire or pollution. According to this analysis, the number of accidents totalled 37 and were responsible for four deaths and left four people injured.

In 1991, the number of accidents involving DGVs rose to 111 and led to 21 deaths and 157 injured. 'Direct impact' accidents decreased to 22 with no deaths as a result of dangerous goods and only one case of injury reported.

UFIP figures show that French road tankers carried 59.5 million tonnes of refined petroleum products (excluding ship fuel and LPG) in 1992. This represented a domestic market share of almost 60 percent compared with pipelines (30.2 percent), rail wagons (6.9 percent) and barges (3.9 percent).

An assessment of European forecourt marketing strategy

By Mathieu Zajdela, Head of Studies, Enerfinance

For many oil companies, 1987-93 was a difficult period, synonymous with restructuring, stagnation or falling sales and lower than expected profitability. However, this overall negative picture needs closer examination, for three reasons:

- Negative evolution was especially strong in 1992-93, while the period 1987-91 showed mostly positive growth;
- During the last two years, gaps widened between the different European markets, whether in evolution of demand or competition, making it hard to establish average European trends;
- Some companies recorded considerably better results than others.

For oil companies in Europe, results depend on the geographical sales structure (for some, the weight of difficult markets is heavier than for others), but also on strategies.

Forecourt marketing strategy can be divided into four main parts:

- Restructuring and expansion strategies;
- Modernization and diversification strategies;
- Advertising and promotional strategy;
- Pricing strategy.

Network evolution

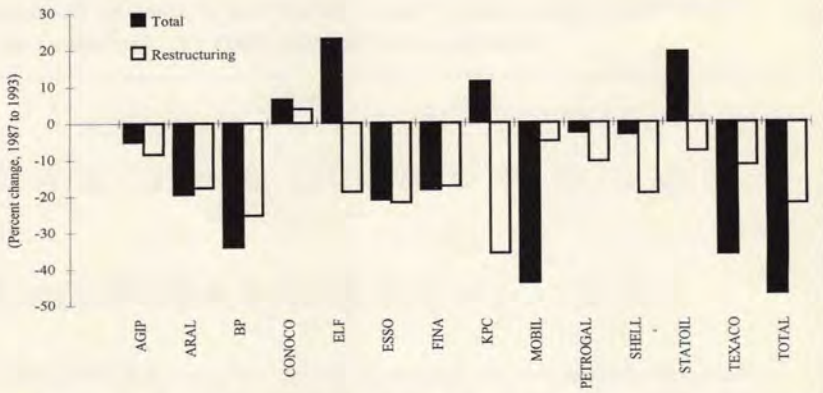
Of the 16 companies studied, six increased the number of their points of sale between 1987 and 1993 – Conoco, Dea, Elf, KP, Repsol and Statoil.

Ten companies reduced their total points of sale (POS) - four by more than 30 percent (BP, Mobil, Texaco and Total). Aral and Esso slashed POS by more than 20 percent, while the other operators (Agip, Fina, Shell, Petrogal) recorded smaller reductions.

However, these figures include effects linked to major acquisitions as well as entries into and exits from markets. By excluding these, so as to measure the full volume of existing network restructuring (closing of points of sale), the downward movement appears more accentuated. All companies have reduced their points of sale, except Conoco.

On this basis, ranking operators by network restructuring is different: As an example, KP's network was cut by 36 percent on a constant base (excluding all major acquisitions and investments), while in absolute terms it rose 11 percent. In contrast, the Mobil network diminished 44 percent in absolute terms but in the countries where the group remains present, restructuring was limited (-5 percent).

Change in the number of service stations (1987 to 1993)



Restructuring: excluding withdrawal and major acquisitions/divestments

Modernisation programmes

In all, 10 company networks out of 16 reviewed have been fully rebranded since 1987. Six have profoundly changed the design of their service stations since 1987 (or even before), and modernized a large proportion of their service stations: Esso, BP, Total, Conoco, Fina and Elf. Companies which entered the market during the 1980s through acquisitions also had to re-image their networks. These include Statoil, Dea, Repsol and KPC. Others have developed no new concept, preferring to adapt their existing formulas. These are Shell, Mobil, Agip, Aral (which has, however, carried out a major rebranding programme) and Texaco.

Diversification

Over the last 10 years, most oil companies have embarked on vast diversification programmes with the aim of reducing commissions on fuels while increasing the retailer's non-petroleum revenues.

However, here again we can see big differences from one company to another, and sometimes from one country to another within the same group. This makes it difficult to rank operators by degree of diversification of activities at their service stations. We can, however, look at three groups of operators:

- Agip, Conoco, Repsol and KPC, whose stations offer a generally low level of diversification;
- BP, Mobil, Esso and Statoil, whose stations offer an average degree of diversification, though uniform across Europe;
- Aral, Dea, Elf and Total, who have developed a great degree of diversification but on part of their networks only.

This diversification strategy was successful globally but the real success stories are, in many cases, linked to special situations, such as the location of stations (motorway for example) or local legislation (as in Germany, where service stations take advantage of opening-hour restrictions that apply to traditional

businesses). Generally, service stations make the majority of their sales on dry goods, alcohol and such items but oil companies have yet to convince consumers that the service station is a place where they can regularly stock up on fresh products. This is explained by prices in forecourt shops, as well as by the fact that oil company brands remain over-associated with motor fuel distribution in the eyes of consumers.

Many observers admit that extensive diversification plans, such as the creation of true convenience stores, yield mixed results.

At a time when hypermarkets are launching true convenience stores linked to gasoline distribution, some oil firms are looking for ways to redefine their diversification strategy. But companies admit that many problems stand in the way of developing more ambitious strategies:

- Logistics and purchasing power;
- Service stations whose forecourts and shops are not adapted to this type of activity (most are designed to sell fuel);
- Poor knowledge of the non-oil distributor sector.

This does not hinder certain operators from devising new strategies, for example hard discounts on a limited range of shop articles, or convenience stores with the oil company brand which do not distribute gasoline.

Advertising strategies

With the characteristics of a mature European market (stable or in decline, homogeneity of products offered, heavy competition), here more than elsewhere, advertising must be efficient.

The essential difference between oil company communication strategies is the importance given to either corporate advertising or promotional campaign advertising . The first is generally based on logo identification - often taking the form of sponsoring popular sporting events - rather than communications based on the initiatives carried out at the service station (loyalty schemes, promotions etc).

Most companies - Agip, BP, Fina, Repsol, Shell, Q8 and Elf - base the essentials of their service station communications on corporate image initiatives but each has different reasons for doing so. In the case of Q8, for example, the introduction of the brand in Europe was the aim of their corporate advertising campaigns.

However, many companies are moving towards campaigns based on specific initiatives taking place at the service station because they are finding that consumers are more inclined to react to actual events than to general image campaigns. These operators have conceived communications built on promoting a service, a distribution concept, or a specific commercial action: Total (based on service and welcome), Dea (on complementary services offered by stations or specific marketing actions), and Esso (a standardised concept of its service station and specific point collection initiatives) fit this category. Aral's also belongs to this group as, although corporate communications are an important part of advertising strategy, they are based on specific projects like vapour recovery or solar-powered stations, not on general concepts like product quality or technology. Conoco, which centres most of its strategy around its low prices, also fits this group.

Just how much these corporate strategies have an impact on oil company market shares in Europe is difficult to judge, since complete data are not available and several factors can come into play simultaneously (strategy, price etc). However, several conclusions are evident:

- Corporate strategy can, when well conceived, lead to an improvement of a company's image; but in a highly competitive market, image-bolstering does not automatically mean increased market share;
- The consumer is waiting for oil companies to differentiate their service offers. This makes advertising messages based on logo identification, product quality or technology much less efficient, since these concepts are not effective when promoting fuels.
- Promotional strategies based on a specific service offer are hard to implement, because promoting a service assumes that it is available across most of the network. They are risky, since promising a warm welcome assumes that managers have been trained to provide one, which means extensive training programmes. Implementing such a strategy needs a solid logistics organisation, a relatively uniform network, and a high integration of retailers in the company's personnel. Finally, these strategies need ongoing renewal and updating to retain the customer's attention.

In 1992-93, some companies which doubted the wisdom of big advertising budgets, cut them back considerably. However, today most companies admit that cutting advertising is not the right solution, as it implies not being present in the consumers' minds. The real solution lies in choosing an advertising strategy which will efficiently, and cost effectively, have an impact for the company, whether it is implemented locally or internationally.

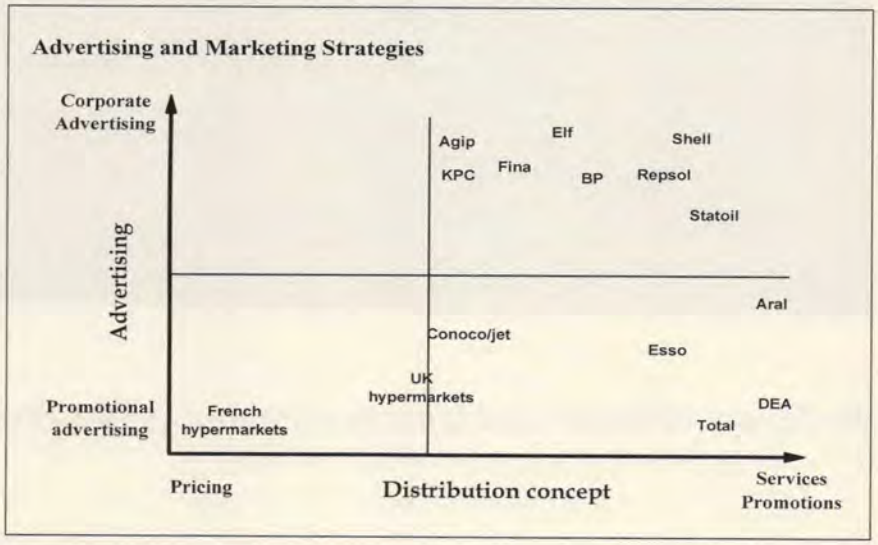
Pricing strategy

In some markets, the coming of new competitors who base their strategy on a policy of dynamic pricing has made pricing strategy an essential factor in marketing strategy. Faced with this new competitive environment, most oil companies have implemented very precise pricing strategies, based on local competitive situations, and aiming to resist discounters while avoiding a general collapse of margins.

If all marketing strategy parameters combined play an important role in explaining the success of certain oil companies, four have particular importance:

- The quality of the service-station concept, which should allow for quick identification by the customer and which should stand the test of time, be simple, allow for economies of scale (in construction costs) and be economic to maintain;
- Stability of marketing and advertising strategies, and their coherence with the structural characteristics of the network (location of points of sale etc);
- Pricing strategy;
- Network structure (the proportion of company-owned sites.

This article is based on a selection of conclusions from a recent study on the forecourt marketing strategies of 16 oil groups in Europe, undertaken by Enerfinance Consulting Services.



Update on Spain's oil market

By Daniel Whitaker and Ignacio Gutiérrez, NERA Economic Consultants

Until 1984 the Spanish oil sector was tightly controlled by the state. Since then, mainly in response to Spain's entry into the EC, there has been a steady policy of liberalisation, culminating in two major new oil sector reform laws passed in 1992. Step by step the oil business has been transferred from state monopoly back to the private sector from which it was expropriated back in 1927.

However, this does not mean a return to the pre-1927 days when foreign-based multi-nationals such as Shell and Standard Oil controlled the market. Nor does it yet mean completely unfettered competition. The Spanish market remains dominated by three large companies: first and foremost, Spain's own Repsol, the Hispano-French company Cepsa-Elf Aquitaine and BP Oil España. There have been complaints from some quarters that there are still important barriers to competition, although Shell recently bought its way into the market by purchasing some of Repsol's shares in the main transport company. The government also shows its continuing reservations about the free market by setting weekly maximum gasoline prices. Nevertheless, there is a steady march towards greater liberalisation, if in a managed official Spanish style.

The market

Because Spain has only marginal oil deposits of its own, almost all demand must be met by imports of crude and most oil products. In 1992, 98 percent of crude was imported, compared with an EC-wide average of only 22 percent. Spain's main sources that year were Mexico, which supplied almost a quarter of the total, Nigeria (16 percent), Saudi Arabia (15 percent), Libya (12 percent) and the ex-Soviet Union (6 percent).

At the same time, the Spanish economy remains very oil dependent, with the share of oil in primary energy consumption at 54 percent in 1991, compared to an EC average of 44.6 percent. This is despite Spain's figure having fallen 15 percentage points since 1981, with oil consumption falling by two-thirds and one-half respectively in the electricity and industrial sectors.

Refining and petrochemicals

As elsewhere in Europe, the refining sector is characterised by excess capacity, and especially by overproduction of heavy products (eg fuel oil) some of which is exported. Net exports of fuel oil totalled 4.4 million tonnes in 1991, more than half of the total Spanish oil product exports. However, total capacity in Spain has been falling for the past 10 years and the capacity utilisation ratio has improved. In 1980, Spanish total refining capacity was 72 million tonnes/year (mty) and the capacity utilisation ratio a mere 68.8 percent. Ten years later, the total refining capacity in Spain's refineries had fallen to 62 mty and the capacity utilisation ratio had increased to 89.7 percent. Five of Spain's 10 ageing refineries belong to Repsol either directly or through its

subsidiary, Petronor. Four belong to Cepsa-Elf and one to BP.

The Spanish petrochemical sector was liberalised in the 1970s. Foreign firms can freely import products and build petrochemical plants, while the government intervenes only by imposing import tariffs, which were completely eliminated in January 1993 for petrochemical products from other EC countries.

Transport and distribution

A 3,500 km pipeline network is owned and managed by Compañía Logística de Hidrocarburos (CLH), which carries out most oil transport and storage with a fleet of 250 trucks, 25 vessels and a nationwide network of storage facilities. CLH was jointly owned by the three oil companies that own refineries in Spain, in rough proportion to their refining capacity until Shell España purchased a 5 percent share from Repsol in October 1993. The holdings are now: Repsol (60 percent), Cepsa-Elf Aquitaine (25 percent); BP Oil España (10 percent) and Shell (5 percent).

Spain has around 6,000 service stations, fewer than Italy (30,400), France (22,900) or Germany (18,700). The oil companies plan to increase this number by 3,000 before the year 2000, representing an investment of 400,000 million pesetas (US$3 billion). According to industry reports, Repsol has around 2,600 stations, Cepsa-Elf 1,200 and BP almost 400. The remaining outlets are owned by companies that do not have refineries in Spain, the most important of which are: Petrogal, Shell, Texaco, Agip and Mobil. Pump prices and gasoline taxation (at around 60 percent of final price) are similar to the EC average.

Investments

This restructuring over the past eight years has also involved significant new investments by the oil companies, especially in refining and marketing. Some 500,000 million pesetas ($3.7 billion) was invested during 1986-91 and an additional 800,000 million pesetas ($6 billion) is planned during 1992-97. Most of the new investment will be in refining (representing half of the total) and marketing.

A Repsol service station

Structure and regulation

The recent liberalisations signal the reduction of governmental control after more than half a century in which the state has dominated the oil industry. In 1927 the government awarded Campsa, which was jointly owned by a consortium of banks, a monopoly over the import and marketing of oil products in the Spanish mainland and the Balearic Islands (the Canary Islands were excluded). In 1985 Campsa was transferred to the refining companies in proportion to their refining capacity. Since then, and until recently, the government has exercised control over the industry either by direct ownership of the oil companies or by heavy regulation.

Until 1985, the assets used to transport and sell oil products, ie the pipeline grid and service stations, were owned by the state, although administered by Campsa. Between 1985 and 1992 the state sold its assets to Campsa and in June 1992 Campsa distributed the service stations to the Spanish refineries *pro rata* to their holdings in Campsa. The remaining assets of Campsa, pipelines, other transport and storage facilities, were grouped into the new company, CLH, which is still owned by the old Campsa shareholders. This company transports and stores most oil products in Spain, although the liberalisation of the oil sector is likely to reduce its market share in these activities.

Some restrictions still exist on imports of oil products from non-EC countries, while the government continues to set weekly maximum prices, perhaps reflecting concern about the effectiveness of competition in the new liberalised market. Until 1 January 1993, 90 percent of the imported oil had to be shipped by Spanish vessels. This restriction has since been lifted and companies can also now freely transport oil products across Spain by whatever means available. Nevertheless, most oil companies pay a tariff to CLH and use its pipelines and trucks.

The three refining companies dominate the oil market: Repsol with an estimated 60 percent market share by revenue, Cepsa-Elf Aquitaine with 25 percent, and BP with 10 percent. The remaining 5 percent is accounted by non-refining oil companies.

Repsol was created in 1987 by grouping together all the oil companies controlled by the state, with the declared objective of creating a national oil company that would have the 'necessary' size to compete with foreign oil compa-

Gaviota field in the Bay of Biscay

nies in the Spanish oil market once it became liberalised. It is owned jointly by the state holding company INH (40.5 percent) with the remaining capital in the hands of small investors following a highly publicised privatisation process that cut INH's holding from more than 90 percent in 1989. The biggest of the smaller shareholders is the Mexican oil company Pemex (5 percent). Cepsa-Elf is jointly owned by the Spanish bank Banco Central Hispano, which holds 43.1 percent of its capital, Elf-Aquitaine with 30.7 percent and the Abu Dhabi Investment Authority with 8 percent. BP Oil España is controlled by BP, which owns most of its capital.

The sector's liberalisation dates from Spain's treaty with the EC of 1985, which stated that the national oil monopoly must be dismantled within seven years. Thinking ahead, the Spanish government began to reorganize the sector in 1984. The main pieces of legislation in this respect are:

- **Elimination of the quota system** which had obliged refineries to purchase some crude at regulated prices, although there is still some control over the source and terms of non-EC purchases for 'security of supply' reasons.
- **Law No. 45/1984 (17.12.84):** Reorganization of the Oil Sector. Campsa bought Spain's transportation and marketing networks from the government.
- **Law No. 5/1985 (12.12.85):** Measures to Adapt the Oil Monopoly to EC Law. This set a timetable for the reduction of barriers to the import of oil products from the EC and liberalised oil product transport and distribution.
- **Law No. 15/1992 (5.6.92):** Urgent Measures to Adapt the Spanish Oil Sector to EC Law. These included: the allocation of the commercial assets of Campsa, which included its petrol stations, a chain of convenience stores and its crude reserves, to its shareholders, proportional to their holdings in Campsa; a grouping of Campsa's remaining assets into a new company called CLH and the transfer of the Campsa trademark to its biggest shareholder, Repsol. This law also ended the monopoly over fuel oil and LPG and reduced the minimum distance allowed between petrol stations in order to boost competition in distribution.
- **Law 34/1992 (22.12.92):** Reorganization of the Oil Sector. This further liberalised intra-EC trade in oil products. The refining, transport and marketing of oil products were also further liberalised, although certain security of supply measures were introduced.

Security of supply

Spain's dependency on oil imports means that the threat of a future oil crisis is still considered a serious one. Law 34/1992 requires oil companies operating in Spain to maintain a minimum level of reserves of oil products of up to 120 days of their respective annual sales in Spain. The law also created a state agency to manage the strategic reserves, financed by oil companies operating in Spain. In addition measures that would be applied in the event of an oil crisis are laid down, including limits to the utilisation of vehicles or vessels, a reduction of the speed limit and limits to the oil product exports.

Tariff regulation

Under the old system, the government set the retail prices of most oil products. This was gradually eliminated between 1986 and 1990. The prices of oil products are now 'fully' liberalised, subject only, in the case of bulk LPG, gasoline, diesel and heating oil, to government-set weekly price ceilings. These price ceilings are set using formulas that take into account, *inter alia*, spot and retail prices in six other EC countries.

Limits to liberalisation?

Despite the liberalisation, the three main players still enjoy a significant degree of market power and there have been complaints by some of the smaller oil companies operating in Spain and by those wishing to enter the Spanish market as well as some large oil product users, that important barriers to competition still exist. Recently, the Spanish Ministry of Public Works and Transport (MOPT) sent a letter to the president of the Spanish anti-trust commission asking him to investigate the existence of monopolistic practices. Although this investigation is focusing on final prices, an important cause of friction is that companies which are not CLH shareholders claim that CLH charges them discriminatory tariffs compared with those it charges to its shareholders: Repsol, Cepsa-Elf, BP and now Shell, although this is by no means clear. Liberalisation, say some critics, has been carried out within limits intended to foster a strong domestic oil industry, in the shape of the most important of these companies: Repsol. However, other observers point to the recent entry of Shell into the capital of CLH as showing that Spain's oil market structure is not completely static and suggesting that the movement towards greater numbers of market participants will continue.

Future

The Spanish oil sector has undergone a process of restructuring which will continue in the future with the possible entry and expansion of further foreign oil companies, possibly in a negotiated manner along the lines of Shell. Despite the current recession, new investment will continue to go to the construction of service stations. Greater competition is also likely in the transport market, although Shell has taken itself off the list of potential competitors to CLH's existing network.

In refining, the short-medium term offers a mix of threats and opportunities to Spain's existing refiners. Tougher competition and competition policy; the switch to gas; and the weak peseta all worry the refiners. Against this exist the prospect of freer trade in oil products; economic recovery in Spain; new technologies improving production process and product quality and other forms of cost reduction.

Demand projections indicate a convergence of oil product consumption patterns with those of the EC, with a higher relative share for light and medium oil products. This will place further pressure upon the refining sector to reduce production of fuel oils.

Refining activity in 1991

	'000 tonnes
Production	50,643
LPG	1,794
Naphthas	2,347
Gasolines	8,728
Kerosenes	3,832
Diesel oils	15,596
Fuel oils	13,717
Lubricants	296
Asphalts	2,579
Coke	429
Other	1,298
Imports	11,484
Exports	11,394
Consumption	50,553

Forecast change in structure of demand (% of total demand)

	1990 Actual	*1995*	*2000*
LPG	3.4	5.1	4.6
Gasolines	17.5	19.0	19.2
Kerosenes	8.6	5.9	6.3
Gas oils	28.3	35.0	35.6
Fuel oils	25.5	15.7	13.5
Others	16.7	19.3	20.8
Total	**100.0**	**100.0**	**100.0**

Source: Ministry of Industry, Commerce & Tourism

Topas helps Esso get IT together

By Lesley Hudson, Marketing Manager, Topas UK Ltd

A drive for improvement and safety has led the Esso Distribution Department to a state-of-the-art computing and communications system. Over the last 10 years it has achieved what other companies merely strive for when it comes to an integrated oil distribution, accounting and terminal management solution. It all starts from the Esso West London Terminal.

There is a lot more to this terminal than a few storage tanks and a fleet of trucks. Not only does it process more fuel than any other Esso terminal. it also houses the nerve centre of the company's fuels order and delivery operation and advanced computer technology.

Esso Distribution Department Systems Manager, Trevor Hill, has spent more than 12 years looking for the best solutions and implementing a combination of high tech computer equipment and software to integrate the order processing and operational side of the business, and subsequently improving efficiency, control and safety and ensuring the customer receives the highest level of service.

Distribution

Meeting Esso customer requirements by sending every delivery in the country to the right place, at the right time, and in the right quantities is a complex, ever-changing, logistical teaser. Masterminding the round-the-clock solution is the Distribution Centre – the national hub for receiving customer fuel orders and dispatching trucks to customers.

The centre handles as many as 300,000 deliveries every year, co-ordinating drivers and trucks for the company and its contractors.

In the company's quest for greater efficiency and improved customer satisfaction, Esso centralised the petroleum distribution administration activities in 1987 when a centralised ordering centre was set up at the Esso West London Terminal. Central to its daily operation is 'the Orderpoint' which receives all customer orders for fuel products. Orders are phoned in to a team of sales delivery advisers – or are logged directly into the Orderpoint's computer via the customer's telephone keypad. Distribution planners access the customer order data to allocate deliveries to specific trucks and drivers and produce the optimum schedule for a shift. This information is printed onto tickets at the plants and terminals for distribution technicians to pick up when they start their shift that evening or the next morning.

At the same time, the Distribution Control Centre is working to provide around-the-clock service to drivers out on the road. If they get into any difficulties – for example, with breakdowns, late cancellations or customer queries – they are able to contact the Control Centre for on-the-spot advice and assistance.

Operations Control Centre

The Glaswegian road tanker driver muttered quietly as a minor problem disrupted his loading sequence at the Esso distribution terminal on the north bank of the Clyde. The vehicle loading racks are not the best place to hang around at six o'clock on a cold, dark winter morning but he was confident the delay would be short.

The supervisor had a very good view of the loading bay and, as he saw the driver reach for the phone, he put on his screen all the information needed to clear the hitch. A quick chat soon resolved the problem and, of course, knowing the driver's name helped.

'So what,' you may think. A routine situation that could happen in any oil company terminal. Well routine, yes – another company, no.

The factor that makes this simple encounter quite unique is 400 miles – the driver was on the outskirts of Glasgow and the loading supervisor was in the Esso West London building. More to the point, he was one of two experienced Esso supervisors that now also control loading operations on other major terminals.

The introduction of the Operations Control Centre (OCC) at West London provides round the clock monitoring of loading bay activities at 10 major terminals round the country. The OCC can now visually supervise activities at the terminals, instantly access real-time information on their operation, and

communicate directly with drivers in the loading bays to assist problem solving or provide on the job training.

Each controller scans several large monitors and can select any mix of live video and digital 'windows' on each screen to provide information on any off the loading operations that could be taking place around the country.The closed circuit TV helps in incident investigation, recording all loading bay activities on video and the rack automation logs all 'alarms' which can be routinely analysed to identify faulty equipment.

This is part of a loading bay automation system that has been operating successfully for a number of years and controls access to the terminal, product transfer from the loading bays and fuel for the trucks. More recently other ter-

minal activities have been automated to provide continuous monitoring and more effective supervision of terminal operations. These include, for example, receipt of product by pipeline or sea, tank farm operations, inventory management and product quality control.

Until very recently the control of a distribution terminal's automation systems had been with a local supervisor flanked by computer screens in a vantage point actually overlooking the loading bays.

Esso drivers are highly trained and intervention from the supervisor during loading is not a frequent occurrence. That being the case, it became apparent – visibility apart – that there was no reason why the supervisor had to be located at the terminal.

The loading bay automation enables the details of a driver, his vehicle and its tank configuration to be flashed up on the controller's screen. Equally, the real time status of the loading operations is similarly displayed, so the only factor standing in the way of remote supervision was a view of the loading itself. The problem was removed by an 80 camera closed circuit television network. This has provided a live system that monitors and controls all road loading operations from one location at the West London Terminal.

Transport

No-one escapes the long arm of the computer not even the road tank drivers. Electronic systems are no strangers to Esso drivers as they now have their in-cab computers. In addition, all have day-to-day contact with the ubiquitous silicon chip via a magnetic strip on a plastic 'swipe' card that is literally the key to their job.

At the start of the working day the driver's plastic card triggers the computer to print-out details of each customer delivery he has been assigned for that shift. It also enables the computer to establish the association between driver, vehicle and load.

The 'ticket' – transmitted from the Distribution Centre – advises the distribution technician of the customer's order details and the loading configured into the truck. The loading rack automation system will not accept different load quantities for that customer. From there, distribution technicians follow the schedule specified on their 'tickets' – usually involving three to five round trip deliveries.

Plant

Much less dramatic but potentially preemptive of such an occurrence, maintenance information concerning the distribution terminal equipment is also handled by a centralised maintenance management system. If problems occur, the OCC can communicate the fault directly onto the screens of each terminal's local maintenance engineers. This ensures the problems are speedily rectified and recurring problems more easily identified from the computerised database.

Accounting

Accounting for the flow of product from receipt, to loading, to delivery is a highly complex business. Many orders require a change of breakdown before the product is loaded and deliveries are not always made as planned. At each stage the changes must be audit trailed to ensure the product is properly accounted for and does not compromise the safe loading of a truck. In addition, petroleum products are a costly commodity and represent a sizeable inventory valuation, warehouse and loss monitoring efficiency is therefore a key incentive.

The Esso Sales and Stock Accounting system handles all of these aspects within an integrated data flow environment. Central to the system is the staged reconciliation cycle whereby loaded product is reconciled against loading meters, confirmed loaded volume against billed and movement in and out of storage tanks against inventory.

At the major terminals loading and warehousing data is fed from the process control systems into the main distribution system enabling appropriate accounting transactions to be automatically generated and reconciliations automatically run and archived.

To complement the overall rationalisation strategy, the accounting function has been centralised onto West London Terminal so that there is no accounting expertise at the field locations. To achieve this it was necessary to upgrade the accounting system so that field users work almost entirely from the simple Daily Checklists requiring no accounting knowledge and with minimal support. All accounting transactions are automatically generated based on data prompted through the Checklist, making for a high level of standardisation and accuracy. Any reconciliation imbalances and all stock. reporting is the responsibility of the central group who have at their disposal 'leading edge' computing technology to monitor the situation across the entire network.

Technology

At the heart of this 'high tech' nerve centre is Topas application software, managing the overall order processing, stock control, accounting and distribution aspects and maintenance management. The Topas specialised technical support team have worked with Esso to automate the plants and integrate the various elements. 'The secret is the computer software that brings the information and pictures together in one place and, potentially, onto one screen,' says Mr Hill.

The partnership started in 1978 when Topas developed the first distribution system. The original Topas system (order processing and distribution software and Honeywell hardware) has since been superseded by a tailored solution, highly customised to suit the complexities and idiosyncrasies of the Esso business, and IBM AS/400 hardware. Over the years the company has continually enhanced the software and developed new applications to meet Esso's changing needs.

The aim is to bind all the elements together to run on a single token ring network. To achieve this the Distribution Department's strategy involves an IBM AS/400 model E80 as a co-operative processor with a country-wide Token Ring network using various bridging routes connecting the work-stations at the plants. All the mission critical data is held on the IBM AS/400 with integration to the Terminal Automation, the video and OTC systems.

Control Centre screens provide information on vehicles, drivers, loading status and a panarama of the loading operation

Democracy brings rewards to Chilean energy scene

By John Cranfield

This year may well go down in Chile's energy history as the most important since oil was found back in 1950. In February, a new crude-oil pipeline began to move Argentine production across the Andes. And in the wings is a new gas line that will allow Argentine natural gas to be piped to homes and businesses throughout Chile's major conurbations. These developments, as long as relations with Argentina stay good, will give Chile energy security rarely seen before.

Although oil was found over 40 years ago, volumes have never been high. And, with all fields either offshore in the Magellan Strait or onshore on both sides of the waterway, logistics have always been a problem. In early days, all crude was exported, up the Atlantic seaboard of South America, mostly to Uruguay. When Chile started up its own refining industry in 1955, products import gave way to the refining of local crude. But, with the populated areas separated from the oilfields by over 1,000 miles of mountains onshore and some of the world's roughest seas offshore, transport has always been a costly problem.

For around 20 years, local crude production just about kept pace with demand, but since the 1970s has dropped further and further behind. Import is the norm today, with transport cost still a major consideration. Now, just over 400 km of mountain pipeline is changing the picture. For the local upstream industry, difficulties remain. Some crude is still shipped out of Magellan Strait terminals, though a local refinery caters for product needs in the far south. Gas, once sold to Argentina for transmission northwards along the latter's coastwise pipeline system, is now mostly reinjected, though some finds a use as petrochemical feedstock locally.

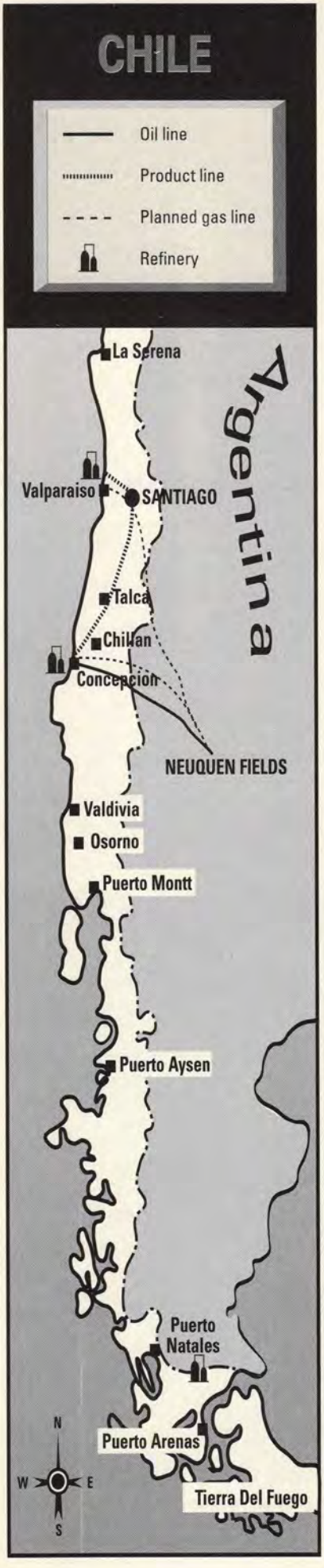
The new trans-Andean pipeline started up at 38,000 b/d in February. Through-put was expected to build to 50,000 b/d as *Petroleum Review* goes to press and to 107,000 b/d by mid-year. Of that, around 70,000 b/d will be exported via the Chilean Pacific coast port of San Vicente, opening up major new export opportunities for Argentina. The remaining 37,000 b/d will be refined at Chile's Talcahuano refinery.

Local oil down, gas up

Average oil production in 1992 was just 15,778 barrels per day (b/d), a sharp contrast to the 1982 peak of 42,800 b/d. The latter came about in the wake of new finds offshore in the Magellan Strait and briefly arrested a gradual onshore decline from the previous peak of 35,300 b/d in 1971. The disappointing performance offshore has, unhappily, coincided with a steady rise in oil's share in primary energy demand. There are, however, signs of a revival. Early in 1992, state oil firm Empresa Nacional del Petroleo (Enap), partnered by Texaco, Anderman Smith and Argerado, found a new field onshore Tierra del Fuego, the Lago Mercedes-1 testing 14.1 million cubic feet/day (MMcfd) gas and 1,260 b/d condensate.

While any new finds are welcome, the trend towards gas has been clear for some years. Until 1988, most gas was exported, after NGL stripping, to Argentina. Then a new outlet was found in the Cape Horn Methanol plant opened that year. This has seen somewhat mixed fortunes but its 2,268 tonnes per day capacity was soon exceeded by 14 percent and in 1992 a further 10 percent expansion was put in train. Using around 900 MMcmy of local gas feedstock, Cape Horn Methanol may be the world's largest

Pipelaying in progress. Chile's nearest source of oil and gas is just a few hundred miles away across the Andes. But dictatorship and border disputes always provided a roadblock



single-train methanol plant, but it still makes only a slight dent in Chilean gas usage. In 1991, for instance production was 4.067 Bcmy, sales just 896 MMcmy and reinjection to maintain oil flow 2.295 Bcmy. Sales across the border to Argentina have fallen as the latter has gradually found more gas than it has outlets for, while piping the surplus to Chile's own population centres is ruled out by the terrain.

Downstream processing locally is thus the only real way in which Chile can both use and profit from its sizeable gas reserves. Early last year, therefore, a second use was once more being studied – the production of ammonia and urea. This resurrects mid-1980s plans which foresaw an output of 1,350 t/d ammonia and 1,725 t/d urea. But one of the main partners pulled out and the project, to be located at Cabo Negro, died. Now Enap is in discussion with three private-sector partners for a complex that would use 800 MMcmy of local gas, virtually doubling current usage.

Ample refining capacity

Disposal of crude, at current low levels, is straightforward. A small refinery at San Gregorio on the Magellan Strait can handle 9,000 b/d, leaving just the odd cargo to make the voyage up the west coast to Enap's main plants, at Concon near Valparaiso, and Talcahuano near Concepcion. These are rated at 66,045 b/d and 89, 570 b/d respectively and both have substantial upgrading capacity. With total refining capacity at 164,615 b/d, there is still ample leeway over demand. In 1991, local crude output of 17,806 b/d was topped up by imports of 109,589 b/d, resulting in 127,395 b/d running to stills. But demand ran that year at 138,527 b/d, requiring the import of an average 10,500 b/d of products. These figures do not exactly match, since gas produced in the south is first passed through an NGL-stripper before being reinjected or sold as feedstock. Substantial volumes of LPG and natural gasoline are thus despatched north to population centres but do not turn up in refining statistics.

The new $300 million, 424 km, pipeline from Argentina is owned by Sociedad Oleoducto Argentino (YPF, Perez Companc and Enap). When running at full capacity, it could virtually eliminate the need to import crude from other sources. This gives Chile an extra flexibility in price/volume negotiation with its other suppliers in Latin America and West Africa. In addition, the new line cuts average crude-transport costs and provides a secure supply. To ensure that as much of each imported barrel of crude is used as fully as possible, Talcahuano's operator, state firm Petrox, last year launched a joint study with Enap and Foster Wheeler Power Systems into the possible installation of upgrading capacity to treat residuals. Also under consideration is a co-generation power station next door.

Upgrading rather than expanding refining capacity is in line with general energy policy as carried on over the past decade or more. Twenty years ago, oil use was growing at a phenomenal rate, over 20 percent/year, and this was seen as unstabilising, given the country's geographical position. So emphasis has been maintained on diversification. Some 2 million t/y of coal is produced, while there is sizeable hydroelectric potential. However, Chile is on the short steep side of the Andes, so this potential is not so great as might at first appear. Thermal power stations will soon be necessary and the Talcahuano plant is just one.

Gas takes the stage

The need for further diversification; the need for more thermally-generated power; and the realisation that indigenous oil will never provide more than a small fraction of needs; all lead inexorably to one conclusion: gas. Back in the early 1980s, plans were mooted for piping indigenous gas from the Magellan Strait. But the intervening 1,000 miles of mountain, even before the fringes of population were reached, have always put paid to that scheme. A far better bet has always been to import gas from Bolivia or Argentina. The former is ruled out, partly by 1,000 miles of mountain and desert, and partly by Bolivia's claim on Chile's northern two provinces, ceded to the latter after the war of 1879, when Bolivia lost its outlet to the sea. Relations with Argentina have also been strained, this time over border disputes in the far south.

Happily, the return of democracy both in Chile and in Argentina has led to the quiet burial of age-old disputes. Now, after a rocky start, the two have become good trading partners, each having something to offer the other. The oil pipeline is the first fixed emblem of that. Now both sides are actively pursuing plans for a gasline, to run 1,207 km from Argentina's Neuquen fields right through to Santiago. The project was first kicked off seriously about five years ago but it was not until Argentina's oil and gas industry was finally brought fully into the private sector that plans could gell. For project finance of around $1.65 billion will have to be found, a sum that would only have exacerbated the debt situation of the old state firms.

The project falls into three main sections. First comes the transmission line from Neuquen. Tenneco Gas has been named technical operator for this, cur-

Pipelines carrying oil and gas to Chile contend not just with mountains but with the Argentine pampas and Chile's coastal plains

rently costed at $600 million. It would move 8 MMcmd of gas, with the main line running to Santiago. Branches to at least six other cities, notably Valparaiso and Concepcion, would follow. The next section involves the various distribution systems, for which British Gas has been chosen as technical operator. This is costed at $450 million and would serve 600,000 premises. But total investment is not needed at once, British Gas seeing the total cost of sections one and two being spread over 25 years. Clearly, the aim is to tackle one conurbation at a time, a job British Gas sees taking 10-15 years after initial gas flows. But the bulk of transmission-line costs will have to be up front, apart from whatever is needed for branch lines. And that poses the main problem.

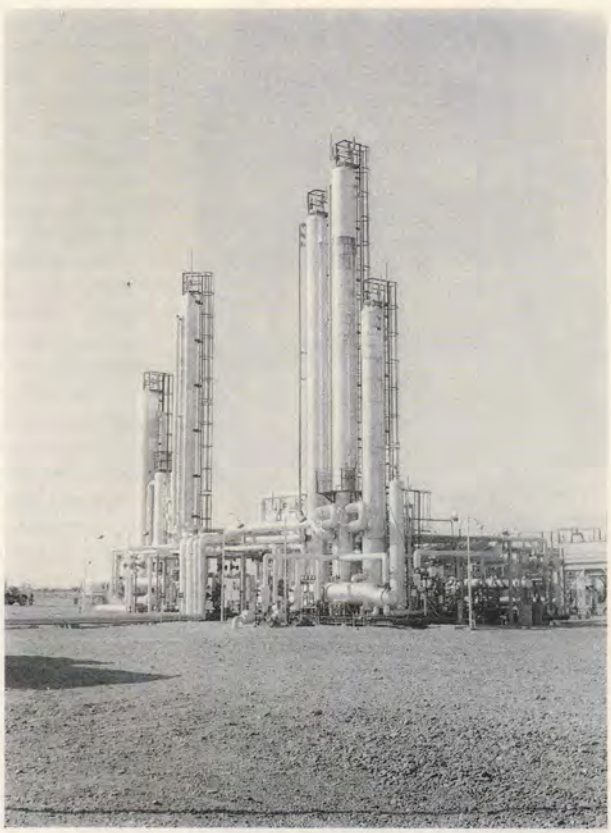
To justify the transmission-line investment, the various partners in the scheme have to show that it is viable more or less from the start. No financier is going to wait 10-15 years while Chilean households are hooked up one by one. To provide an immediate base load for the transmission line, the partners have proposed section three: the construction of three gas-fired power stations, rated at 700 MW in all and costing $600 million. These would take 45 percent of the pipeline's throughput. Another scheme, under which an early secure market would be nailed down, is for 5 percent of capacity to go as CNG fuel for buses in Santiago. Pollution there is said to be worse than anywhere else in Latin America, except Mexico City. Legislation on such matters is long out of date and, as soon as new rules are promulgated, a major switch to less polluting fuels is certain. But gas cannot be used unless it is available.

This chicken-and-egg situation urgently needs to be sorted out. Partners on the Chilean side have already formed Distribuidora Gas de Chile, currently owned by Enap, state electricity utility Chilectra Metropolitana and overseas interests represented by Snam, Italgas, Enagas and Catalana de Gas. A supply deal has been signed with an Argentine group comprising YPF, Astra, Bridas, Pluspetrol and Petrolera San Jorge (operating as Union Transitoria de Empresas). As already mentioned, technical operators have been appointed. But there is still discussion about how much equity should go to international firms. As long as this remains unsolved, financing the project cannot begin seriously. Even so, the various partners are optimistic that construction could begin towards the end of this year. Santiago would get its first gas late in 1997, though British Gas opines that a 1996 start-up date is possible.

Initially, the Argentine government did not want ex-state oil firm YPF to get involved other than as a supplier. Now, however, YPF is negotiating for a 10 percent stake in the transmission company, Transporte Gasoducto Transandino, at present owned by Chilectra and its partners. Currently, British Gas and Tenneco are conducting studies into the project, for completion this year. The aim then is to build up a wide mix of equity partners so that the system will not run at the whim of one major player.

Freeing up the industry

In this, the full-scale privatisation in Argentina will help. Now Chile is going down the same route, albeit more slowly. The existing oil line includes private-sector interests. The gas system will follow suit. Outside interests also now have a role to play in refining, while further downstream the private sector is dominant. Upstream, international companies have long played a part and continue to do so. Also indicative of the market-led pragmatism that is sweeping South America is the agreement reached 18 months ago for Chile and Bolivia to rehabilitate the 1956-built pipeline that links Arica on the Chilean coast to Siccha in Bolivia. This is being revamped to carry light products inland, with a reversible flow moving Bolivian crude and heavy fuels to the coast for export. That, too, could ease Chile's oil-supply costs and aid diversification. And international relations in the region have probably never been better. That in turn is attracting much-needed international investment in the industry.



When Chile's cities acquire gas later this decade, the source will be Argentina's giant Neuquen fields

'A triumph for modern design'

By Carol Reader

Acronyms are two a penny – one more to add to the mounting pile is RVI. We already have RVP – and RSI – so what is RVI? To most of us this means nothing at all but to Shell staff it has been on their lips, in their minds, on their desks, in their discussions, night and day, for a long time – years in fact.

The RVI design

RVI stands for Retail Visual Identity. For those outsiders not conversant with Shell-speak, this actually represents a total redesign of the group's international service station network, with the United Kingdom leading the transformation process. The Shell group of companies are planning to introduce this brand new RVI image wherever they operate. Because it therefore involves some 40,000 service stations in 100 countries worldwide, this modernisation scheme is costing a reported £500 million. RVI is also now coming to Europe, while Shell Australia and Shell Brasil too are busy with their conversion programmes.

The redesign, aimed at total standardisation throughout the world, covers every service station feature from colours and building layouts to lighting, materials and signage right down to the very smallest detail. The Shell group is seeking total standardisation, intending to convince planning authorities worldwide of the merits of its RVI designs.

A great deal of design work, testing and customer research in 17 countries, lasting three years, has preceded the launch. It is now planned that within 10 years every single station will have a standardised RVI appearance.

Nothing has been left to chance: the whole RVI package is specified in enormous detail in a 150-page design manual, developed with the help of design consultants, Sampson Tyrrell. This is supplemented by a technical and implementation manual and associated technical drawings. Shell claims that the whole programme is 'simple', so

Logotype and forecourt canopy

that local materials and techniques can be used where feasible.

The new style has already been acknowledged as an outstanding design concept and received praise from various quarters, including a commercial award for quality signage in the European Sign Design Society Awards. The RVI scheme also received special mention in the Award of Excellence to Shell UK by the Institute of Transport Management earlier this year.

While only launched by Shell UK last month, work on conversion and updating service stations to the new RVI design has been in progress in the United Kingdom since November last year. However, the sharp-eyed observer of the forecourt scene would have spotted a 'different' Shell station before that date – the first RVI service station in

Europe was opened at Battersea in London during 1992, while the whole project was still under development.

In the United Kingdom the redesign is part of a £350 million investment service station investment programme, now in hand. To date 120 out of a total of 2,300 service stations have been converted to the RVI specification in the United Kingdom, with more and more being converted all the time. However, the conversion includes more elements than just design. Considerations of safety, environmental factors, the creation of a friendly atmosphere have all been looked at and incorporated into the modernization. In addition, the company aimed at getting rid of what it calls the 'industrial' atmosphere on the forecourt.

A sample motorist on the motorway volunteered that the new colours presented a warmer, more welcoming environment to customers. This is exactly what the company set out to achieve. David Pirret, General Manager of Shell UK Retail, said, 'RVI is far more than a cosmetic change. It's a radical new presentation of traditional brand values to our customers...RVI and our major redevelopment programme are profoundly changing Shell service stations into quality retail outlets where customers can feel relaxed and comfortable about shopping.'

The UK conversion programme is expected to be completed within five years, with RVI being introduced when service stations are upgraded or built. Conversions elsewhere will be introduced and completed within 10 years.

'Modernism' is the theme throughout the huge RVI programme – there is no place for anything traditional or outmoded in the world of Shell. The RVI design, called a 'triumph of Modern design' by World Architecture , has indeed come a long way from the first petrol stations of 50 years ago.

THE MAIN FEATURES OF RVI ARE:

- **Architectural integration of the service station buildings**
- **A completely new signage system**
- **A new monolith**
- **A new shape for the fascia of the canopy**
- **New red and yellow colours**
- **Colour balancing**
- **New graphic design**
- **Softer lighting**
- **The Shell emblem will be displayed in three dimensions against a white background**
- **New 3D logotype of Shell name on canopy**

Before the RVI design

Horley service station after the redesign

In the early days

BOOK REVIEW

European Service Stations

By Anthony Barnett and Dean Bubley Price £280

Published by Financial Times Management Reports, 1994, 171 pp, £280, ISBN 1 85334 2149

This extremely useful study, published by the Financial Times Management Report series, is intended to give an overview of the most important trends and issues relating to the European petroleum retailing business.

The first chapter of the study discusses five key issues which dominate management consideration of the retail petroleum market throughout Europe: the importance of 'value added' services on forecourts, developments in station design and automation, the need for intensive marketing and promotional effort, the effects of hypermarkets selling fuel and the impact of environmental legislation. This chapter presents a concise and balanced overview of these issues though obviously not in great depth.

Chapters 2 and 3 overview the market structure and competitive environment and venture some forecasts for the future. The authors suggest that rationalisation of retail networks is largely complete in certain countries but that there are likely to be continuing programmes of rationalisation and outlet closure in other markets. The distinction is well made between the relatively mature markets of northern Europe, such as Germany and the United Kingdom, the less advanced markets of southern Europe and the emerging markets of Eastern Europe. Their forecasts of the closure of many small stations which cannot economically justify capital expenditures required by environmental legislation, of growing competition from hypermarkets in several countries and of continuing asset swaps between companies are all well argued and generally not contentious.

However, they do not consider, except by implication, the very much more radical rationalisation of the structure of the industry which some commentators foresee; perhaps in 10 years time there will only be two major companies preferring to market selectively in those countries where they have 'critical mass' or a specific supply or economic advantage (a policy recently pursued by BP and Mobil through asset swap deals.)

The final two chapters contain profiles of the retail petroleum market in each of the countries of Western Europe and some of the emerging markets of Eastern Europe and also profiles of 17 of the leading companies active in the market. These chapters contain a wealth of detail, much of which is not easily found elsewhere. Indeed, there will probably be many readers who will feel that the information in the 103 Tables contained within the study alone would justify its purchase. Also included is a Glossary and a rather brief listing of Sources and Useful Contacts, but no Index.

This study really serves two distinct purposes – as a concise and readable overview of trends in the retail petroleum market throughout Europe and as a valuable reference source of statistical information on that market. In both objectives it is largely successful. However the reviewer is left to ponder the fundamental question – is there a European Service Station market or do we in fact have a number of distinct national markets in Europe driven by different historical development and national culture? Reality is almost certainly somewhere between these two views: EC regulation and the current organisational culture of the oil industry leading towards convergence and uniformity across Europe, whilst the need to differentiate in the market and to provide what the national customer wants in consumer market tending towards continuing national variation.

P.E.J.

POSC: Creating benefits for the oil industry

By Jane Emmanuel, European POSC Co-ordinator, Hoskyns Group plc

In the current climate within the oil industry, with overcapacity and reduced oil prices, there is strong pressure to cut costs. In areas such as the North Sea, where many of the fields are in secondary or even tertiary phases of oil recovery, costs have to be kept as low as possible to make production viable. Smaller discoveries in more remote and hazardous areas and increasing environmental pressures are other factors which add to the cost of production and are driving the need for more co-operation between oil companies, all of which suggests a need for improved business processes for all concerned.

One initiative which sets out to improve information technology processes in the industry is 'POSC'. This is the acronym for the 'Petrotechnical Open Software Corporation'-a non profit-making organisation which was founded in 1990 by five major sponsors in the oil industry – Mobil, Elf, BP Exploration, Chevron and Texaco.

The corporation was set up with the prime purpose of defining, developing and delivering open systems standards for the upstream oil industry worldwide. POSC was created at a time when oil was selling at $17-18 a barrel and business was relatively buoyant. Now, cost-cutting is vital in the industry-which puts the focus on POSC's ability to create real business benefits. It is a vehicle to deliver cost reduction and sharper, more efficient business processes across the industry.

In seeking to create such standards, the oil companies are treading the same path as many other global industries. So what drove the main sponsors to invest $1million each a year for the first three years in POSC and why are the other 80 member companies of POSC contributing funds, resources and time to its development?

To answer the question, we should consider the role of computing in the oil industry. The oil companies handle vast amounts of data and each discipline within the industry, such as geology, geophysics and reservoir engineering has its own specific information requirements to access data and perform their tasks efficiently.

Most large businesses have a similar set of requirements-but when the amount of data generated in exploration and production is taken into account, the scale of the problem is revealed-a single well can generate terabytes of data.

If volume of data was the only major factor, this could be resolved by development of more user-friendly and more powerful computing systems. The core problem is, however, lack of compatibility of data between the various upstream geoscientific disciplines. Like many other large industries, the oil companies have developed individual proprietary IT systems to handle the specific needs of their various activities in exploration, drilling and production. This has created a situation where individual functions may operate efficiently, but their ability to share and cross-access data has been severely compromised.

Some typical comments from scientists and technicians suggest that 60-80 percent of time is wasted in chasing data and that 90 percent of time is spent in information processing, because data cannot always be found easily or trusted readily. Questions arise over the choice of correct data sets, why data has to be re-formatted or how various data sets can be pulled together.

For an individual company, the cost benefits provided by reduced timescales and more accurate, efficient and reliable data access can be substantial. However, when taking into account the increasing co-operation between oil companies in exploration and drilling, the search for industry standards becomes essential, as data has to be made usable within companies and between companies.

Enter POSC – the first collaborative effort by global oil companies to share knowledge, reduce migration risks and cost and encourage implementation of data and exchange specifications. A simple principle-but how is POSC going to achieve its objective of creating an industry-wide standard?

Firstly, collaboration is vital, not just between the oil companies, but with hardware and software vendors and IT consultants across the board. This needs the promotion of a key message to all existing and potential participants-that POSC is not simply a technical solution, but a means to improving business processes and reducing costs.

The promotion of the message is one of the fundamental tasks performed internationally by computer services company Cap Gemini Sogeti (CGS) and its UK and Irish arm, Hoskyns, who are handling the European co-ordination of the CGS POSC effort.

Jane Emmanuel, European POSC Co-ordinator for Hoskyns says, 'The industry has to be assured that this isn't fiction. Members are committed to the process but within all companies there is a need to drive home the message about the business benefits POSC can deliver. We also need to spread the word to other potential partners, whether they're already in the oil industry or if they can offer additional IT expertise and products.'

In this respect, the integration of different companies, vendors, equipment and personnel makes POSC a very special venture.

The story so far has involved POSC delivering a set of specifications, which, when combined, form a standard Software Integration Platform (SIP). Software vendors respond to this by providing software that meets these specifications. At the core of the specification is a detailed description of an integrated common data model, known as 'Epicentre'.

A two-phase Industry Pilot Project (IPP) was launched in January, independently of POSC, but with POSC's full support and assistance. The IPP is an oil company collaborative effort to share knowledge, reduce migration risk and cost and encourage the implementation of POSC specifications. A reference database using POSC specifications will be generated and licences will be available.

The pilot will take the typical processes of an exploration and production (E & P) company as a baseline measure and then demonstrate the benefits of integrated common data and access. The pilot will be governed by an advisory board of representatives from ARCO, BP, Elf Aquitaine, Mobil, Oryx, Repsol, Agip, Statoil and Shell, although participation is open to all oil companies willing to contribute resources and share experience.

The pilot will provide a cushion for vendors during the migration to POSC stan-

dards and will enable them to exchange lessons learned. It will also allow the industry to focus on the functionality of the software. Phase I of the pilot, already complete in POSC's offices in Houston and launched more recently in the London POSC office, is a learning phase in which the pilot team will use the SIP specifications and load E & P data such as drilling, geology and geophysics to the Epicentre, develop data loading techniques and evaluate the ability to access this data. Phase I in Houston concentrated on modelling 'infill drilling' whereas the chosen subject to be processed and modelled in London is 'prospect evaluation'. A graphics-based demonstration environment has been generated to show how POSC technology-based environments can streamline business processes and improve profitability. To illustrate the effectiveness of collaboration, the first phase accomplished three man-years of work in 90 days.

Phase II, already underway in Houston will involve software suppliers porting their applications to the testbed to demonstrate the commercial viability of their products in POSC-compliant environments.

- **Eliminating barriers to data access.**
- **Abolishing data chasing.**
- **Facilitating cross-discipline asset teams such as geologists and geophysicists.**
- **Promoting data sharing, within companies and between partners.**
- **Encouraging flexibility.**
- **Shortening decision-making times.**
- **Improving the immediacy and quality of decision making.**
- **Saving costs.**

Project management, facilitation, Epicentre training and project journalling is being provided by Hoskyns and CGS throughout the pilot in Houston and London.

Gerard Houard, European IPP Project Leader, seconded from ELF, says that indications from the pilot phase suggest POSC's intended benefits will be realised.

Tim Haynes, Director Technology, POSC (Europe) adds: 'Our objective is easy enough to understand, but achieving it will involve more collaboration between existing participants-and hopefully many new ones-during the development process. The industry needs the expertise of companies such as CGS and Hoskyns, not just for their understanding and experience of the global oil business, but to realise the concept of the benefits that POSC can bring, both internally and externally.'

Jane Emmanuel concludes, 'The creation of POSC standards and the migration to common open data systems obviously involves a great deal of technological input, but that is only one part of the process. Companies will also need to rethink the way they currently handle their overall business processes in the new environment, from the field to the boardroom. This in itself will be a considerable task in communication and training.'

Octane determination using light and mirrors?

By David Brown, Hartmann & Braun (UK) Ltd

For years refiners have been looking for a reliable on-line method to determine the octane value of their process streams. Accurate process information can help the refiner to optimise process yield and catalyst consumption while still delivering on-spec product. Annual payback to a refinery, with even a modest daily output, exceed $100,000.

A number of techniques have been tried on-line, including CFR engines, gas chromatographs and cool flame devices. These technologies have proved to be inadequate in their ability to provide fast, precise analysis without a significant amount of continued re-calibration and/or hardware maintenance. Therefore it has been nearly impossible for refiners to routinely receive enough high quality data for real time process optimisation.

Like many other large, international refiners, BP began investigating possible alternative technologies in the late 1980s. One approach involved using an analytical technique known as Near Infrared (NIR) Spectroscopy. In this approach, a correlation is developed between varying octane values for a given type of process stream and the corresponding changing wavelengths of NIR energy it absorbs. Changes in a stream's hydrocarbon mix affect the relative amounts of NIR energy absorbed in these regions. The NIR spectrum can detect the differences in composition and therefore octane value. There are small differences across this entire spectral region, showing that an Octane correlation is best determined using all available information.

Three-year project

The NIR project by BP lasted over three years and involved the collection of over 12,000 NIR spectra and their associated CFR engine RON and MON values. Within BP, seven refineries from Europe and Australia contributed to produce what is believed to be the world's largest and most diverse NIR spectral database for octane determination. The database was then used to develop correlations for measuring octane produced by a number of different types of process units as well as that of blended gasolines.

The collection of data from multiple refineries whose crude sources span the world is equally important as the number of spectra included, this data represents a wide range of processes, feedstocks and operating conditions. The resulting correlations or models cover a wider range of compositions and specifications than could be found at a single site. A calibration curve based on data from a single refinery shows the datapoints to be tightly

grouped at a few different octane values, as could be expected on a reasonably well optimised process. Alternatively, a multiple refinery database yields an almost continuous series of data points on which to develop a calibration curve. By employing data from many sites, the model will be less sensitive to varying operating conditions and may provide useful data during process upset conditions.

Early in the project life, it became apparent that if the models were to be easily transferable, great attention would have to be paid to the hardware used to collect the NIR spectra. NIR analysers that employed gratings were tried and abandoned because of their poor repeatability and poor instrument to instrument reproducibility. The BP researchers found, as many other groups have since, that they would have to use Fourier Transform Near Infra Red (FTNIR) analysers in order to build a transferable database.

Rather than separating the individual NIR wavelengths of infrared energy spatially, like a rainbow is separated into visible energy, and sequentially passing them through a sample, a FTNIR sends all NIR wavelengths through the sample simultaneously.

With a grating spectrometer, several mechanical devices must repeatedly work in perfect synchronisation to generate accurate and precise results. A FTNIR, however, employs a single moving part to generate a signal at the detector. This signal can be deconvoluted by a mathematical algorithm, known as the Fourier Transform, in a computer with a high degree of accuracy. The result of the transform is the determination of the light intensity at each NIR wavelength.

The Fourier Transform requires a modulated signal for deconvolution. In the Wishbone or interferometer, a modulated signal is produced by creating constructive and destructive interference between two wavefronts. This is analogous to two stones being dropped in a pond where the resulting ripples combine in certain places and cancel each other out in others. In the FTNIR, light from a NIR source is split into two wavefronts by a coated glass beamsplitter. Half of the energy is transmitted to one mirror, the other half is reflected to another mirror. As these mirrors swing back and forth, the energy that is recombined at the beamsplitter sometimes interferes constructively, at other times destructively. The resultant wavefront is passed through a sample cell and onto a detector. Collecting a spectrum is defined then as measuring the varying signal intensity across the range of motion of the interferometer. The output is called an interferogram, and this signal can be utilised by the Fourier Transform calculation.

To avoid errors caused by the mirror moving at a non-uniform rate due to vibration of other effects, a laser is used to track the position of the mirrors. This allows a continuous calibration of mirror position and is also used to calibrate the wavelength scale continuously.

Sampling

After satisfying the requirement for a consistent transparent analyser, attention was then turned to sampling. It was decided that a sampling technique would need to be chosen that required little or no characterisation from analyser to analyser. Further, since much of the database would be generated in the laboratory, as would further additions to the database, the technique would also have to be transferable from lab analyser to process analyser. For these reasons the decision was made to use extractive liquid sampling in the process units to bring a sample to a temperature controlled transmissions sample cell. The components of the extractive system are familiar to site maintenance technicians, uses proven technology and has several significant advantages over other techniques.

Using the extractive sampling technique the temperature of the sample can be controlled and the sample pressure monitored. The sample can be filtered and there are no spectral side effects due to vibration or humidity. Other samples can be collected for test and incorporated into the model at a later date. It is easy to introduce reference samples and cleaning agents to wash the sample cell. The addition of multiple streams is also a simple matter.

Installations

The first on-line installations of this hardware configuration were at BP sites in France and the United States. In the United States the goal was to produce a process analyser system to provide RON data for analysis of a semi-regen reformer unit. A specific performance goal was set that stated that the standard deviation between the FTNIR analyser and off-line CFR engines would be +/- 0.5 RON. The project team had studied the performance of off-line CFR engines within BP for a period of five years and determined that 0.5 RON was the real long term reproducibility that could be achieved. The analyser also had to maintain a minimum availability of 95 percent.

If the analyser successfully met the performance criteria, then it would provide sufficient high quality data to allow real time process optimisation of the unit; replacing an old cool flame device that was considered to be too maintenance intensive.

The installation of the analyser proved to be very straight forward. Installation, training, gathering statistical data for evaluation, and acceptance were completed within a month. The final statistics show that the FTNIR met the standard deviation criteria as measured on samples that were run on lab CFR engines.

FTNIR octane measurements must always be referenced to those values determined by the ASTM/IP standard test methods RON D2699/IP237 and MON D2700/IP236 using a CFR engine. ASTM/IP requirements for reproducibility of the CFR method are for RON 0.6-1.2 and for MON 0.9-1.2 octane units. Good performance can be achieved by careful maintenance, round robin comparative testing of samples and good operator training. When included in round robin testing, the Advance FTNIR has performed at least as well as the CFR engines. In fact, from FTNIR to FTNIR, results differ by only 0.1 octane unit, which can only be achieved by the very best operated CFR engines. Further, the FTNIR can do this at a fraction of the maintenance and installation costs of on-line engines.

Cost savings

In a refinery, a process must be run above the minimum specification in order to allow for process variation and still meet the minimum target octane value. The difference between the mean process octane value and the minimum acceptable specification is equal to the repeatability of the analytical technique used for monitoring. By using a more repeatable technique providing real time data the amount of octane give away can be reduced. This results in dramatic cost savings to the refiner. The potential payback for a given refinery can be easily estimated. If the FTNIR analyser is installed on a 50,000 bbl/day output unit and one octane unit is worth $0.2/bbl, the savings for reducing the Octane Giveaway by 0.1 unit works out at $1,000/day.

These estimates do not include any energy savings or extensions to catalyst life achievable due to the reduction in process severity or saving due to reduced reblending. The real benefits are therefore potentially higher with even a small refiner being able to realise savings in excess of $1 million/year.

The analyser implemented at the BP refinery in France is used to optimise the gasoline blender. The biases and standard deviation of the analyser when compared to CFR engines are acceptable. At another very large European refinery which buys and sells into several countries the comparison is well worth notice. The site's operating characteristics and reputation for a well run CFR engine facility make it a good site to monitor the performance of the FTNIR on blended gasoline.

The low standard deviation between the FTNIR analyser and results achieved on CFR engines run by an internationally recognised facility demonstrate the performance available using this technique. It should be added that leaded streams can be monitored with FTNIR but the analyser requires input for the amount of lead added to compensate for the octane contribution due to lead.

The maintenance efforts for the Advance FTNIR require little time from instrument technicians. The sample system requires only routing checks and the cleaning or replacement of filters.

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Established: 1985.

Users: Oil/gas operating companies and design contractors.

Applications: Thermohydraulic studies. Well/flowline system analysis. Well design. Pipeline network design. Gaslift design. Gas lift operation. PIPESIM simulator for multiphase flow in wells, flowlines, pipeline systems and networks. Also simulates gaslifted production systems for optimised planning, design and daily operation. Available on mainframe, workstations and PCs (Windows).

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Established: 1964.

Users: UK, European and international oil (both upstream and downstream) and gas companies.

Applications: Retailing, oil trading, business, process simplification, quality management, outsourcing, consultancy, network and database consultancy, systems development, systems integration and project management.

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Tel: 0565-650447.
Fax: 0565-650581.

Company Description: Linnhoff March provides process design services including the latest Pinch Technology techniques for improved heat exchange networks, reduction of energy/capital costs, increased capacity, emissions targeting, debottlenecking and increased operability. We develop new process design technology and assist companies to learn the latest techniques to become self-sufficient in the technology.

Established: 1984.

Users: All major processing industries.

Applications: Our range of services includes SuperTarget™ Pinch Technology software, training courses, project support and technology transfer.

Logica

Business Park 4, Randalls Way,
Leatherhead, Surrey KT22 7TW.
Tel: 071-637 9111.
Fax: 0372-374628.

Company Description: One of the world's leading independent consultancy software and systems integration companies with offices in 14 countries employing over 3,400 staff. Oil industry products and services are supported worldwide from dedicated business units in Aberdeen, Leatherhead and Rotterdam.

Established: 1969

Users: International oil companies and gas companies.

Applications: Operations support applications for exploration, production, transportation, refining, processing, distribution and retailing.

Palisade Corporation,
31 Decker Road,
Newfield, New York USA
Tel: 607-277 8000.
Fax: 607-277 8001.

Prentice Training Company, Inc.
PO Box 30228,
Lafayette, LA
USA 70593-0228.

Topas (UK) Ltd.

Lacemaker House,
Chapel Street,
Marlow,
Bucks SL7 3HQ.
Tel: 0626-475111.
Fax: 0628-474883.

Company Description: Topas are leaders in the supply of software solutions and associated services for the international downstream oil and gas industries and have a sound reputation for understanding the requirements of the business and providing solutions that work.

Services include package software solutions, bespoke development, technical services including systems integration with TAS, OTC and other systems, consultancy and training services.

Established: 1977.

Users: International oil and gas companies, Affiliates, Distributors, Oil Blenders and Traders.

Applications: Marketing and Distribution, International Payment Card systems, Maintenance Management, Lubes Blending, Stock and Depot Management, Aviation Refuelling, Retail Agreements, Central Control for TAS and OTC systems, and Oil and Gas Trading Systems.

SOFTWARE

CAPDES
Corrocean Limited
430 Clifton Road,
Aberdeen, Scotland AB2 2ES
Tel: 0224-662180.
Fax: 0224-662070.

Drilling Expert System II,
Prentice Training Company,
PO Box 03228, Lafayette, LA,
USA 70953-0228.

Interfacet,
Facet Ltd.,
18 Upper Marlborough Road,
St Albans, Herts AL1 3NT.
Tel: 0727-850830.
Fax: 081-784 5700.

Lightship,
Pilot Software,
Pilothouse, Abbey Green,
Chertsey, Surrey KT16 8RF.
Tel: 0932-569944.
Fax: 0932-561928.

LUSAS,
FEA Limited,
Forge House, 66 High Street,
Kingston-Upon-Thames,
Surrey KT1 1HN.
Tel: 081-541 1999.
Fax: 081-549 9399.

FACTS - Futures & Commodities Trading System

Topas (UK) Ltd.,
Lacemaker House,
Chapel Street,
Marlow,
Bucks SL7 3HQ.
Tel: 0626-475111.
Fax: 0628-474883.

Software Description: FACTS is an advanced on-line oil and gas trading administration system providing unique facilities for any company involved in Derivatives and Commodities trading. It is a modular system, supporting all aspects of Futures and Options Trading for both exchange-cleared and OTC products. The modules are FACTSFUTURES – Derivatives, FACTS PHYSICALS – Physical Trading and FACTS FINESSE – Financial Systems.

Hardware: IBM AS/400.

Users: Any petroleum company or organisation operating in Futures and Options Trading.

INFORMATION TECHNOLOGY SURVEY

MAPS

Logica,
2 Queen's Gardens,
Aberdeen AB1 6YD.
Tel: 0224-643575.
Fax: 0224-632089.

Software Description: MAPS is a system which provides fast and efficient planning and recording of personnel movements to and within offshore installations. Features include flight planning and administration, personnel on board lists, personnel training validation and safety certification status checks.

Hardware: Unix or VMS platforms with Oracle data management system.

Users: Offshore oil & gas production and exploration operators.

MATLAB,
Rapid Data Ltd.,
Crescent House,Crescent Road,
Worthing, West Sussex BN11 5RW.
Tel: 0903-821266.
Fax: 0903-820762.

Octane 2000 Epos System,
AT & T,
206 Marylebone Road,
London NW1 6LY.
Tel: 071-725 8609.
Fax: 071-725 8224.

PACE

Marex Technology Ltd.,
Cowes, Isle of Wight PO31 7DA.
Tel: 0983-296011.
Fax: 0983-291776.

Software Description: PACE configurable data acquisition and processing software, specially for offshore environmental monitoring applications. Meets regulatory requirements and contains features for long-term unattended use. Interfaces to many sensors and measurement sub-systems, plus network and modem links for data transmission and system maintenance.

Hardware: Any PC of suitable spec with unix/xenix support.

Users: All major oil companies and offshore operators.

PD-PLUS,
Deerhaven Tech. Soft,
7 Shady Lane Drive,
Burlington, MA 01803.
Tel: 617-229-2541.
Fax: 617-229-2541.

Petrol Link-Host Software,
AT & T,
206 Marylebone Road,
London NW1 6LY
Tel: 071-725 8609
Fax: 071-725 8224.

PM3

Logica,
2 Queen's Gardens,
Aberdeen, Scotland AB1 6YD.
Tel: 0224-643575.
Fax: 0224-632089.

Software Description: PM^3 is an integrated purchasing, maintenance and materials system for the offshore oil industry. It quickly and accurately records, schedules and processes information on goods procured, materials movements and maintenance activities supporting offshore plant.

Hardware: Unix or VMS platforms with Oracle data management system.

Users: Offshore oil & gas exploration and production operators.

PPMS

Logica,
Business Park,
4 Randalls Way,
Leatherhead, Surrey KT22 7TW.
Tel: 071-637 911.
Fax: 0372-374628.

Software Description: PPMS integrates data from the production units making up a petrochemical plant complex and provides a comprehensive source of information for business and operational management. It allows users to enquire quickly and easily on all aspects of plant management.

Hardware: Unix or VMS platforms with Oracle data management system.

Users: Refinery and chemical plant managers.

PRODIS

Logica,
2 Queen's Gardens,
Aberdeen AB1 6YD
Scotland.
Tel: 0224-643575.
Fax: 0224-632089.

Software Description: PRODIS is a production reporting system that analyses and reports on the production of oil, gas and condensates from wells, monitoring reservoir performace and providing the production information required by operators, partners and government.

Hardware: Unix or VMS platforms with Oracle data management system.

Users: Oil and gas production operators and partners.

INFORMATION TECHNOLOGY SURVEY

PROMACE

Marex Technology Ltd.,
Cowes,
Isle of Wight PO31 7DA.
Tel: 0983-296011.
Fax: 0983-291776.

Software Description: PROMACE process management and control software. Distributed architecture using industrial standard (Unix operating system, X-Windows) in a point and click environment, suitable for batch and continuous processes, with extensive range of gateways to all the main PLC's and DCS equipments. Supplied worldwide as turnkey solutions or licence only.

Hardware: IBM RISC 6000 H-P 9000 series DEC OSF-1.

Users: Shell Enterprise, Chevron, Saudi Aramco, Courtaulds, Unichema, BP and other multinationals.

QSE,
51 Broad Street,
Chipping Sodbury,
Bristol BS17 6AD.
Tel: 0454-319104/323955.
Fax: 0454-322685.

SuperTarget™

Linhoff March Ltd., Tabley Court,
Moss Lane, Over Tabley,
Knutsford, Cheshire WA16 0PL.
Tel: 0565-650447.
Fax: 0565-650581.

Software Description: State-of-the-art software for professional users of Pinch Technology. It was specified by engineers and embodies the experience of several hundred project applications. Current features include: Basic Pinch Technology, Exergy, Total Site Optimisation, Heat Exchange Network Design, New & Retrofit Design and Column Targeting & Design, Capital /Energy tradeoffs.

Hardware: IBM Compatible 386/486 PC computer with MSDOS 3.3 or higher.

Users: All major processing industries plus academic institutions.

Teradata-Decision Support,
AT & T,
206 Marylebone Road,
London NW1 6LY
Tel: 071-725 8609
Fax: 071-725 8224.

TSWEET/PROSIM,
Bryan Research & Engr.,
P O Box 3403,
Bryan TX 77805, U.S.
Tel: 409-776-5220.
Fax: 409-776-4818.

TOPAS Marketing & Distribution Systems

Topas (UK) Ltd.,
Lacemaker House,
Chapel Street,
Marlow,
Bucks SL7 3HQ.
Tel: 0628-475111.
Fax: 0628-474883.

Software Description: The TOPAS family of international marketing and distribution systems provide a choice of solutions for all types of oil, gas and chemical industry businesses.

Depending on the solution chosen, modules available include bulk/package sales order processing, planning and distribution, on-line pricing and invoicing, stock management and purchasing, vehicle scheduling, manufacturing and blending, gas management and accounts receivable.

Package Solutions: TOPAS, TOP/AS, MICROTOPAS, TOPAS2, TOPAS2+.

Hardware: Open Systems, PC/networks, IBM AS/400.

Users: Oil and Gas Majors, Affiliates, Distributors.

TOP/MASTER

Topas (UK) Ltd.,
Lacemaker House,
Chapel Street,
Marlow,
Bucks SL7 3HQ.
Tel: 0626-475111.
Fax: 0628-474883.

Software Description: A centralised Maintenance Management system for managing and tracking maintenance activity at all oil/gas industry locations, TOP/MASTER provides the total solution for central computerised management and control of maintenance at multiple sites. It encompasses preventative/predictive maintenance, defect recording, monitoring, updating and distribution of standard procedures/work instructions and tracking of all activities across sites.

Hardware: Any OPEN system running under ORACLE.

Users: All oil/gas companies with plants/terminals/refineries/platforms/buildings to maintain.

Wellcat,
Enertech,
5847 San Felipe,
Suite 1000,
Houston, TX 77057, USA.
Tel: 713-789-0055.
Fax: 713-789-7633.

INSTITUTE NEWS

AROUND THE BRANCHES

London
9 Jun: 'Annual Visit – Stansted Airport'.

Yorkshire Branch
15 Jun: 'Golf Tournament'

Southern Branch
21 Jun: 'Field Visit to BP Directional Drilling – Wytch Farm
19 Jul: 'Review of the State of the Art Technology to make high octane components.'

DEATHS

We regret to annouce the deaths of the following members:-

	Born
E H Ettinger, Finchley, London	1903
J L Rampton Sir, Tonbridge, Kent	1920
W A Russell, Fareham, Hants	1917
Major W H Vivian, Fowey, Cornwall	1908

IP THE INSTITUTE OF PETROLEUM

Thursday 16 June 1994
5.00 pm for 5.30 pm – 7.00 pm

'West European Refining in a Global Context – Is a Decade of Restructuring About to Pay Off?

By Chris Brown, *Senior Consultant, Chem Systems Ltd*

The West European refining industry has for several years suffered from over-capacity and hence poor margins. This talk will analyse how much this reflects a global problem and whether the major restructuring it has undertaken now sets the foundation for better years ahead.

Organised by the Energy Economics Discussion Group

This meeting will be held at the Institute of Petroleum.
Please tell Pauline Ashby if you plan to attend.

Tel: 071 467 7106 Fax: 071 255 1472

UK Deliveries into Consumption (tonnes)

Products	*†Mar 1993*	**Mar 1994*	*†Jan-Mar 1993*	**Jan-Mar 1994*	*% Change*
Naphtha/LDF	334,416.0	235,398.0	888,539.0	785,441.0	-12
ATF – Kerosene	495,339.0	539,696.0	1,441,597.0	1,529,857.0	6
Petrol	2,142,094.0	2,025,391.0	5,761,421.0	5,482,386.0	-5
of which unleaded	1,086,201.0	1,134,578.0	2,903,075.0	3,057,207.0	5
of which Super unleaded	133,780.0	126,358.0	355,506.0	338,378.0	-5
Premium unleaded	952,421.0	1,008,220.0	2,547,569.0	2,718,829.0	7
Burning Oil	288,607.0	457,709.0	835,940.0	1,106,035.0	32
Derv Fuel	1,079,571.0	1,151,725.0	2,866,588.0	3,037,419.0	6
Gas/Diesel Oil	819,063.0	774,308.0	2,245,402.0	2,177,226.0	-3
Fuel Oil	894,684.0	841,400.0	2,822,740.0	2,567,280.0	-9
Lubricating Oil	73,274.0	70,033.0	203,259.0	193,101.0	-5
Other Products	692,444.0	749,278.0	1,985,148.0	1,914,434.0	-4
Total above	**6,819,492.0**	**6,844,938.0**	**19,050,634.0**	**18,793,179.0**	**-1**
Refinery Consumption	511,903.0	500,701.0	1,551,052.0	1,545,927.0	0
Total all products	**7,331,395.0**	**7,345,639.0**	**20,601,686.0**	**20,339,106.0**	**-1**
*† Revised with adjustments *preliminary*					

INSTITUTE NEWS

NEW FELLOWS

Mr Frans H Said
Mr Said graduated with a degree in Business Administration. He is actively involved within the IP as a member of Council and chairman and founder of the Malta Branch. Mr Said has gained a wide experience in the industry with a knowledge in technical, materials, costs and organisational matters. Currently, he is Managing Director of Medserv Limited.

Mr H K Michael Lugg
Throughout his engineering career, Mr Lugg has played a significant role in the development of retail engineering standards in the United Kingdom. His knowledge of the petroleum industry is extensive and he has represented the IP in matters relating to service station. An active member of the Marketing Committee Panel A (Doc-4-A) from 1971 to 1992, he is now chairman of APEA. He is currently a consultant to the retail petroleum industry and a member of the HSE working party for revision of HS (G)41.

Mr Keith A Harrison
Throughout his career Mr Harrison has been closely involved with service station construction for Total Oil Great Britain Limited and has recently obtained his Fellowship of the Chartered Institute of Building. An active member of the IP, he is involved in the CEN Standard for Separators and is currently preparing the draft of Part 2 of that standard in conjunction with the Doc-4-A Panel - Service Stations. He is also part of the discussion group dealing with a code for underground pipes.

Mr Jamie A J Thompson
During his many years involved with petroleum licensing, Mr Thompson has had a considerable influence on the improvements made in the safety and operations of service stations nationwide. His understanding of the storage and handling of petroleum has led to the acceptance in London of new materials and techniques at service stations which have since been adopted in other parts of the country to the benefit of the industry. As Editor of The Bulletin he has provided a forum for information and discussion of a wide range of petroleum related topics.

Possible formation of IT Discussion Group

IP management has been considering the formation of an Information Technology discussion group and trying to assess members' interest is this project. A notice was published in the January issue of *Petroleum Review*, asking those interested to send their names to the IP.

The response to this proposal has not been encouraging – only a small number of members showed an interest. The IP is therefore not going to proceed with its plans to form an IT group at the present time.

NEW MEMBERS

Mr R S Adams, Chase Manhattan Bank N.A., Woolgate House, Coleman Street, London EC2P 2HD
Dr T Agbabi, Merpro Process Technologies Limited, Court Lodge, 105 High Street, Portishead, Bristol BS20 9PT
Miss M Barbanti, Unione Petrolifera, Via Giorgione, No 129, Rome, Italy
Mr W N Barnes, Hi-Lo Flare Systems & Services, Vanguard Road, Gapton Hall Industrial Estate, Great Yarmouth, Norfolk NR31 0NT
Mr A S Barnett, Datamonitor, 106 Baker Street, London W1M 1LA
Mr J C Beveridge, 34 Castle Road, Stirling, Falkirk FK9 5SO
Mr J P Biddy, Burmah Petroleum Fuels Limited, Burmah Castrol House, Pipers Way, Swindon, Wiltshire SN3 1RE
Mrs M L Bozdan, Food Hygiene Services, Barley House, 7 Barley Close, Sibford Gower, Oxon OX15 5RZ
Mr M M Bryce, 2 Gorham Rise, Broughton Astley, Leicester LE9 6QR
Mr A M Camps, Adlers Chartered Surveyors, 85 Wimpole Street, London W1M 8AJ
Mr N A Challis, Flat 3, 173A Cavendish Road, Clapham, London SW12 0BW
Captain C T Chu, 5/F, Tung Hip Commercial Building, 244-252 Des Voeux, Road C, Hong Kong
Mr G C Clift, 9 Woodrow Park, Grimsby, South Humberside DN33 2EF
Mr S Corney, Morgan Grenfell & Company Limited, 23 Great Winchester Street, London EC2P 2AX
Mr J C Creel, Cawley, Gillespie & Associates, 63 Duke Street, London W1M 5DH
Mr R J El Bahou, Cooperative Insurance Consultancy Company Limited, PO Box 17691, Jeddah 21494, Saudi Arabia
Miss L J Ferguson, 1 Highbury Hill, Islington, London N5 1SU
Mr S A Gomes, 50 Sylvia Avenue, Hatch End, Pinner, Middlesex HA5 4QE
Mr P A Grinyer, 9 Euclid Avenue, Harrogate, North Yorkshire HG1 2BD
Mr J Gunn, c/o O.T.S., Adco Asab Camp, Adco, PO Box 270, Abu Dhabi United Arab Emirates
Mr P J Guy, 12 Cedar Close, Market Deeping, Peterborough, Lincolnshire PE6 8BD
Major G W Harris, 14 Allan Road, Killearn, Glasgow G63 9QE
Mr J A Hastie, 29 Woodhall Drive, Waltham, Grimsby, South Humberside DN37 0UW
Mr E Holland, 18 Charlecote Drive, Wollaton, Nottingham NG8 2SB
Mr R I Howie, 3 Mosedale, Moreton-in-Marsh, Gloucestershire GL56 0HP
Mr T Hoy, Skytebanen 8, 4800 Arendal, Norway
Miss V Jamnezhad, 113 Atherstone Court, Lord Hills Road, London W2 6PF
Mr D Kurtz, Marketline, Swiss Cottage House, 9-13 Swiss Terrace, London NW6 4RR
Mr D Lonergan, Cornel Associates Limited, 6 Providence House, Providence Place, London N1 0NT
Mr D Maxwell, Maxwell Group (NI), 25 Gilford Road, Portadown, Craigavon, County Armagh, Northern Ireland BT63 5EF
Mr J McLaughlin, 207 Westboulevard, Quinton, Birmingham B32 2DE
Mr M A Newton, 40 Elms Drive, Kirkella, North Humberside HU12 7QJ
Prof N Quirke, Biosym, 20 rue Jean Rostand, 91893, Orsay Cedex, France
Mr A Rezik, 74 Cholmley Gardens, Fortune Green Road, London NW6 1UL
Mr B Sayers, 26 Hurworth Road, Billingham, Cleveland TS23 3LU
Mr R H Seymour, Northern Hay, Gayhurst, Newport Pagnell, Bucks MK16 8LG
Mr M L J Shepherdson, PA Consulting Group, Hobart House, 80 Hanover Street, Edinburgh EH2 1EL
Mr H Stoelting, Tryco AG, Hinterbergstrasse 26, 6330 Cham, Switzerland
Mr A Swaid, Octillion Inc, 32 Manor House Drive, London NW6 7DT
Mr A F M Tan, Robert Fleming & Company Limited, 25 Copthall Avenue, London EC2R 7DR
Mr D Thurston, Caplin Cybernetics, Poplar Business Park, 10 Prestons Road, London E14 9RL
Mr A Vallance, East Croft Lodge, Hesketh Crescent, Old Town, Swindon, Wilts SN3 1RY
Mr A Vassallo, Primavera, St James Street, Siggiewi, QRM 13, Malta
Mr A C Vickers, Shell UK Limited, Shell-Mex House, Strand, London WC2R 0DX
Mr D G Waugh, 4 Lady Jane Gate, Bothwell, Glasgow, Lanarkshire G71 8BW
Mr B V Wright, CFG Site Services Limited, Valley Road, Cinderford, Gloucester GL14 2NY
Mr J A Wright, Merrill Lynch, 25 Ropemaker Street, London EC2Y 9LY
Mr P K Wright, Maple Cottage, 124 High Street, Riseley, Bedfordshire MK44 1DF

STUDENT

Mr T I O Shodipo, 155 Whitechurch Road, Heath, CARDIFF CF4 3JR

Hand-held computer for hostile environments

The PC/3040V hand-held field PC has been developed specifically for hostile applications. Its combination of field-proven Micro Palm design and state-of-the-art PC technology makes it suitable for many tasks: from inventories and materials management to oilfield applications.

Two PCMCIA slots provide addressing for 133MB data storage as well as the interface to other PCMCIA format devices like modems.

According to President of Micro Palm, Vel Casler, 'For the first time ever, a truly rugged hand-held computer can display 40 columns by 25 lines, which is one-half of a normal PC screen, and display the other half with the push of one key, thereby giving full screen visibility'.

With a full implementation of the industry-standard MS-DOS 5.0 operating system, a 16MHz NEC V30 processor, 1MB system RAM and 5MB on-board RA disk, the user can develop software in any common PC programming environment.

Shock-proof and waterproof, the computer will also work in extreme temperatures.

Fully-compatible field PC

First coiled tubing ESP for North Sea

A double first has been achieved by Aberdeen-based Centrilift with the signing of their latest order for a revolutionary coiled tubing Electrical Submersible Pump (ESP) system.

Destined for the Shell/Esso Auk platform, located in the central North Sea, this will be the first installed in this field and also the first downhole ESP system purchased by the Central Fields Business Unit of Shell UK Exploration and Production.

Conditions in this mature field, with extremely deviated wells at 72° from vertical and a yield that is high in water content, necessitated a different approach. Before awarding the contract, Shell carried out an extensive evaluation of the system and compared it with a cable deployed ESP system.

'The coiled tubing system proved to be the answer,' according to Centrilift. 'While still fully compatible with existing ESP equipment it is, unlike the cable deployed option, run successfully into highly deviated wells with minimal well head modifications.'

The coiled tubing system has been developed and designed to be installed with or without the use of a drilling rig. Where a drilling rig is not used, operational savings of up to 40 percent are expected.

Further advantages of the system are said to be lower installation costs, the ability to run the same standard of rigorous completion as used in the North Sea today, a wide range of operational features and benefits, substantial reductions in the number of operational personnel usually associated with ESP installations and consequent savings in all the additional back-up services, living accommodation and so forth.

New release for R/3 software

SAP UK has announced the availability of Release 2.1 of its R/3 client/server applications software.

The new release is said to provide additional functionality for manufacturing, plant maintenance and quality and logistics applications for forecasting, planning and the total management of the manufacturing environment. It also provides improved purchasing and inventory management and greater facilities for generating project system data.

In addition, the new software has an enhanced graphical user interface (GUI) to improve user-friendliness, and enhanced application integration facilities to improve workflow management in all corporate processes, closing the gap between individual processing operations and overall business management.

Leading oil companies, including Mobil, Shell and Total, and 10 of the top 12 chemical companies worldwide, including DuPont, Hoechst, BASF and ICI, currently use SAP's business application software.

According to managing director of SAP UK, Petra Frenzel, the 2.1 meets customer needs for an integrated client/server manufacturing and logistics solution.

Don't get your lines crossed

On 16 April 1995 most UK telephone numbers will change. An extra '1' will be added after the initial '0', so for example 071 becomes 0171, 0702 becomes 01702, etc. International codes will also change, from 010 to 00, bringing the United Kingdom into line with the rest of Europe.

According to BT, four out of five companies have taken no action to prepare for phONEday so CMG has launched a new processing service designed to make the updating process as simple as possible.

The company is able to accept a file of telephone numbers for processing in almost any format – diskette, cartridge, reel, tape, Compuserve, Internet Transfer, IBM Information Exchange and even as printed information which can be electronically scanned. Telephone numbers are converted and returned on the same media.

In addition, the service offered will data cleanse existing information – for example, numbers which have not been amended previously when codes changed or local numbers which have been inputted without an STD code.

European-style petrol pumps

Wayne Autocourt's European-style 'Pentland' series of petrol pumps introduces a number of enhancements for easier handling, flexibility and tidier forecourts.

Notable features include the use of retractable hoses and the facility to serve diesel and petrol from the same pump installation, giving greater flexibility in forecourt layout. The pumps are available in two, four, six or eight-hose configurations.

Other new products include an integrated payment terminal for charge cards which increases both throughput and customer convenience.

Wayne Autocourt's 'Pentland' series

Alarm monitoring system for general and safety-critical functions

Exxon Chemical's Fawley plant near Southampton has been supplied with a new Rochester 90 alarm monitoring system to handle both general and safety-critical alarm functions.

'Our company policy is to consider plant safety our primary concern,' explained Nigel Bushrod, Exxon Chemical Instrument Engineer. 'As part of that concern, we decided that our new distributed alarm monitoring system should have a 100 percent redundancy specification built into it as a basic requirement.'

Previously, the control of four production areas had been via local control rooms, each with its own annunciator system but control is now being centralised with investment in a new Integrated Control Centre.

The four areas are covered by nine operator workstations, each with its own networked computer and VDU. The VDUs are suspended in place from the ceiling, each with its own custom overview and group displays.

The System 90 software governing the system was developed specially by Rochester to Exxon Chemical's own display and function specifications. Facilities include the constant comparison of one database against another to detect any possible 'compare errors' and a 10 millisecond event log which is downloaded onto a floppy disk every month for archiving.

Exxon's new alarm monitoring system has 100 percent redundancy

'An important feature of this design is that the safety critical alarms have their own independent lamp displays hard wired back to the Rochester MPAS 90 units in the new Operations Centre,' said Nigel Bushrod. 'Even if we lost the whole computer interface, we would still receive safety-critical alarms.'

Legislative database for the offshore industry

OILRIG, the offshore legislation database in Microsoft Windows™ format, is now available from the Offshore Certification Bureau for installation to a PC or network.

OILRIG is an acronym for Offshore Industries Legislation, Information, Regulations and Guidance and has been designed specifically for the offshore oil and gas industry. It offers a comprehensive collation of statutory and non-statutory legislation and guidance. The text of Acts of Parliament and Statutory Instruments has been 'legally audited' to show the most current version, whilst retaining the original text in special highlights.

The database also contains many other areas of interest to the industry, for example relevant EC directives, a comprehensive list of official organisations, a magazine section and other non-legislative information to keep subscribers up to date with current affairs.

A working tool, the database can be personalised by creating a 'shadow file' where the users can make their own annotations by placing notes, links and highlights without corruption of the original database.

It can be either installed to a notebook, stand-alone PC or networked and is available on an annual subscription which includes quarterly updating, software support and a 'hot-line' for technical queries.

PC-linked fuel monitor

The new 95FX fuelmonitor is now available from fuel dispenser manufacturer, Balvin.

This latest product can control up to eight pumps and operates with a link to a PC. The PC provides the user with instantly and easily programmable site configurations to accommodate features such as mileage entries, fuel limits, cost limits and other specific functions.

According to the manufacturer, the versatility and performance of the monitor is above that of a pump island card terminal but a third of its cost.

Virtual reality 'shrink-wrapped'

Superscape VR produces virtual reality software, including the VRT 'shrink-wrapped', which is designed to run on 486 and Pentium PCs, using the standard mouse control to interact with the computer-generated virtual worlds.

Virtual reality (VR) is a medium that provides participative three-dimensional visualisation, simulation and experience of virtual worlds. Unlike other mediums, such as interactive video, VR empowers the user to make things happen within the virtual environment, including assigning dynamics and characteristics to individual objects and then experiencing the effects of these actions.

As a training tool, it provides an interactive means of teaching staff how to use complex pieces of equipment. For example, full training can be carried out for a new piece of equipment, prior to its arrival on the forecourt. No time has to be allocated for training purposes and the staff learn how to use the equipment in complete safety.

VR is increasingly being used for space planning and design purposes too, as a means of visualising buildings before they are constructed.

Fuelbank bunkering system

The Triscan Fuelbank system is said to combine low-cost technology with a high degree of flexibility.

PC-based, it is designed as a convenient, cost-effective way for the fleet operator to obtain fuel on the road and for the site operator to increase revenue from capitally-intensive investment of pumps, tanks and staff.

Carrying full weights and measures with a range of pumps, the equipment offers a full bunkering service, including acceptance of Key fuels, PCS and in-house cards, or can be configured to control an in-house fleet only.

The Triscan system in use

Combination car wash

Kleindienst claims its new Combi Touchless is the first multi-programme car wash on the UK market to offer the choice of either brush or brushless washing within the space of a normal wash bay.

A menu of up to six programmes is available using the brush-wash facility with a seventh touchless wash cycle as a top-of-the-range option. Normally both top programmes are similarly priced to give motorists a straightforward choice.

Integrated drying on the touchless wash eliminates the need for expensive reverse osmosis (RO) equipment to eliminate spotting. This facility also allows up to 95 percent of water to be recycled in place of the usual 75 percent with RO treatment. It also means much less space is needed in the equipment room.

Seven-programme brush/touchless vehicle wash

'No downtime' tank testing

A video outlining the benefits of a new system for testing underground storage tanks without downtime is now available on loan free of charge from environmental specialists Geotechnical Instruments of Leamington Spa, the UK licensees of Tracer Research Corporation of Tucson, Arizona.

The video shows how Tracer's system can be used to test simultaneously all parts of an underground storage and delivery system including pipelines, 'providing an unambiguous, absolute result that is not affected by temperature, density and vapour pressure of tank contents'. Tests can be conducted at anytime regardless of product level. If leaks are discovered, they may be traced to within a few feet without excavation.

The 'Tracer Tight' system allows tanks to be tested full, partially full or even empty.

'No downtime' tank testing explained on free video

Security in under a second

Repsol SA has installed ATC Fortress rising security screens at selected sites in order to afford staff 'ultimate security'.

The specialist security system from Air Tube Conveyors has been designed to provide the highest levels of protection against violence or armed raids, in less than one second.

It is fully contained within the counter, maintaining a conducive customer communication point. Vertical panels are raised by pneumatic cylinders once the system is activated by the individual under threat.

When fully raised – which takes just 0.5 seconds – the screen provides a weapon resistance to 2,100mm above floor level, and 100 percent G2 rated ballistic bullet-resistance.

Wet stock control for all

Two years ago, Veeder-Root launched the multi-functional and upgradeable tank gauge, TLS-350R. The company, which is one of the leading firms in wet stock reconciliation and environmental protection, has now developed new system features and enhancements, all of which can be added to existing TLS-350R models.

Its latest addition to the range is the TLS 300, a more cost-effective tank gauge suited to filling stations with less demanding requirements. However, when coupled with the TLS AutoCal – a recently-launched, stand-alone tank calibration unit available on a rental basis – this offers static leak detection, automatic tank calibration alongside a wet stock management system.

Other new products include the new version of the Driver Controlled Delivery system, which is fully compatible with all tank gauges, and the new DCD 350, which maximises the 'intelligence' of the TLS 350R to provide a combined tank gauge and driver-controlled delivery system offering cost-effective wet stock control from delivery to dispensing.

The company claims its new service guarantee demonstrates its full commitment to after-sales support.

CONTACTS

Micro Palm Computers	0101-813 530 0128
SAP (UK)	081-893 2893
Centrilift	0224 772233
CMG	071-976 0066
Wayne Autocourt	0875 822500
Rochester Instrument Systems	0322 287500
Offshore Certification Bureau	071-620 0802
Triscan	0254 682111
Balvin	081-879 1171
Superscape VR	0734 810077
Kleindienst (UK)	081-574 4404
Geotechnical Instruments	0926 338111
Veeder Root	081-392 1355
Air Tube Conveyors	021-544 6666

FORTHCOMING EVENTS

June

6th-7th
Prague, Czech Republic: '1994 Central/East European Gas Conference'. Details: Overview Conferences, 82 Rivington Street, London EC2A 3AY.
Tel: (071) 613 0087.
Fax: (071) 613 0094.

6th-8th
Cranfield, UK: 'Multiphase Flow in Pipes'. Details: Mrs Tracey Wheeler, Course Organiser – Multiphase Flow, BHR Group Ltd, Cranfield, Bedford MK43 0AJ.
Tel: (0234) 750422
Fax: (0234) 750074

7th-8th
London: 'Negotiating Gas Contracts'. Details: IIR Limited: Industrial Division, 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD.
Tel: (071) 412 0141.
Fax: (071) 412 0145.

7th-8th
Berlin: 'Heavy Oil Technologies in a Wider Europe'. Details GOPA–Consultants, Energy Division, Postfach 1541, D–61285 Bad Homburg, Germany.
Tel: +49 6172 930-204
Fax: +49 6172 35046.

7th-9th
Birmingham: 'Forecourt Marketing and Equipment Show'. Details: Blenheim Events, Blenheim House, 630 Chiswick High Rd, London W4 5BG.
Tel: (081) 742 2828.
Fax: (081) 994 9735.

8th-9th
London: 'Petroleum Trading and Measurement Accuracy'. Details: Abacus International, 214 Inchbonnie Road, South Woodham Ferrers, Essex CM3 5WU.
Tel: (0245) 328 340.
Fax: (0245) 323 429.

8th-9th
London: 'The Financing and Economics of Gas and Electricity Projects'. Details: IBC Financial Focus Ltd, 57/61 Mortimer Street, London W1N 7TD.
Tel: (071) 637 4383.
Fax: (071) 323 4298.

8th-10th
London: 'Financial Management & Accounting for the Oil & Gas Industry'. Details: Tom Jones, MD Consultancy, 18a Carden Place, Aberdeen AB1 1UQ.
Tel: (0224) 626268.
Fax: (0224) 626950.

8th-10th
Birmingham: 'Forecourt Shop & Convenience Retailing'. Details: Blenheim, 630 Chiswick High Road, London W4 5BG.
Tel: (081) 742 2828.
Fax: (081) 994 9735.

9th
Aberdeen: 'Introduction to Oil and Gas Subsea Engineering'.Details: I Mech E, 1 Birdcage Walk, London SW1H 9JJ.
Tel: (071) 222 7899.
Fax: (071) 222 4455.

9th-10th
London: Border and Territorial Disputes in the Energy Sector Conference. Details: Petroleum Economist, P O Box 105, 25/31 Ironmonger Row, London EC1V 3PN.
Tel: (071) 251 3501.
Fax: (071) 253 1224.

12th-15th
Alberta, Canada: 'The Petroleum Society of CIM 45th Annual Technical Meeting and AOSTRA 1994 Annual Technical Conference'. Details:
Tel: (403) 237-5112
Fax: (403) 262-4792.

12th-15th
Denver, Colorado: 'Analogs for the World - AAPG Annual Meeting'. Details: American Association of Petroleum Geologists, P O Box 979, Tulsa, Oklahoma 74101-0979, USA.
Tel: 1 (918) 584 2555.
Fax: 1 (918) 584 2274.

13th-16th
The Hague: '39th ASME International Gas Turbine & Aeroengine Congress'. Details: IGTI, 5801 Peachtree Dunwoody Road, Suite 100, Atlanta, Georgia 30342-1503.
Tel: (404) 847 0072.
Fax: (404) 847 0151.

13-17th
Norway: 'New Technology for Concrete Structures Offshore'. Details: Eureka Secretariat
Tel: +32 2 2170030
Fax: +32 2 2187906

13-14th
London: 'North Sea Oil & Gas' Details: Ms Emma Witchell, Financial Times Conference Organisation, 102-108 Clerkenwell Road, London EC1M 5SA.
Tel: (+44) 71-814 9770.
Fax: (+44) 71-873 3975/3969.

14th-17th
Brighton UK: 'Linking the Business World Electronically'. Details: Ms Tessa Berry UK EDI Association, 148 Buckingham Palace Road, London SW1W 9TR.
Tel: 071 824 8848.

14th
Aberdeen: 'Pipeline Emergency Shutdown Valves'. Details: IBC Technical Services Ltd, IBC House, Gilmoora House, 57-61 Mortimer Street, London W1N 7TD.
Tel: (071) 637 4383.
Fax: (071) 631 3214.

15th-16th
Singapore: 'Oil & Money, Asia & the Pacific'. Details: Brenda Hagerty, International Herald Tribune, 63 Long Acre, London WC2E 9JH
Tel: (44 71) 836 4802.
Fax: (44 71) 836 0717.

15th-16th
Aberdeen: 'Preventing Oil Discharge From Drilling Operations' Details: IBC Technical Services Ltd, IBC House, Gilmoora House, 57-61 Mortimer Street, London W1N 7TD.
Tel: (071) 637 4383.
Fax: (071) 631 3214.

16th-17th
Essen, Germany: 'Energy Outlook Conference: Natural Gas Market Prospects'. Details: Patricia Matthews, Conference Organiser
Tel: (44 81) 545 6201.

20th-21st
Aberdeen: 'Optimising Your Reservoir Management'. Details: IIR Limited: Industrial Division, 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD.
Tel: (071) 412 0141.
Fax: (071) 412 0145.

20th-23rd
Milan:'19th World Gas Conference'. Details: Snam S.p.A.,Ufficio Stampa, Franco Perugia, Piazza Vanoni, 1, I 20097 San Donato Milanese MI.
Tel: 39 (2) 520 5457.
Fax: 39 (2) 520 23030.

22nd-23rd
Aberdeen: 'Floating Production Systems'.IIR Limited: Industrial Division, 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD.
Tel: (071) 412 0141.
Fax: (071) 412 0145.

22nd-24th
London: 'Introduction to Oil Industry Operations Course'. Details: Caroline Little, The Institute of Petroleum.

23rd-24th
Noordwijk, The Netherlands: '1994 European Oil Refining Conference and

FORTHCOMING EVENTS

Exhibition'. Details: WEFA Ltd, Mappin House, 4 Winsley Street, London W1N 7AR.
Tel: (071) 631 0757.
Fax: (071) 631 0754.

24th-3rd July
Manchester: 'EnviroMan '94 – Exhibition and Conference'. Details: Rebekah Farr, Marstonbury Ltd.,12 Alban Park, Hatfield Road, St. Albans, Hertfordshire AL4 OJJ.
Tel: (0727) 831 337.
Fax: (0727) 841 694

26th-2nd July
Hong Kong: 'Coating Inspector Course: Basic Coating Inspection'. Details NACE Headquarters.
Tel: 713 492 0535 ext 81.

27th-29th
London: 'Introduction to Petroleum Economics Course'. Details: Caroline Little, The Institute of Petroleum.

30th
London: 'Communicating Environmental Policy'. Details: City University, BICS International Registration Centre, 1st Floor, Chandos House, 12-14 Berry Street, London EC1V 0AQ.
Tel: 44 71 490 2076/336 7911/7988.
Fax: 071 336 7955/
071 490 2086.

July

2nd-14th
Bahrain: 'Coating Inspector Courses: Basic Coating Inspection July 2-8, Intermediate Coating Inspection July 9-14.' Details: NACE Headquarters.
Tel: 713/492 0535, ext 81.

3rd-8th
Hong Kong: 'Coating Inspector Course: Intermediate Coating Inspection'. Details: NACE Headquarters.
Tel: 713 492 0535 ext 81.

10th-15th
St Johns, Newfoundland: Coating Inspector Course: Basic Coating Inspection'. Details: NACE Headquarters.
Tel: 713/492 0535, ext 81.

3rd-6th
Birmingham: 'LNG 11'. Details: The Event Organisation Company, 8 Cotswold Mews, Battersea Square, London SW11 3RA.
Tel: (071) 228 8034.
Fax: (071) 924 1790.

5th-6th
Budapest, Hungary: 'Gas Processing and Storage in the Former Soviet Union and Eastern Europe. Details: Business Seminars International Ltd, The Old Court House, Hurst Green, East Sussex. TN19 7QP.
Tel: 44 71 490 3774 (Int.) or 071 490 3774 (UK)
Fax: 44 580 860304 (Int.) or 0580 860304 (UK).

5th-6th
Aberdeen: 'Successfully Implementing & Measuring TQM in a Low Cost Culture. Details: IIR Ltd, Industrial Division 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD
Tel: 071 412 0141
Fax: 071 412 0145

5th-7th
London: 'Undersea Defence Technology Conference & Exhibition'. Details: Rachel Belsham, Conference Administrator, UDT 94 Conference and Exhibition, Nexus Business Communications Ltd, Warwick House, Azalea Drive, Swanley, Kent BR8 8HY
Tel: 44 (0)322 660070
Fax: 44 (0)322 667633.

6th-7th
London: 'Successfully Managing & Developing Mature Oil & Gas Fields' Details: IIR Ltd, Industrial Division 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD.
Tel: 071 412 0141.
Fax: 071 412 0145.

11th-12th
Chicago: 'Gas Distribution Engineering'. Details: Susan Robertson, Co-ordinator, Industrial Education.
Tel: 312 949 3881
Fax: 312 949 3879

12th-13th
London: 'Maximise Profitability in the Energy Sector'. Details: IIR Ltd, Industrial Division 28th Floor, Centre Point, 103 New Oxford Street, London WC1A 1DD.
Tel: 071 412 0141.
Fax: 071 412 0145.

12th-14th
Baltimore, Maryland: 'Dialogue/94: Coatings for Outdoor Metals Used in Artistic and Historic Works.'
Details: Cassie Davie.
Tel: 713 492 0535 ext 217.

12th-14th
Oxford: 'Transport Solutions for Sustainable Cities'. Details: Chris Kaighin, Environmental Management Programme Co-ordinator, Department of Continuing Education, Lancaster University, Storey Institute, Lancaster LA1 1TH.
Tel: 0524 849494.
Fax: 0524 849499

September

11th-16th
Atlanta, Georgia: 'General Education Courses: Basic Corrosion, Cathodic Protection – Theory & Data Interpretation, Protective Coating and Linings. Details: NACE Headquarters.
Tel: 713 492 0535 ext 81.

11th-17th
Atlanta, Georgia: 'Coating Inspector Courses: Basic Coating Inspection–Sept 11-17, Intermediate Coating Inspection–Sept 11-16, Advanced Coating Inspection–Sept 11-15, Peer Review–Sept 16-17. Details: NACE Headquarters.
Tel: 713 492 0535 ext.81.

12th-16th
Buffalo, New York: 'Niagara Frontier Section Fibreglass Reinforced Plastic Symposium'. Details: Russ Bachman.
Tel: 716 283 1765.
Fax: 716 283 3369.

18th-21st
Atlanta, Georgia: 'Lead Abatement Seminar' Details: NACE Headquarters.
Tel: 71-492 0535 ext.81.

18th-23rd
Kansas City, Missouri: 'NACE International Fall Committee Week 1994'. Details: NACE Headquarters.
Tel: 713 492 0535 ext 81.

18th-23rd
Houston, Texas: 'General Education Course: Basic Corrosion, Cathodic Protection – An Introduction, Cathodic Protection – Theory and Data Interpretation, Cathodic Protection Design, Corrosion Control in Oil & Gas Production, Protective Coatings and Linings, Designing for Corrosion Control, Microbiologically Influenced Corrosion'. Details: NACE Headquarters.
Tel: 713 492 0535 ext 81.

21st
Hatfield:'Microbiological Methods for the Petroleum Industry, A Hands-On Workshop'. Details: Caroline Little, The Institute of Petroleum.

TECHNICAL REPORT

Exploration and Production

The agreement with the British Standards Institution (BSI) for the IP to provide secretariat services on their behalf to the PSE/17 committee and its subcommittees became effective on 1 March. From that date we became responsible for receiving and distributing all correspondence and documentation received from national committees and international standardisation secretariats involved with ISO/TC 67 covering 'Materials, Equipment and Offshore Structures for the Petroleum and Natural Gas Industries'. The inaugural meeting of CEN/TC 12 was attended in Paris on 10-11 February and a delegate report produced confirming the United Kingdom's intention to restrict the work done on European standards.

A Technical Assistant has been recruited to assist in this work.

The final CRINE Report has been printed and around 300 copies have been distributed.

W. S. Atkins have completed their analysis of the 70 metre water depth case which is being incorporated into the final report on the Routine Cases for subsea equipment operating envelopes. The date for completion of the first draft of the Guideline Document is now June.

A meeting was held in Aberdeen on 8 February to review the final draft of the Position Paper on the 'Safe Design of High Pressure Shell and Tube Heat Exchangers'. Revisions have been incorporated and circulated for final comments. A proposal has been received from Imperial College for further theoretical work in conjunction with AEA at Harwell.

The 'Upstream Atmospheric Emissions' conference on 17 February was successful but poorly attended. A record 81 people attended the first Luncheon Meeting on 14 April to hear the talk by John Brooks of the DTI on the exploration potential of the UKCS.

Petroleum Measurement

Work is progressing on drafting, in liaison with HM Customs and Excise, the Solvent Industry Association, the Independent Tank Storage Association and UKPIA, best industry practice guidelines on oil measurement. Its purpose is to form a basic reference work for HM C&E for their revised Notice 179: Mineral (Hydrocarbon) Oils: Duty and VAT: Warehousing and related procedures. The metering section is complete and a draft of other measurement techniques has been issued.

Environment

The committee has re-examined its role within the IP and its interaction with other IP technical committees and other organizations. It has been decided that in future the committee will be adopting a more proactive role.

The Refineries Effects Sub-committee are in the final stages of producing the `Sector Application Guide for BS 7750; for Oil Refineries'.

Health

Because of the unexpected complexity of the collection of work history data and the estimation of exposures of workers to benzene, the completion of the epidemiology study has been put back to 1995. Priority has been given to the leukaemia study which should be complete by the end of the year.

Microbiology

The existing test method IP 385 `Determination of the viable microbial content of fuels and fuel components boiling below 390 °C - Filtration and culture method' has been fully revised and rewritten to include an additional procedure for testing highly contaminated fuels.

Two new proposed test methods are being developed:

- IP PM BY `Determination of fungal fragment content of fuels boiling below 390 °C', based on work carried out at the University of Hertfordshire;
- IP PM BV 'determination of inherent resistance of aqueous metalworking fluids to biodeteriation and for evaluation of the efficacy of biocides for addition to metalworking fluids'.

In addition the Fuels Group is continuing work to produce 'Guidelines for the investigation of microbial content of fuels boiling below 390 °C'.

Refining and Marketing

Following incidents during meter proving at several locations, a number of member companies are funding, or otherwise contributing to research into static electricity effects during proving. The work is being done at BP Sunbury and a draft report is expected by September.

HSE have discussed with the Institute draft proposals for replacing HS(G)41 covering service station design and operation. They plan to involve the IP, UKPIA, APEA and others in a new three committee structure to set and implement standards in future.

The Code of Practice for Driver Controlled Deliveries, prepared by UKPIA, will be published shortly by the IP.

An approach has been made to the Department of Transport seeking certification of the proposed electronic tagging for trucks, as was done on the Severn Crossing.

Plans have been approved for a programme of pressure measurements on truck vapour return systems across a wide range of service station storage and venting arrangements, with a view to providing data for the preparation of design guidelines.

The Code of Practice for On-Board Truck Computer Systems has been revised following a review of comments received.

The IP Tank Cleaning Safety Code was issued throughout the refining and distribution system for review of operational safety aspects, following amendments of health and hygiene sections. Review of comments received will take place during the next few weeks.

Test Method Standardization

A technical meeting with ASTM delegates has been arranged at the IP for 2-3 June when technical issues of common interest will be discussed including the development of International Standards for testing petroleum products.

IP members will form the UK delegation at the forthcoming International Standards Organization TC 28 Petroleum Products meeting in Paris on 6-10 June. At this meeting the United Kingdom will propose the formation of an international flash point working group which will be responsible for liaising with ISO/TC 35 the International Paints and Varnishes Committee. In addition it is proposed that it will oversee the revision of existing flash point methods used by both the paint and oil industries and the development of new common interest methods.

John Hayes, Technical Director

PEOPLE

Mr Bob Poulton has been appointed Operations Manager with vehicle wash specialists Kleindienst. He was previously Service Manager with Neptune and has 10 years experience in the industry.

After a bid from Enterprise Oil plc, **Mr Rudolph Agnew**, who was to have become Chairman after the AGM on 24 May became Chairman with immediate effect. The Board of LASMO paid tribute to the outgoing Chairman **Lord Rees.**

Mr Steve Brown, formerly Director of Fisher-Rosemount Systems, has been appointed to the post of Managing Director of Fisher-Rosemount Limited. This move completes the next stage towards total integration of all Fisher-Rosemount operations.

Mr Owen Jenkins, currently managing director of Kuwait Petroleum Benelux, will be appointed managing director of Kuwait Petroleum (GB) Ltd in August. He succeeds Mr John Auld.

Mr Alan Sim has been appointed to the BP Exploration Chair of Engineering by The Robert Gordon University, Aberdeen, and will head their new Strategic Development Unit for Engineering Education.

Mr Rolf Stromberg, currently chief executive officer of BP Oil Europe, will be taking over the chairmanship of the company in October upon the departure of the present chairman.

Brown & Root has announced the appointment of a new managing director for its wholly owned subsidiary company, Seaforth Maritime Group. **Mr Richard J. Martin**, a naval architect with over 13 years experience within the Brown & Root group of companies, succeeds **Mr Tony Peers** who remains with the group as chairman.

United Transport (UK), one of the country's largest bulk liquid and contact distribution companies, has appointed **Mr Roger Kitchener** as their new marketing director.

Mr Roger Colomb, former Managing Director Texaco Ltd, has joined Petroleum Employers Council/Petroleum Employers Skills Council as part-time General Manager. **Mr Richard Ayres**, former General Manager PEC, has become General Manager, Petroleum Training Federation.

York Sensors, specialist in fibre optic sensing systems, has appointed Mr Theo Gorz as part of the expansion of its sales and marketing team. He will be responsible for European sales and marketing.

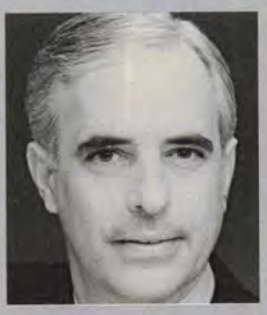
Brookfield Viscometers UK has recently introduced two new members of staff to its sales team. Ms Jayne Cox (left) will be responsible for sales support for the Southern area. Mr John Stead (right) will be responsible for Brookfield sales in the North and Scotland.

Atlas Wireline Services, a division of Western Atlas Inc., has named Mr Jim Charuk manager of the recently formed software systems department. He is based at the Atlas Wireline headquarters in Houston.

Western Geophysical, a division of Western Atlas Inc., has named **Mr Gerry Gilbert** vice president of technology. He is based in Western's headquarters in Houston. Other new management posts within Western's technology department are **Mr Paul Morgan** (vice president of product engineering), **Dr Craig Beasley** (general manager of research and development) and **Mr Rick Workman** (general manager of applied geophysical research).

The Confederation of British Industry has appointed **Mr John Banfield**, Chairman of Mobil Oil Co. (London); **Mr Howard Robinson**, Chief Executive of Calor Group (Datchet, Slough) and **Mr Peter Sanguinetti**, Group Director of Corporate Affairs at British Gas (London) to its National Council.

Mr Roger Brown has been appointed to the post of Vice-President, Eastern Hemisphere of Reda Pumps Ltd. He will be responsible for all areas of the globe with the exception of North and South continental Americas. Previously Mr Brown held the position of President with Hycalog.



LICconsult, a group of private companies specialising in supplying state-of-the-art computer systems for the oil & gas pipeline industry has appointed Mr Enrique S. Saavedra, P.E. as Managing Director for the North American operations.