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Cover photo of IP President BRR Butler OBE. Photo by Jon Whitbourne.

15 May

Shell has linked with five mainland China corporations in a plan for a \$2.5-3bn oil refinery and petrochemical plant at Huizhou Guangdong.

Statoil reported that Gaz de France wish to buy another 2bn cubic metres of gas a year from its Troll gas field.

Mobil Natural Gas Inc has agreed to sell more than 6bn cubic feet of gas annually, for five years, to North Carolina Natural Gas Corp.

Iran and Oman have agreed to set up a committee to exploit joint oil reserves in the Strait of Hormuz.

16 May

A redetermination of the Ravenspurn North Gas field has cut BP's stake to 20 percent.

Aran Energy is taking steps to bring Ireland's first offshore oil-field into production with a low cost deep water development.

17 May

South Korea's petrochemical exports rose 83 percent in the first quarter of 1990 from the 1989 period, to 178,200 tons.

Shell Refining Co (FOM) Ltd will invest Ringgits 850m over the next five years to upgrade its refining capacity at Port Dixon, Malaysia and in related projects. **Statoil is preparing for negotiations** which could start in August to lease high-grade sweet crude oil to the US for its Strategic Petroleum Reserve.

The US and UK governments joined forces in an apparent attempt to overturn a US court decision which claimed US legal jurisdiction over the forward market for North Sea Brent oil.

18 May

According to the UK Chemical Industry Association, environmental protection will cost Britain's chemical industries £2bn over the next three years.

Exxon USA's Exploration Department plans to merge its western and eastern exploration divisions to form a Houston-based onshore division.

21 May

Kuwait's oil refinery and distribution system in Europe can now handle about 450,000 b/d of crude oil.

22 May

The chief executive of National Power reported that gas has such a price advantage over coal that

plans to build more large coal-fired power stations have been shelved. **BP has awarded Brown and Root** a £20m contract for the detailed design and procurement work on its Kinneil Terminal expansion project.

Basic Petroleum International Ltd has received final approval from the Guatemalan government on a location for construction of a mini-refinery at La Libertad and construction will start immediately.

23 May

Elf-Aquitaine has signed an agreement with the Soviet Union for the exploration of hydrocarbons in the Caspian Sea area. **PDVSA executives have reached** an advanced stage in talks on the first joint venture with Repsol SA involving a \$20m paraffin plant.

24 May

An international consortium of oil companies will study a \$10bn expansion of natural gas drilling in Australia's remote north west. **Venezuela's total natural gas reserves** are currently estimated at 222bn cubic feet.

29 May

The UK government has given initial approval for the construction of two gas-fired power stations in Rugby and Brigg.

Sonatrach has signed a contract to explore for oil in Algeria with Total-Compagnie Francaise des Pétroles.

The partners of Western Australian Petroleum Pty Ltd have agreed to develop the Yammaderry and Cowle offshore oilfields in northwest Western Australia.

Saga Petroleum has approved Norsk Hydro's purchase of a 9 percent stake in Saga.

30 May

Imatran Voima Oy and the Irish Electricity Supply Board are competing to operate the proposed gas-powered station at Corby.

BHP may reduce its stake in Woodside Petroleum Ltd to 20 percent or less, rather than selling it entirely.

31 May

A new condensate gas field has been discovered off China's Pearl River Delta by teams from a joint venture which includes Shell (Exploration), China Ltd.

Elf Aquitaine has agreed to buy the exploration and production

activity of Coparex in Norway and Cameroon for an undisclosed amount.

West German chemical firms have agreed to stop producing ozone-depleting CFC's by 1995, five years ahead of worldwide political accords.

NYMEX will launch a futures contract for high sulphur 'sour' grade crude oil by the end of the year.

1 June

Intensifying competition in the Canadian petrol market has led Shell Canada to restructure its downstream operations, with the loss of about 800 jobs.

Denmark has given oil and gas concessions in its North Sea offshore sector to the Danish Underground Consortium and Statoil.

4 June

National Power and PowerGen have won contracts to supply more than 1,000 factories, offices, hospitals and other large sites in England and Wales.

Texaco Inc reported that an international consortium, of which it is part, have found oil in a wildcat well off the northwest coast of Angola.

5 June

Burmah Oil has begun a drive to develop a petrol retail business in Australia by taking a 90 percent stake in Astron Petroleum.

West Germany has drawn up plans to cut fossil fuel emissions by 30 percent by 2005.

BP has confirmed the southeast extension of the Ula field, Norway with a successful appraisal well and is now examining ways of bringing the oil on stream.

6 June

NV Phillips have come to an agreement with Royal Dutch/Shell Group's R&S subsidiary to cooperate in marketing solar photovoltaic electricity generators.

Venezuela will invest about \$20bn in a three-part oil, gas and petrochemical expansion programme.

7 June

Total Oil Marine has awarded a £43m turnkey contract to the Miller field gas reception facilities at St Fergus to a joint venture between AOC International and Technip Geoproduction.

Three Japanese companies are considering burning Orimulsion to generate electricity.

Teikoku Oil Ltd has taken 20 percent in a concession to explore

for oil in a new field in southern Papua New Guinea.

8 June

Hyundai Construction has won a \$13.3m contract to build a petrochemical plant for the Libyan state-run Raslanuf Oil and Gas Processing.

A major oil spill occurred in New York Harbour after a British-flag tanker, the *BT Nautilus*, ran aground in the Kill Van Kull. Coastguard officials put the size of the spill at 260,000 gallons.

11 June

A consortium has confirmed purchase options which it took out two years ago to acquire the LNG carriers *Gastor* and *Nestor*. The buyer is Bermuda-based Enellengee, which is a joint venture of Nigerian National Petroleum Corp, Shell Gas BV, AGIP International and Cleag (Elf).

Five explosions rocked a burning tanker in the Gulf of Mexico, raising fears that the vessel could spill more of its cargo of 38m gallons of crude and sink.

Exploding barrels of highly flammable solvents fuelled an intense blaze at the Solvents and Chemicals Inc chemical plant in Pearland, USA.

12 June

Shell Exploration and Production said it had ceased production from its Brent Delta oil platform. A company spokesman said that no time has been set for resuming output from the platform.

A comprehensive review of prices, efficiency and service levels in British Gas was announced by Ofgas.

Exxon Co USA said its 455,000 b/d refinery in Baton Rouge, La, is refining reduced emission, or reformulated, gasoline for the US Gulf and East Coast markets.

13 June

Ruhrigas is to construct an 80m cubic metres capacity LNG terminal in Wilhelmshaven for handling imports from Algeria, Nigeria and elsewhere.

Costain confirmed that it was in talks to sell Wacker Oil for \$77m in cash. The buyer is Seagull Energy.

Ethyl Corp has agreed to buy Quantum Chemical Corp's poly alpha olefin production plant in Houston, Texas, for about \$48m.

Several major oil companies said they will continue using their own ships to deliver crude oil to US ports despite widespread industry concern about the liability from oil spills.



LUNCHEON

Tuesday 27th November 1990
The Dorchester Hotel, London

Mr Robert Horton
Chairman

The British Petroleum Co plc
will be the guest of honour and speaker
on the subject of

'It's Not Easy Being Green:
An Assessment of Environmental Costs and Benefits'

For further information, and a copy of the ticket application form, please contact **Caroline Little**,
The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR. Telephone: **071-636 1004**.
Telex: **264380**. Fax: **071-255 1472**.



FUTURES AND FORWARD MARKETS **SWAPS AND OPTIONS** **Which Way Forward?**

Friday 16 November 1990

The following papers will be presented at this one-day conference to be held at The Institute of Petroleum in London.

Keynote Address

**A Major's Perspective on Risk Management for
Itself and Its Customers**

Mr Alan Binder, President, Shell International
Trading Co.

The Futures Choices: Three Papers

A Second Crude Oil Contract for NYMEX

Mr Patrick Thompson, New York Mercantile
Exchange

**Do Existing Futures Contracts Meet the Industry's
Needs?**

Mr Peter Wildblood, IPE, London

A Critical Review of the Existing Futures Contracts

Mr Gordon Watson, Czarnikow Energy

Phibro — A Trader in All the Markets

Mr David Hammer, President Phibro Energy Inc.
USA

Swaps and Options in Risk Management

Mr Christophe Chassard, Elf Trading, Geneva

The Hedging Efficiency of the Russian Gas Oil

Forward Market and the IPE Futures Contract

Mr David Long, Oxford Institute for Energy Studies

**Legal Aspects of Risk Management and Forward
Oil Trading**

Ms Blanche Sas, University of Dundee

**The Problems of Defining the Price of the 'Marker'
Crude Oils and Products**

Mr Adrian Binks, Petroleum Argus

The Existing Forward Markets

Mr Nigel Graham, Neste Petroleum (Products) Ltd

For a copy of the registration form, please contact **Caroline Little**, The Institute of Petroleum, 61 New Cavendish Street, London
W1M 8AR. Telephone: **071-636 1004**. Telex: **264380**. Fax: **071-255 1472**.

Shell SHARE brings benefits

SHELL UK Oil has launched a major initiative aimed at revising its relationship with retailers in order to give them higher rewards for effort and achievement. At the same time the company intends to bring radical improvements to the quality of its service to the motorist.

The new partnership is known as SHARE, roughly equivalent to Standards, High Quality And Retailer Excellence. For the first time in the United Kingdom, partnership agreements based on franchises are being introduced. These 10-year franchise agreements are available to both company and dealer-owned sites, together with leases of up to 10 years for company-owned sites.

By this means it is hoped to satisfy those who have long been seeking leases instead of licences. Retailers will now have a saleable asset and they will have more incentives and greater security of tenure than in the past, when licences only extended for three years. Before the end of



New scheme for Shell retailers

the 10-year lease, a fresh lease can be negotiated.

The Shell SHARE franchise is being offered to selected licensees, dealers and new applicants who can meet the standards required for franchisees (excluding motorway sites). Extensive training will be provided for potential applicants.

The new franchise will involve either a complete redevelopment of the site or a major upgrade of existing facilities, including the forecourt shop. In return for the modernisation, Shell demands a fran-

chise agreement. A comprehensive manual details the way the business is to be conducted, with emphasis on safety, service and standards. Shell will also provide advice, management information and marketing strategies. There are plans for more than 300 revamped sites to be in operation within 12 months and up to 1,800 will be converted by the end of 1994.

Stronger Shell branding will be evident, with improved signalisation and lighting and multi-product pumps. New shops will be branded 'Select' and have increased selling space for a wide range of products, chosen specifically for local customer demand. Shell has also negotiated preferential terms with a number of suppliers, so that franchisees can enjoy higher margins.

Shell admits that in the past it has not taken a great interest in the non-fuel activities of its sites. This is now changing, with an emphasis on ancillary services, all with a stronger Shell branding. Car washes will be included at many sites, branded as Aqua-Valet. This will be the first nationally branded car wash network in the United Kingdom.

Ofgas review price

A REVIEW of the prices British Gas charge its domestic consumers has been launched by the industry's watchdog, the Office of Gas Supply (Ofgas).

The gas industry's regulator, Mr James McKinnon, announced a review of the tariff price formula for British Gas's 17 million customers who annually use less than 25,000 therms a year.

Mr McKinnon, Director General of Ofgas, said the review was 'the most important single event affecting British Gas and its tariff customers since privatisation'.

He said the aim of the review was to ensure that tariff customers get the best possible value for money while allowing the company to run its business as efficiently as possible.

At present British Gas must keep annual price rises to two percent less than inflation after allowing for the 'passthrough'

of gas purchase costs paid to North Sea suppliers.

The review aims, set out in an Ofgas document, will examine, among other things, whether this pass-through cost is appropriate, whether British Gas offer value for money, whether the company is efficient, how the benefits of this efficiency can be shared with its customers and whether British Gas itself gets a reasonable rate of return.

An important part on the rate of return will be a study of the asset value of the company's pipelines.

Mr McKinnon said: 'The review is expected to last around nine months and Ofgas will form its own view of the issues set out in our paper. British Gas has to decide whether or not it accepts the Ofgas view, if not, then I will not hesitate to put the issues to the Monopolies and Mergers Commission.'

Hungarian glasnost

CHARTERED ACCOUNTANTS Ernst and Young have been appointed to privatise petrol stations in Hungary.

The international business and financial advisers have been asked by AFOR Asvanyolajforgalmi Vallalat (AFOR), the main supplier of gasoline and petroleum products in the Eastern bloc country, to turn the firm into a public limited company by 1 January 1991.

AFOR has over 400 filling stations, including more than 40 selling unleaded petrol. It is also the major supplier and retailer of household fuel oil and liquified petroleum gas cylinders and operates the product pipeline transmission system supplying a network of regional distribution centres.

Swiss deal

TAMOIL SA has taken over Gatoil (Suisse), the troubled Geneva-based oil company, in a \$140 million deal.

Libyan-controlled Tamoil, owned by Oilinvest and Swiss finance company Sasea Holding, made the take over bid with another Swiss company; Migrol Genossenschaft Zurich. A rival offer by subsidiaries of Elf and Agip has been rejected.

BP sell coal

BP and Zeigler Coal Holding Company have announced that they have reached an agreement, subject to US government approval, for Zeigler to acquire most of BP's remaining US coal operations by a purchase of the stock of those coal companies for \$115 million. The primary businesses involved are those of BP's Franklin Coal and Old Ben Coal Companies.

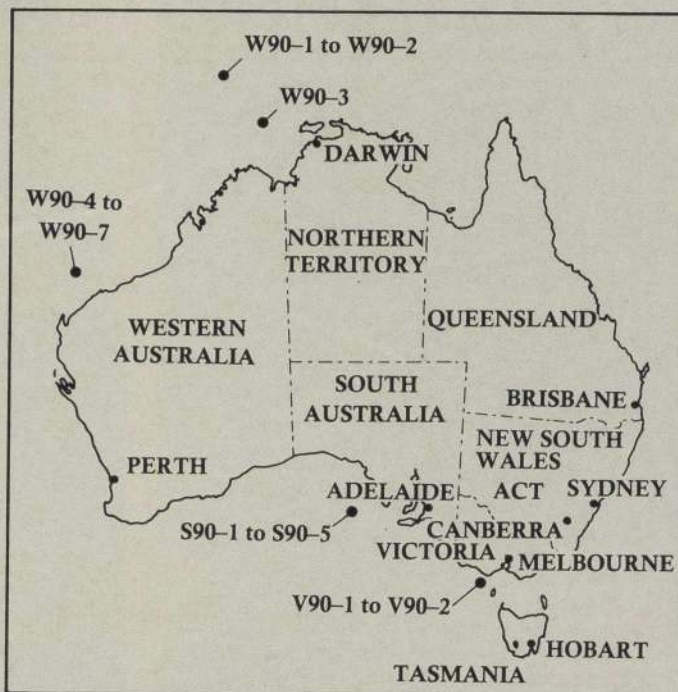
Australian exploration

OIL companies have been invited to apply for the award of 14 oil and gas exploration permits off-shore Australia.

Most of the areas have already been the subject of some exploration in the past, but additional work will be required to assess fully their petroleum potential.

The areas made available are: Western Australia — seven areas in the Bonaparte, Canning and Carnarvon Basins. Victoria — two areas in the Otway Basin. South Australia — five areas in the Duntroon and Great Australian Bight Basins.

Applications for these areas can be lodged until 4 pm on Friday, 26 October 1990.



Location of offshore exploration areas

Dubai contract

THE International Petroleum Exchange of London (IPE) is to launch a sour crude oil futures contract on 19 July 1990 with October 1990 as the first delivery month.

Final details for the contract, which is to be based on Dubai crude, was approved by the IPE board last month.

The contract, which will follow a similar contract launch started on 21 June on the Singapore International Monetary Exchange, will be based on cash settlement against a price set by panels from Simex and the IPE.

The IPE price, which will be published and issued at 12 Noon each day, is to be an average of both panels figures to produce a similar settlement price for both exchanges.

The last trading day for each contract on both markets will be the same—12 noon on the 15th of the month preceding the expiring contract month except when such a day is not a business day.

The contract is expected to be trading in the region of 2,000–3,000 lots a day by the end of the year.

'Driver of the Year'



Acapulco bound! UTT driver Gerry Rose.

THREE of United Transport Tankers' drivers testified to UTT's reputation for top-class driver safety training by scooping 1st, 2nd and 4th prizes in a recent 'Driver of the Year' competition, run by the PARAMINS Customer Service Unit based at Exxon Chemical's manufacturing complex at Fawley.

Twenty-two drivers representing many leading road transport operators qualified to enter the contest, by passing six safety audits carried out as they entered Exxon Chemical's site throughout the year.

Of the final six, three were from UTT. In first place was UTT's Gerry Rose, who won two weeks holiday in Acapulco, courtesy of Exxon Chemical. A delighted UTT added a bonus of £300 spending money, and allowed Gerry to take the two weeks leave in addition to his statutory vacation time.

New policy

THE London Fire Brigade has introduced a new policy to make all new petrol stations safer and more 'environmentally friendly'. Now all new storage tanks on sites in the capital have to be fitted with an overfill prevention device.

Garages which ignore the brigade's instructions, in force since this April, can be issued with an Improvement Notice requiring the work to be done within a certain time, or a Prohibition Notice to stop them keeping petrol. The final course of action would be prosecution.

First contract

THE first ever service contract to be awarded by Aberdeen's £8.0 million International Drilling and Downhole Technology Centre has been won by Salvesen Tubular Services, an operating division of Salvesen (Oilfield Technology) Ltd.

Hamburger Halt

The drive-through fast food specialist, Hamburger Halt, launched in 1989, is looking for new sites adjacent to petrol station forecourts.

Hamburger Halt is a British concept, even though the standardised building and site layout have American connotations.

Fina relaunch

ON 4 June 1990, Petrofina (UK) Limited re-registered as a public limited company and changed its name to Fina plc.

The change marks a move to identify the company's title more closely with its Fina branded products.

IP Annual General Meeting, 12 June 1990

At the IP Annual General Meeting on 12 June, Mr B R R Butler OBE, a Managing Director of British Petroleum, was elected President of the Institute for 1990–1991 in succession to Sir Archibald Forster.

Ian Fotheringham, Gordon Forsyth and Peter Ellis Jones were re-elected as Honorary Secretary, Honorary Treasurer and Honorary Editor respectively, for the next year.

The election of Dr John Brothwood, Geoff Crump, Leonard Rea and Peter Barlow as Ordinary Members of Council for terms of three years was approved, as was the election of David Watts as an Additional Member of Council for a term of three years.

The Report and Accounts for 1989 were adopted and Ernst & Young were appointed as auditors for the coming year.

Entrance fees to the Institute were abolished, with effect from 1 October 1990.

After the meeting, Awards of Council were presented to Jimmy Hay, David Jamieson, Pat O'Connell and Chris Willy and Honorary Fellowships to the Rev Andrew Wylie and Derek Payne.

Sir Archibald Forster then invested Mr Basil Butler with the badge of office and Mr Butler gave a Presidential Address (see page 336).



Mr Basil Butler OBE became President in succession to Sir Archibald Forster.



Sir Archibald Forster.



Derek Payne, IP Executive Director (left) received an Honorary Fellowship. He took early retirement at the end of June after 26 years' service with the Institute (see *Petroleum Review* May issue). The President paid tribute to Derek Payne's contribution to the Institute over many years, very familiar to those present at the AGM and unlikely ever to be repeated or rivalled. He personally had benefited from better briefing and general organisation than in any of the other bodies with which he had been involved. Ted Williams, IP Director General (right) presented the Report of the Institute for 1989.





Peter Barlow was elected as an Ordinary Member of Council. He is Manager, Environment Development of Shell UK Oil.



Pat O'Connell made a valuable contribution to the work of the Institute as a member of staff over a period of 13 years. This was particularly in the petroleum measurement field, which developed greatly in importance during his time at the Institute. He was also very much involved in the work of the IP Engineering Committee and Safety Sub-committee.



Jimmy Hay MBE is General Manager, Aberdeen Operations, BP Exploration. He is a former Member of Council and Chairman of the IP Exploration & Production Committee in Aberdeen. He was a founder member of the IP Aberdeen Branch, a member of its committee and then Chairman of the Branch. In 1984 he was a member of the organising committee of the IP conference which took place in Aberdeen.



Rev Andrew Wylie received an Honorary Fellowship. He is Chaplain to the Scottish Churches Industrial Mission, with responsibility for the North Sea oil industry. He has made a big impact on the industry in Aberdeen since his arrival and spends 40 percent of his time, including the last six Christmases, offshore. He combines his pastoral vocation, with a business awareness, which has enabled him successfully to establish the mission and through it, to provide the counselling which has been so much appreciated at the time of tragic accidents, as well as ministering in happier times to those working in remote locations.



David Jamieson is a Member of Council and was Chairman of the IP Education & Training Committee for six years. Under his chairmanship, there were annual workshops for training officers in the oil industry, careers conferences for schoolteachers and a quarterly report on education and training matters in *Petroleum Review*. He left BP earlier this year after a long career in personnel and training which covered the upstream, downstream and chemical sectors in the United Kingdom, Trinidad, Greece and Singapore. His last appointment in BP was Personnel Manager, with special responsibilities, in BP Exploration UK. He is now Director of the Edinburgh Venture Enterprise Trust.



Chris Willy was until recently Director, External Affairs of the United Kingdom Offshore Operators Association. He provided a very important liaison with UKOOA by participating actively in two Institute groups and one of its committees. He is currently Chairman of the Institute of Petroleum Exploration & Production Discussion Group, where his excellent contacts throughout the upstream industry were instrumental in re-establishing the group in its early days. He has been a member of the Committee of the IP Energy Economics Group for eight years as well as belonging to the IP Publications & Information Services Committee for over four years.

Presidential address

By B R R Butler OBE, Managing Director, BP

Mr Basil Butler gave his inaugural presidential address at the Annual General Meeting of the Institute of Petroleum on 12 June 1990. He said:

My first and obvious task is to thank the Institute of Petroleum for this great honour. I have worked in the oil business now for 36 years. During that time, there have been many excitements and changes. But contrary to what is sometimes said, I don't believe that the industry's future will be any less eventful than the past.

In this respect, I am reminded of something that was said to me as a raw recruit to the oil industry in Trinidad. Why, I was asked, have you joined an oil company when there will be no oil left in 15 years' time? That was in 1954! Since then I have learnt to treat such forecasts with caution. But there is no doubt that many of us have lived through traumatic and exciting times; and I'm prepared to predict that there's plenty more of the same to come.

Whether or not this is a comforting thought on which to open my presidency, I shall leave it to you to judge. But at least it may be of encouragement to young people contemplating a career in the oil industry. And it ought to be of encouragement to the Institute of Petroleum as well.

There is still so much for us to do. The complexities we face are enormous. The issues and problems which confront us must be tackled successfully if we are to safeguard the future; and it still holds true that the economic destiny of nations and the living standards of millions are bound up with the fortunes and performance of our industry. That is one of the reasons why the work of the IP is, and will remain, so important.

Sir Archibald Forster as the IP's retiring president has carried on with distinction the tradition which he inherited from his distinguished predecessors. I only hope that I can do as well, or feel as satisfied at the end of my tenure of office as he deserves to feel today.

His presidency coincided with the Institute's 75th anniversary in 1988

and his two years in office were not easy ones for the oil industry as a whole. There was the tragedy of Piper Alpha; there was the Monopolies and Mergers Inquiry into petrol prices; and there was the growing realisation of the environment's impact upon the technical and economic realities of our industry. We have certainly been fortunate in having as able a president as Archie, particularly during such a difficult period. I shall do my best to take over from where he so successfully left off.

Safety

I mentioned Piper Alpha. That is a sad reminder of the risks which people run in order to secure the energy we need and of why the importance of safety as an issue can never be exaggerated; not to the industry; and indeed not to the IP itself.

Safety has always been an important part of the IP role. Our codes of safe operating practice provide trusted and authoritative principles for the industry to follow. They are an important component of self-regulation.

But we need to keep them under constant review. Consumers as a whole are increasingly conscious of the safety risks which are inherent in a modern, industrial society. Whether it be the risk of a fire at a service station, a spillage by a petrol tanker on the motorway, or an explosion at a refinery, they expect us – the industry – to take all reasonable precautions to avoid accidents.

They are right to demand higher standards, and the Institute of Petroleum can help in achieving them. There is never any excuse for cutting corners; although as a quid pro quo society must accept that energy cannot be supplied without some element of risk. The challenge is to keep that element as small as possible.

That applies to the North Sea too. This summer will see the findings of the Cullen Inquiry into Piper Alpha which are bound to have significant implications for all North Sea operations. It's important for the IP to take these issues into account as well. Indeed, one of the IP's current priorities is to become more involved with the exploration and production

end of the business. This is where much of my own career has been spent; and I would like to do all I can to help broaden still further the Institute's work in this direction.

Environmental issues

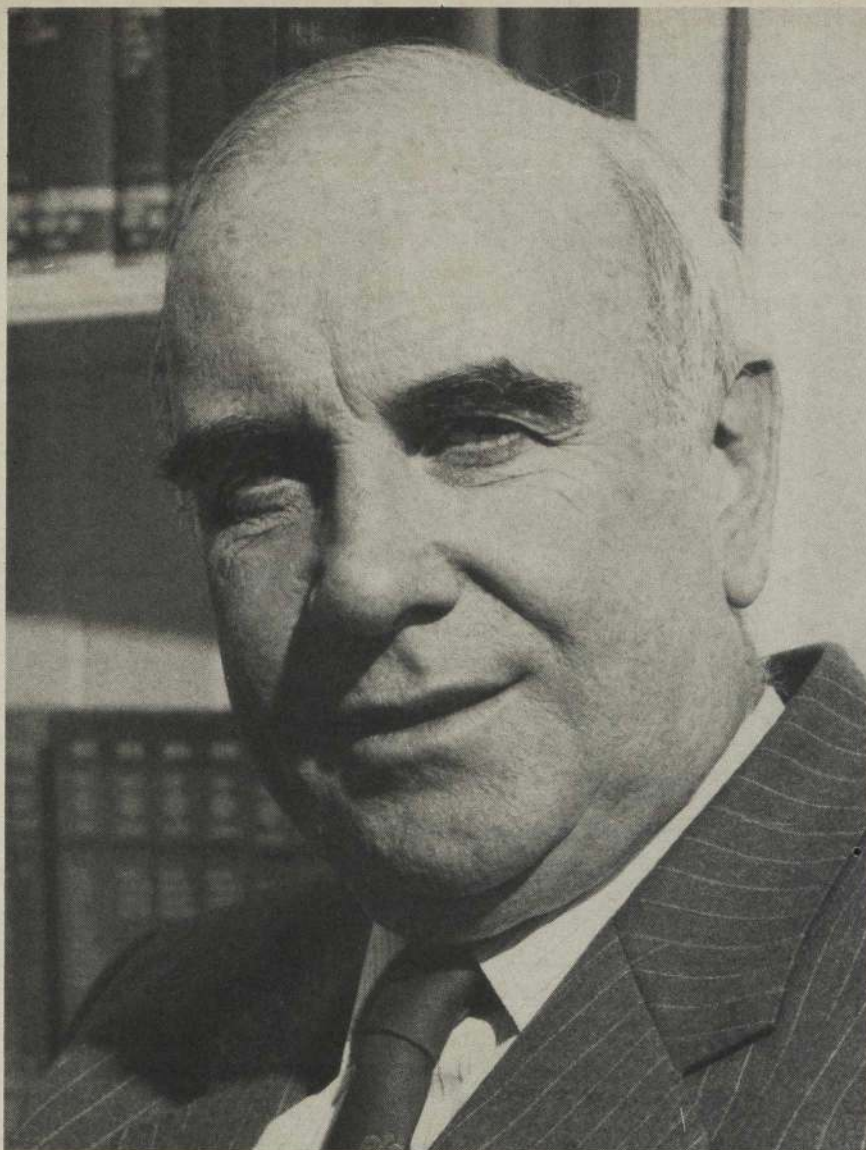
Of course, the safety issue is not alone in crossing the industry's traditional demarcations. Environmental questions too cut across all boundaries and have to be addressed with this in mind. Most of these questions are immensely complicated. The idea that there is one magic environmental solution to the diverse and often unrelated problems falling under the 'green' umbrella is totally divorced from reality. Indeed, measures to alleviate one environmental problem can sometimes exacerbate another. There is no doubt, however, that the activities of the energy industries are central to the debate and that we must, as far as possible, become part of the 'solution' to the problems which exist.

Once again, I am sure that the IP has an invaluable role to perform here. One of the strengths of the institute has always been its well deserved reputation as a learned society; while its purpose is to serve its members, it has never been the industry's apologist! And that is why it is listened to with respect.

This is particularly important in the environmental sphere, where political opportunism sometimes appears to carry more weight than hard fact and sound knowledge. Certainly, there are many sensitive political and commercial questions implicit in moving towards a 'greener' environment. But there are also many technical and scientific issues too. Contrary to what is occasionally supposed, the need for caution does not imply lack of will; sometimes, we are genuinely unsure of how best to proceed. Here, the IP can be of enormous assistance in gathering the facts and marshalling the evidence.

Facing the future

Some general principles are becoming clear. First, I am sure that the whole industry is agreed that we should do those things which make sense in themselves, even thought their precise environmental benefit is at this stage



BRR Butler

uncertain. Energy efficiency is an obvious example. Common sense dictates that it would be both shortsighted and dangerous to consume energy wastefully in the decade ahead. While there is room for debate as to how best to encourage energy efficiency, there is little doubt that it is a goal worth striving for and that it will – in turn – have beneficial environmental consequences.

When you get down to specifics, the issues become more complicated. Let's consider, for example, clean transport fuels as a way of reducing some, if not all, of the most well-known environmental problems. Candidates include reformulated gasoline, methanol, compressed natural gas, LPG and reformulated diesel. The first of these – reformulated gasoline – is probably the front-runner from the industry's point of view; it can be used in all cars and adapted to existing supply, delivery and marketing systems.

Oxygenates, such as MTBE, will

almost certainly be part of the reformulated solution; at 5–15 percent concentration, MTBE helps to reduce carbon monoxide emissions and also helps recover octane which may be lost through aromatics reduction.

But there are still many uncertainties. Reformulated gasoline is preferred by many over the alternatives such as methanol – although, despite its physical and toxicity characteristics, this too has its champions, especially in California. While reformulated gasoline is our favourite, its economic costs are still very high and its total impact on the environment has still to be established. One must also always be careful that proposed remedies for one kind of environmental problem do not exacerbate others.

What is certain is that reformulation and the use of oxygenates will necessitate significant capital expenditure; during the transitional stage at least, gasoline reformulation could create localised shortages; and there may not

even be enough oxygenates available.

That is why this is not an area to rush into. Not because one is trying to get out of doing anything but because the practical problems have yet to be thought through. What are the supply/demand implications? What are the cost implications, particularly for the fuel industries? How can we ensure that the right specifications are agreed industry-wide and that they achieve the desired environmental results? This is an area where the industry needs to think ahead.

Importance of standards

Specifications – and standards generally – constitute another area of interest to the IP. The issue has attracted greater importance because of '1992' and the drive to create a single, European market. Upstream, the concern is that countries may adopt particular national specifications as a hidden means of protectionism. But this whole area is one where we must be wary of Euro-mania.

The central point to register – and once again, the IP has the credentials to make the case – is that some *national* standards are for all practical purposes *international* standards and have been adopted as such by the industry; API standards for equipment used in exploration and production are a very good example of this and the IP supports the move to formalise them as international standards.

We have both the right and the duty, therefore, to keep a close eye on European Community developments. At one stage, we thought that a satisfactory compromise had been reached but the European Parliament, no doubt for their own good reasons, thought otherwise. The issue remains very much alive. A minimum requirement must be that any new standards emanating from the European Committee for Standardisation are at least compatible with API. But I think we need to remember as well that technical innovation is a vital element of our industry and that if we are to be impeded in our efforts to adapt equipment designs and specifications, we shall all be losers in the long run.

This is an area which involves all parts of the oil industry. The United Kingdom Petroleum Industry Association, (UKPIA), for example, has a particular interest in the economic implications of altering product specifications downstream; we have the scientific expertise to help develop the supporting methods of testing and

of measurement. It is a classic case for joint action.

At the beginning of my remarks, I said that I thought the challenges facing the industry now were every bit as exciting and important as in the past. And it is with this in mind that I see the IP playing a much more vigorous role than of old. Our rationale will always rest upon the scientific and technical side. But we mustn't be afraid to speak

a continuing process. We have taken the first steps towards enlarging our premises and we are currently seeking planning permission to add a further two floors to our existing building. Apart from providing a better service to members, this will also enable us to expand the lucrative activity of planning and hosting conferences which, today, is a competitive business and one we need to develop still further.

'I see the IP playing a much more vigorous role than of old'

on behalf of our members and in defence of objective criteria – whether the issue be standards, safety or 'greenery'.

Bound up with this is the IP's involvement in the field of research. We already have a budget for this purpose; but it is important to consider whether or not it is of sufficient size at present. The *style* of research sponsorship is also relevant. Perhaps it needs to be more commercially oriented.

This also links up with our general aim to increase our service to members. Work to modernise and commercialise the Institute's library services is

Our IP week in February is now one of the most important fixtures in the oil industry's calendar; we need to extract its fullest potential.

But in thanking you once more for the honour you have done me this evening, I should like to conclude by looking again at our industry and what I consider to be a central reality.

I think that we are subject to more external influences and pressures than ever before; influences and pressures over which we can exercise no direct control. We do all that we can to control costs; we spare no effort in mastering the technology. There are

technical things today of which we are capable and which would have been unthinkable only a few years ago.

But we don't control 'access' to oil and gas resources; there is very little we can do to influence their price. Our operations are surrounded by a network of statutory regulations and controls with which we must comply. If we wish to influence any of these crucial variables, we have to do so by virtue of our practical knowledge and experience – and hopefully too our integrity.

This to my mind is the great challenge facing the IP. We must develop our relationship with other comparable international bodies to ensure that the industry's case doesn't go by default. We have already done much to redress an excessive pre-occupation with downstream issues at the expense of the upstream; that too is an area where we must keep up progress.

It is upon the staff of the IP, and the volunteers who sit upon its committees, that the greatest burden rests. But I shall do all in my power as president to lend support to the initiatives that have already been taken and to help develop the openings that I have mentioned. ■



INFORMATION SUPPORT FOR THE ENERGY INDUSTRIES — AN EVALUATIVE APPROACH

Tuesday 9 October 1990

To be held at The Institute of Petroleum, London

There are many different ways of providing information services in response to industry needs. It is not always easy to ascertain which method of approach would be the most effective or the most economically viable.

This conference will seek to establish an evaluative aspect to information systems within the energy industries. It will examine alternative ways of organising and retrieving information with the emphasis on practical applications.

Speakers will give presentations based on their professional experience and expertise.

Topics to be covered will include:

- *Market Research
- *Online versus Traditional Methods
- *Records Management
- *Centralised or Decentralised Systems
- *Environmental Data
- *Standards
- *Cost Justification

For a copy of the registration form, please contact

Caroline Little, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR.
Telephone: 071-636 1004. Telex: 264380. Fax: 071-255 1472.

After the Monopolies Report . . . the challenges of the 1990s

On 6 June delegates to an Institute of Petroleum conference on petroleum retailing heard Mr David Clayman, Managing Director, Esso Petroleum Co Ltd and President, UK Petroleum Industry Association, give the keynote address. He said:

The 1990s will undoubtedly be years of rapid and major change which will impinge on the social, economic and political structure of our country. The petrol business will not stand isolated from these developments but will continue to evolve in the future, as it has in the past.

But at least we can face the future with the doubts and uncertainties about the structure of the industry behind us. The Monopolies and Mergers Commission inquiry into our business in 1989 was ill-founded and unnecessary. Despite comments to the contrary there was never any doubt that the facts spoke for a highly competitive business which is serving the needs of the motorist in a fair and efficient manner. It is in the interests of all involved in petrol retailing that the MMC concluded that the structure of the industry is pro-competitive and that free market forces operate in the public interest.

There is, however, a burden on us all to reduce the chance of this from happening again. We must learn to communicate more openly with the public, the press and with the government. In particular, the industry must continue to explain its policies and actions in a more open and comprehensive manner.

Three of the major influences on the petrol retailing business in the 1990s are likely to be the environment, technology and brand image.

The public's concern for the environment has gained momentum in recent times and the petrol and motor industries are seen by many as natural



D Clayman

targets. In successfully introducing unleaded petrol into the United Kingdom over the past few years we have demonstrated we can work constructively in partnership with government to reach effective and sensible solutions. However, with ever more complex and demanding environmental issues facing us, we must continue to work together to find cost effective solutions supported by good scientific principles.

Technology is already changing the face of retailing and the petrol business will be no exception. New developments in payment systems, plastic cards, improved communications, back office computing, outdoor payment terminals and streamlined information flows will revolutionise our industry. While this technology advancement will undoubtedly provide major efficiency benefits together with improved and more timely management information, we must not lose sight of the needs of the consumer for convenience, service and value.

A third major influence on petrol retailing in the 1990s is that of brand image. In the 1990s the customer will be even more demanding, discriminating and more informed about what he wants. He will expect from his petrol

station a range and quality of service which could not have been conceived even in the early 1980s. Although it will vary with the customer and demographics, it is the correct marketing mix of products, services and retail presentation that will create an environment to which a customer will wish to return. Also, in a climate of growing social consciousness, there is a rising demand for public accountability of our business which will inevitably impinge, not only on the industry's image, but also on the individual companies. All this means the winners will be the companies with the best brand image.

As we address the many challenges of the next 10 years, it goes without saying that one challenge will remain unchanged: to earn an acceptable profit in what will remain a fiercely competitive industry. The petrol retailing business in the UK must keep pace with all other sectors in the fast changing UK retail market and we can look forward to exciting times ahead.

Two papers from the conference are reproduced on the following pages. A complete volume of conference proceedings, to be published shortly, will be available from the Institute of Petroleum.

Retail opportunities and challenges in the 1990s

By Neil Lambert, Manager, Retail Sales, Texaco Ltd

Of all the companies currently involved in the UK retail sector, Texaco is probably as well qualified as any, to talk about the 1990s. if only for the challenges and opportunities we faced in the 1980s.

Leaving aside the price wars of the early 1980s and the resultant negative retail bottom line earnings that these created, there were a number of situations peculiar to Texaco which made the 1980s 'very interesting'.

- Firstly, our acquisition of Chevron's downstream European interests – very much an exciting opportunity.
- Next, our decision to completely rebrand our European network, with the new and dramatic System 2000 image – again a bold and calculated marketing strategy.
- In other areas, our bid for Getty Oil was at first seen as an initiative in the true buccaneering spirit of the early days of the industry. But in the wake of these opportunities came the challenges:
- The litigation with Pennzoil in the United States
- The need to seek Chapter II protection
- The bitter takeover battle with Carl Icahn
- The selling off of our German and Canadian interests to finance the Pennzoil settlement.

Then, following resolution of these problems, the emergence once again of opportunities. These were created by a re-structure programme, a new entrepreneurial attitude and a complete change in corporate culture, whose most spectacular manifestation worldwide is our new Texaco/Saudi joint venture company, Star Enterprise, operating in the south and south-east of the United States and responsible for all Texaco's downstream activity in that area.

The vertical integration downstream by upstream producers is obviously a distinct prospect in the future and may well become both a significant challenge and a significant opportunity.

Future developments

I have so far talked almost exclusively about the past. Let us now look forward to the final decade of this century. Let me start by looking at the players within the retail market. I think it is fairly safe to assume that all the majors will continue to have a significant presence in the market with Esso and Shell continuing their dominance, and market share being a hard fought battle. However, some changes – perhaps even dramatic ones – are inevitable.

We know that Elf has now finally acquired Amoco but I expect other changes to follow.

For example, much has been expected of Kuwait since their emergence on the UK scene but unlike their activity on mainland Europe, very little progress has been achieved.

Surely they cannot continue to be satisfied with less than 2 percent of the market and a small company-owned site profile? I would therefore expect to see some movement and some change in this company's market presence.

changes will occur.

I have so far reviewed possibilities and not certainties. There is, however, one trend which I am absolutely confident in predicting. I refer to the position in the market-place of the hypermarkets. Most of the major grocers are now looking at 'out-of-town' superstores and if the number of planning applications being filed is any indication, this method of petrol retailing will become even more prevalent than it is today.

Indeed, I believe that it is more than likely that the hypermarkets will at least double their current 7 percent market share over the next 10 years. I cannot foresee the degree of dominance that has been achieved in France but, led by Tesco and Sainsburys, their influence will be substantial, with all the attaching local problems that this can create.

In this connection, and moving from the pure retail to the wholesaling aspects of hypermarket operations, one is forced to consider the implications of a change in hypermarket purchasing policy. Will they continue to

'Hypermarkets will at least double their 7 percent market share over the next 10 years'

Similarly, with the opening up of the Spanish market, Repsol have made very clear their intentions of establishing an increasing foothold in the British Isles. It will be interesting to observe if, and how, they achieve this goal but, again, I am convinced that

buy from established oil company sources, or will they look at alternative, open market, sourcing? In either event, their likely growth will have considerable consequences on the UK petrol retail scene.

In the same context, let us not forget

the role and presence of the independents. It would appear that the Herons, the Norfolk Houses, the Action stations, the Oaksteads, the Saves and the Margams of this world will continue their acquisitions. It also seems likely that they will continue their retail site operations. Some will obviously be tempted by lucrative take-over bids; some will be succeeded by currently unknown, perhaps localised entrepreneurs.

Whatever the scenario, it is likely that they will increasingly influence and impact upon the market place, which, following the Monopolies and Mergers Commission report, should retain its free enterprise, relatively non-restricted nature.

The role of the independents, in whatever guise, is a very interesting subject and their role *may* in the long term, depend on one important factor, namely total European refining capacity.

Most pundits forecast that the market will continue to grow, albeit at a slower pace than in recent years. *But* with no new refineries being built, or to my knowledge, planned in the foreseeable future, the important question that arises is 'will current and future refining capacity be sufficient to meet future demand?'

If the response is negative, then eventually surplus product will disappear, competition for independent supply contracts will be less fierce and presumably less costly to the wholesaler. This, however, is pure presumption and currently open to many contradictory viewpoints.

1992 onwards

During the next decade, we in the United Kingdom will become more and more European in our outlook, although I personally fear for our overall involvement in the European process due to our own severe linguistic failings, compared to the linguistic talents of our European cousins.

Be that as it may, post-1992 will bring changes. The thorny subject of tax harmonisation is but one example. Whatever the date of implementation, whatever the eventual compromise agreement, the price differential between petrol and diesel will grow and this inevitably will create increased demand for diesel cars and diesel fuel, at the expense of petrol.

In the same vein, as European integration becomes a reality, I would expect many of the major companies to increasingly develop Pan-European strategies for both sales and marketing activities. This could very easily



Neil Lambert — Texaco

involve not merely European corporate images but European advertising campaigns and perhaps, even European promotional activity.

A further subject, which has a momentum of its own, but which will be closely connected with 1992, is the question of environmental issues impacting on our business – indeed, these issues are likely to be amongst the major challenges we face.

Looking at current requirements on mainland Europe, it is inevitable that much of the legislation creating change will emanate from Brussels – a fact emphasised to me during a recent visit to the Netherlands. In that country, there is an approximate mandatory £100,000 per site clean-up cost

on-site operational problems for the future.

This also applies to the problem of soil contamination and clean-up. We have to accept that the products we sell are pollutants with long-term harmful effects. It is therefore inevitable that stricter control, more regulation and possibly governmental audit and inspection will become part and parcel of our everyday *modus operandi*.

My major concern on these environmental issues is not the ability of the industry to handle the technical problems that arise – indeed, on this subject I have the utmost confidence – my problem concerns those consequential costs that such programmes bring. We *do* need to protect and

'The price differential between petrol and diesel will continue to grow'

associated with every major raze and rebuild – something from which we have been immune to date in the United Kingdom but something which will eventually be an additional cost burden.

Environmental issues

Looking briefly at some of the issues in the environmental category, it seems certain that vapour recovery requirements will move all the way down the distribution cycle from the current terminal and tanker level, to actual recovery either at the pumps or on the vehicle itself. The problems experienced in the United States on this issue provides clear indication of the difficulties this will produce.

Equally, the likely need for the double skinning of underground tanks will not only increase constructional costs, but could also bring considerable

safeguard the environment *but* working with the very volatile and narrow margins in our industry, there can be no other method of recovering these extra costs except through higher product prices which will eventually fall on the end consumer, the motorist.

On the subject of petrol prices, let me make a prediction. A combination of rising crude prices, the resulting inflation of Platts prices, tax harmonisation, environmental costs and government's desire to link duty with RPI, will together create a price of at least £3.50 per gallon before the end of the decade. Whether this is a challenge or an opportunity I cannot say, but it will certainly need careful management and effective communication – on this latter subject, a little more later.

So far I have assumed that there will still be a petroleum retailing industry in 10 years' time. It is undeniable that there are alternative forms of energy,

such as battery power or the dawning of a new 'electric car' era. This, however, I feel is premature – the technology is insufficiently advanced. Nor do I feel that replacement derivatives, such as alcohol, will become serious alternatives.

I am confident therefore that the service station, selling petroleum-based products, will still be very much part of the retailing scene.

However, I do feel that the 'product' in its variety of senses, will continue to be enhanced, with particular emphasis on cleaner burning gasoline and diesel fuels with much longer emission characteristics – yet further examples of our industry's need to consider environmental and 'greenhouse' implications seriously.

Product differentiation

Whilst on the subject of products, there is one unknown factor. 'Will any company attempt to mount a major product differentiation campaign?' We all know that Shell failed spectacularly some three years ago. Equally, the British motorist has been diffident, to say the least, in reacting to product quality claims.

I cannot foresee the future on this issue but suffice for the moment to suggest that it would be a very bold marketing move to embark on such a campaign and one which would have to be supported by a massive advertising and motorist education programme – all in all, a very high risk strategy.

It is generally assumed that the uptake of unleaded will continue to increase, probably to something like 95 percent of sales within 10 years.

I did feel some 14 months ago when BP launched their Super Green that the move was premature and at the time,

manufacturers – and could result in the re-appearance of the recently demised blender pump.

Information technology

Having now mentioned equipment, I feel on very safe ground predicting the continued introduction and enhancement of information technology onto service stations. It is inevitable that there will be more sophisticated equipment at the point of sale, together with electronic card readers, barcode readers and laser scanners.

These will in turn, be linked to 'back office micros' which will communicate directly with a centralised point to monitor sales and stock levels.

The possibilities are endless, especially as 'on-line' facilities become increasingly available. For the moment however, I refuse to speculate whether these technological advances will lead to the introduction of dual pricing, the wider use of debit cards, or even the launch of an oil company credit card. These are now a significant feature of some other markets, particularly the United States and Sweden.

I would suggest that the countries, which have gone down this path, have not experienced the customer loyalty they might have anticipated but have instead seen the introduction of rebating and special offers which have naturally led to even smaller margins and further reduced profitability.

Returning briefly to technology and systems, I see further progress on communicating tank inventory information to a central order centre, with the subsequent delivery being made by DCD (driver controlled delivery).

A continuation of this trend would enable us to do away with people

service, are all likely to lead to a requirement for a more educated, flexible and articulate quality of site staff – a subject to which both wholesalers and retailers must diligently address themselves and which to date from my 25 years experience we have all failed rather dismally.

I have not gone into detail about future possible changes in the way products are promoted. Suffice to say that change will take place in the 1990s but I am not going to be naive enough to share Texaco's future thoughts on that subject.

Perhaps I should have discussed future government transport policy and the impact this will have on petroleum retailing but on this issue I feel my crystal ball is as hazy as Mr Cecil Parkinson's.

In addition, it may have been remiss of me not to talk in depth about the effect of the new uniform business rate. The reason is simple. The effect is *not* uniform and this is but one of a number of factors which I feel will create further site rationalisation in the future.

Whilst on that particular subject, I will make one prediction. I forecast that there will be fewer than 15,000 fully operational service stations by the year 2000 – a closure rate of approximately 800 per year. Therein lies a further challenge and an opportunity.

We have effectively been given a clean bill of health by MMC but I suggest that the perception by the public and the media of petroleum retailing in general and the oil industry in particular still remains at a very low ebb.

To quote my own chairman, Mr Peter Bijur, at a recent oil industry club lunch, the industry is very much perceived as being a polluter, a profiteer and a colluder.

To illustrate this, over 60 percent of respondents to a recent Gallup survey agreed that the industry is a 'necessary evil', a fact, from which none of us can take comfort.

I believe that a bad industry image costs everyone individually, in many ways, both directly and indirectly. I also believe that we have a good story to tell. We are efficient; we help to sustain a lifestyle people desire; we provide jobs; and we contribute massively to the economy.

What we need to do is to do a better job of communicating. We need to communicate with candour, with clarity and in a pro-active rather than reactive way. With everyone playing a part – and not merely leaving it to others – we can, and must, redress the balance. ■

'I forecast that there will be fewer than 15,000 fully operational service stations by the year 2000'

added to the confusion in the mind of the motorist. However, with virtually all companies now having jumped on this particular bandwagon, who would bet against a third unleaded grade in the foreseeable future? Following the examples of Germany and the United States this appears an odds on wager for the United Kingdom.

This would certainly give our supply colleagues some major headaches and would be a significant challenge to our service station design and construction experts – new builds excluded of course – but would delight the pump

altogether! From my perspective, this is a flippant remark as I do *not* see any proliferation in the 'ghost' station or unattended site experiments.

In fact, perhaps the reverse. Service, as against self service, may well become more of a customer need and expectation. In this connection, I feel a major challenge during the 1990s will be in the area of site staffing.

Wage competition from other retailing industries, the increasing sophistication of on-site service station retail operations and the need for considerable advances in customer care and



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1991 IP Annual Dinner

The Institute of Petroleum's Annual Dinner in 1991 will be held at Grosvenor House, Park Lane, London W1, on **Wednesday 20 February**.

IMPORTANT — PLEASE NOTE

Ticket application forms will be sent to all UK/European individual and collective (company) members as a loose-leaf insertion in their OCTOBER copy of Petroleum Review.

Non-UK/European Members who wish to apply for tickets should contact **Caroline Little** at the IP at 61 New Cavendish Street, London W1M 8AR as soon as possible. Tel: **071-636 1004**. Telex: **264380**. Fax: **071-255 1472**.

**THE CLOSING DATA FOR RECEIPT OF
TICKET APPLICATIONS WILL BE FRIDAY 26
OCTOBER 1990.**

Elf concentrates on communication & service

By JR Hunt, Marketing Manager, Elf Oil (GB) Ltd

For the first part of my presentation, I want to talk about communication – communication between each of us and the end-user of our products – the man or woman in the car. I believe the time is right for the joint communication of our collective messages to the end-user. Had we used this form of communication in the past, we would not be suffering the bad image we have now.

Let me give you a couple of problem areas which could have been avoided through the use of collective communication. We recently introduced unleaded fuel. To say our customers are confused is an understatement!

We have bombarded Joe Public with leaflets and booklets which often contradict both manufacturers' recommendations and data prepared by the motoring organisations. We've told him he can use unleaded petrol without any problems, provided that on some cars he remembers that one tank in four should be leaded. We even give him a pocket abacus to remind him! We then wait until he is finally switched on to the new product, enjoying his 10-13 pence saving on every gallon, before rolling out our *piece de resistance* — super unleaded.

Joe's now not only confused at the pump; he's angry at the till. We have taken from him the savings we ourselves had promised. Of course, the CLEAR campaign assisted us in communicating the unleaded message to our customers and I think they did an excellent job with very little co-operation from ourselves. Admittedly, some companies did help but wouldn't it have been a good idea if we had all put a little more time and effort into presenting a united campaign rather than channelling all our resources into each doing our own thing and trying to

convince the consumer that our unleaded was the best?

I'm quite sure that if the unleaded issue been in the hands of a grocery company, things would have been different. Super unleaded would have been introduced first so that the majority of vehicles could use it without conversion. Not until later, would they have introduced premium unleaded as a cheaper version for 80–90 percent of cars, making the petroleum industry the hero rather than the villain of the piece.

'If the unleaded issue had been in the hands of a grocery business, things would have been different.'

Had we used a collective campaign, not only would we have put across a better message, we would also have seen more cars changing to unleaded petrol. This in turn would have increased, in the public's eyes, the oil industry's contribution and commitment towards a cleaner environment.

We are now in a situation whereby our calls to government for greater tax differentials on unleaded are seen as a sole contribution. Whilst these moves are important, it would be naive on our part to assume that they represent the only satisfactory solution.

Another example was highlighted for me recently by a friend, who said, 'This industry must be loaded. It seems every petrol station is installing new pumps!' He knew nothing of the regulatory changes forcing us to spend large sums of money to meet the new legal requirements, not because he is stupid, but because no one told him. He did not know because we have no collective communication medium with the public and consistently fail to deliver to them vital industry information.

Dual pricing

We now have an absolute cracker bubbling in the background — dual pricing. I dread to think how much confusion we can create and what the

public are going to think of us by the time this issue is finally sorted out.

Only recently in the House of Commons, we as an industry were in the firing line for pricing in litres. The MP concerned said he felt 'conned' just as he did when as a nation we turned decimal. So, why not have a campaign to explain why we are pricing in litres, stressing how easy it is to convert?

Through the European Community, I believe we will be required to bring our prices for fuel in line with the rest of Europe. This will mean a price

increase and who, I wonder, will be blamed for this — the oil companies or the government? Unless all of our customers listen to Radio 4, I think it will be us.

The point I am trying to make is that we are all doing our own thing when we should be addressing our customers as a group, a single entity. Marketing is about communication be it a product, an idea or an image. By ignoring the possibilities of collective communication, we are effectively discarding the strongest medium of communication available to us.

I now call on us all to get together, to communicate between each other and provide the public with collective industry statements on current key issues such as unleaded petrol and dual pricing. If we continue to have this masonic-like secretive approach, the public will become increasingly suspicious of us. We should, of course, not fear monopoly reports which do create unnecessary work and undue public concern. I believe that with more efficient communication to the public and the authorities, the likelihood of a further report would be remote.

Such action would neither replace nor conflict with individual advertising or promotional campaigns and by creating a collective advertising body, practised in the simple art of communication, we would be able to greatly enhance our industry's public image.

Operations

As we face the challenge of the 1990s, we must, as an industry, be aware that, no matter what we do with new forecourt images and shop concepts, if we don't recognise our obligations towards our operators we shall fail. Of course, our image and services are important but most companies already pump more than enough resources into these areas. What we must realise is that the success of those investments relies on our operators and their ability to maintain and present our sites. If we fail to motivate our operators, we will fail to realise the potential marketing opportunities provided through our corporate images and investment.

Those companies able to create an environment wherein good operator service is 'automatic' will win the battle for customer loyalty, those who can't create such an environment will fail.

Site operators

We at Elf are looking at our obligations to our operators and indeed have been doing so for the last year. We have been looking closely at what sort of people our operators are and how best to motivate them sufficiently so as to achieve both corporate and personal objectives. Maybe we should pause for a moment here and consider the operators' 'average working day'.

He could be on his site from 6.45 am to open at 7, having completed his routine 'setting out the site' tasks such as putting the extinguishers and fire buckets on the forecourt, attaching air hoses, checking the carwash etc etc. He then goes back into the shop, does some paperwork, checks the overnight polling and is finally ready for the customer.

At 9.15 he is wondering where his cashier is. He has not turned up so the operator finds himself running the till whilst simultaneously trying to take deliveries for his new convenience store, fill shelves, change prices and check codes etc etc... Up to this point, our customers are not receiving very good service, not necessarily because the operator is being rude but because he is so busy. In fact, the difference between an operator being judged 'rude' or 'polite' is very slight. 'Rude' does not necessarily have to involve him saying words to the effect of 'Get lost and go to a different service station'; forgetting to say 'Thank you, Mr Hunt', as he returns my credit card can sometimes be enough. If other staff let him down, he may end up working



JR (Rikki) Hunt

through to 11 at night, an exhausting day, and he is back at 6.45 tomorrow.

All of us have days like that — I certainly have. Not for the same reasons but nevertheless certainly as long. But it is more likely to happen to our operators on a regular basis and I for one would not choose to do such a job, especially in view of the rewards.

How then can I overcome all these problems and attain the level of customer service I require? How can I get this operator to be 100 percent positive in his approach? How can I persuade him to take on a fresh member of staff who, like bringing a substitute with fresh legs into a football match, will find it far easier to be polite to our customers than somebody who is nearing the end of a 9-or 12-hour continuous shift.

Perhaps I can find a way of rewarding him for the work he is doing. But what should this reward be? Give him loads of money? This would certainly suit most people but from a company position, this is financially difficult. Do I give him greater security? A useful measure but it won't in itself solve any problems. Do I try to strike a better relationship with him? Yes, some people would cope with this scenario but is it enough? Or do I do a little of all of these things. Put them in a position where they can earn more money, give them greater security and strike a better relationship with them.

Let's look at each of these ideas.

Money makes the world go around. None of us works in industry for health reasons. We all want a return on our time. As an employer, we have to find the level of pay which, whilst motivat-

ing our operators, will not bankrupt us.

Showing our operators that we consider them 'partners in profit' and not 'opponents in earnings' would go a long way towards helping to develop the relationship we seek. In the past, our operators have been suspicious of our motives and historically, I think their suspicion has been justified. On asking a licensee the size of his shop sales, how many of you have added 50 percent because you know he is not being 100 percent honest? How many of you get annoyed when they give you false information? Why shouldn't they? They know that you are going to penalise them next time they renew their licence.

We need to develop a formula that means that when things are going well, we both win and when things are going badly, we both suffer. Our operators would be only too pleased to tell us the facts, good or otherwise, because they would realise that overall we want to maximise profit for both parties not just the oil company. Of course, we just make a return on our investment but this does not have to be at the expense of our operators.

Security of tenure

Security of tenure is another topic bound to send shivers down the back of any oil industry man.

It is widely believed inside the oil industry that the long leases have allowed an element of bad operators to outstay their welcome. I have a lot of sympathy with these views and believe that this is a major factor in the generally poor level of service on most of the service stations in this country. However, how much of this problem is rooted in our poor treatment of operators and historical failures in the recruitment field.

The over-reaction of the industry has been to switch from long leases to commission-style agreements, so now we give operators 28 days! What sort of businessman is going to get out of bed if he knows that on a whim, the oil company can fold his business at short notice with no compensation.

Things do not change overnight. At Elf we are not attempting to create flash-in-the-pan benefits — we are committed to a long-term reform programme! We are committed to change.

We are about to launch an agreement which gives far greater security to our operators, whilst still giving a comfortable level of control in our hands. We intend also to give the operators the right to sell this agreement to a third party (approved of course by Elf), enabling them to build

up a solid asset base. Something worth working for. We do not intend to charge for this agreement but will only select entrepreneurial operators who we believe are capable of working in a corporate environment. The only cost to the operator is the shop stock.

It is easy to say he builds up an asset base which he can sell as goodwill. But how does he go about doing this? The published industry average for shop sales is £1,600 per week — not much goodwill worth buying there. I believe we must work with our operators to get better sales from what is essentially an untapped opportunity. We should be targeting £4,000 sales averages which, although low when compared to some of the figures bandished about the industry, does represent a realistic average. Tobacco should not be more than 30 percent of this if it is to work comfortably. Someone asked me recently about sales per square foot evaluations.

I would dismiss any judgement based on this criteria. For instance, near my home in Macclesfield, there is a Mobil shop with a floor space of 12 square feet and sales of £7,000 per week or £583 per square foot. To try to



'It is our operators and their staff who draw customers back time and time again.'

draw an analogy between this and a supermarket is nonsensical. A supermarket with a floor space of 40,000 square feet and sales of £200,000 per week, for example, gives a sales per square foot of £5. To date, we do not have good enough shops or sales in enough sites to draw such comparisons.

Maximisation of sales

At Elf, we have created the Elf Retailers Association which is a modular method of shop organisation designed to cater for sites with shop-floor areas between 12 and 2,500 square feet. However, for optimum expected return on investment, we look to build only 600–800 square feet, as we have established that 800 square feet can cope with shop sales of £12–15,000 per week — a figure which is highly unlikely to be taken at every petrol station.

The Elf Retailers Association (ERA) now has in excess of 250 members — a figure which is growing each week. The association is designed wholly to pass on our retail knowledge to our operators. We maintain regular contact with the ERA and are not deserting them as soon as the ink is dry on the agreement. The services we offer in-

clude group negotiation, group discounts, payment terms, the flexibility to take account of local needs and much more; the cost is only £35.

This system was not designed directly to make Elf money; it was designed to help our operator make money. We believe that total site profitability is becoming more and more important and see the shop as a major area of opportunity. You may wonder why we bother charging £35, a fee which does not even cover the cost of the operator's manual. My thinking was that, if I gave the manual to all operators free of charge, I would have 450 members but no-one would read it.

By the use of clever marketing ideas, we may be able to attract customers to our sites once, maybe half a dozen times. But it is our operators and their staff who draw them back time and time again. A well-motivated and therefore happy operator will have happy staff and regular customers.

We do all have a problem with some cashiers' attitudes towards our customers. We have all gone into sites and seen console operators reading books. One actually said to me "Won't be a minute mate, just finish this chapter!!!" I was also once told off by a cashier because the credit card I wished to use

for payment was not set up on the electronic card reader.

An American friend told me once that we are a nation of subservient customers who never complain. I don't agree. The difference between ourselves and the Americans is that we use our feet and not our mouths. Rather than complain verbally, we simply go elsewhere. Bearing this in mind, we believe we should be targeting the operator and his staff and letting them target the customer in the service war.

I hope you can see from what I have said that we at Elf stand firm in our belief that we must endeavour to give our operators a little of each of the things I have mentioned. We must help them make more money, give greater security and do our best to develop better relationships. We believe that if we provide all these things we will have happy, profitable operators and we will be a happy, profitable oil company.

'It is up to us'

I would like to summarise by saying that improving our image through better communication and by achieving better operational standards and services from our operators using the methods mentioned is well within our grasp. No-one owes us anything: it is in our hands. In short, 'it is up to us'. ■

Faster growth of unleaded petrol in Europe

By Dr Ian Berwick, Director General, UK Petroleum Industry Association

In 1989 the pace of the transition to unleaded petrol accelerated. Over the year unleaded accounted for 25 percent of all petrol consumed in Western Europe – EC plus EFTA countries. This compares with nearly 10 percent in 1987 and 15 percent in 1988.

Table 1: Petrol Grade Splits in Europe in 1989

		<i>Total petrol consumption (million tonnes)</i>	<i>Leaded grades %</i>	<i>Super %</i>	<i>Unleaded Premium %</i>	<i>Regular %</i>	<i>Total unleaded %</i>
EC							
West Germany		25.97	41	5	21	33	59
United Kingdom		23.93	81	1	18	—	19
France		18.50	98	1	1	—	2
Italy		12.72	98	—	2	—	2
Spain		7.36	99.5	—	0.5	—	0.5
Netherlands		3.37	63	3	32	2	37
Belgium		2.42	81	—	15	4	19
Greece		2.10	100	—	Neg.	—	Neg.
Denmark		1.46	59	4	31	6	41
Portugal		1.22	99.5	—	0.5	—	0.5
Eire		0.87	93	—	7	—	7
Luxembourg		0.38	79	—	20	1	21
EC Total	mte %	100.30 100	77.27 77	1.86 2	12.43 12	8.74 9	23.03 23
EFTA							
Sweden		4.35	50	Neg.	50	—	50
Switzerland		2.98	56	—	44	—	44
Austria		2.52	57	—	13	30	46
Finland		1.83	84	—	16	—	16
Norway		1.78	73	Neg.	27	—	27
Iceland		0.10	100	—	—	—	—
EFTA Total	mte %	13.56 100	8.20 60	— —	4.61 34	0.75 6	5.36 40
Total 18 countries	mte %	113.86 100	85.47 75*	1.86 2	17.04 15	9.49 8	28.39 25
*Premium leaded 72% Regular leaded 3%							

Table 2:
Increase in Unleaded Consumption in Europe
Between 1988 and 1989 (million tonnes)

	1988	1989	Increase
United Kingdom	0.26	4.65	4.39
West Germany	11.57	15.20	3.63
Rest of EC	1.55	3.18	1.63
EFTA	3.80	5.36	1.56
Total	17.18	28.39	11.21

Once again West Germany made much of the running, increasing uptake year-on-year from 45 percent to 59 percent. However, in the United Kingdom the introduction in March of a substantial tax differential in favour of unleaded increased uptake during 1989 to 19 percent, dramatically higher than the 1 percent registered in 1988. Belgium, also helped by a tax incentive, achieved a similar 18 percent increase in its unleaded market. In the Netherlands and Denmark unleaded demand also increased significantly. Elsewhere in the Community progress was more limited but the main EFTA countries continued to register strong growth, most notably Finland. The average EFTA unleaded uptake in 1989 reached 40 percent. The details of the average total grade splits in the year for European Community and EFTA countries are shown in **Table 1**.

West Germany, the largest petrol market in Europe, accounted for just over half the total unleaded sold in Europe in 1989 (**Table 2**). The United Kingdom is the second largest petrol market and in 1989 increased unleaded deliveries to the inland market by 4.39 million tonnes. This represented approximately 40 percent of the increase of unleaded in the whole of Europe during the year, a notable success for all concerned in the promotional campaign and a monumental achievement by the UK refining and distribution operations. Unleaded consumption in the United Kingdom in 1989 was higher than the whole of the rest of the Community, apart from Germany.

Progress in France and Italy was relatively slow but tax incentives were introduced in both countries during the second half of 1989 which are having some effect in stimulating demand. In Spain the price of unleaded petrol remained higher than the leaded grades and domestic demand was very small.

Availability

Around two-thirds of the 145,000 or so European filling stations sell the main unleaded grade: 95 RON Euro-Premium. This is substantially up on the 40 percent in April 1989. The Netherlands and all five large EFTA members have 100 percent availability and in the United Kingdom, Germany, Belgium and Denmark coverage is over 85 percent (**Table 3**). Germany and Austria, which together account for 97 percent of the Regular unleaded sold in Europe, also both have 100 percent availability of this 91 RON grade.

In France and Italy unleaded availability has increased greatly over the past year following the introduction of the tax regimes favouring unleaded. However, Spain, Portugal and Greece still have little more than tourist networks in place, though plans are being made to increase availability.

The Super grade of unleaded, which accounted for 1.6 percent of petrol sales in Western Europe in 1989, is sold in 10 countries. Availability is, however, relatively limited except in Germany where 65 percent of outlets sell Super grade. In France, Denmark, Netherlands and Norway between 25 and 30 percent of outlets offer the grade, while in the United Kingdom the figure is around 20 percent. In the other five countries availability of Super unleaded is very limited.

Current national uptakes

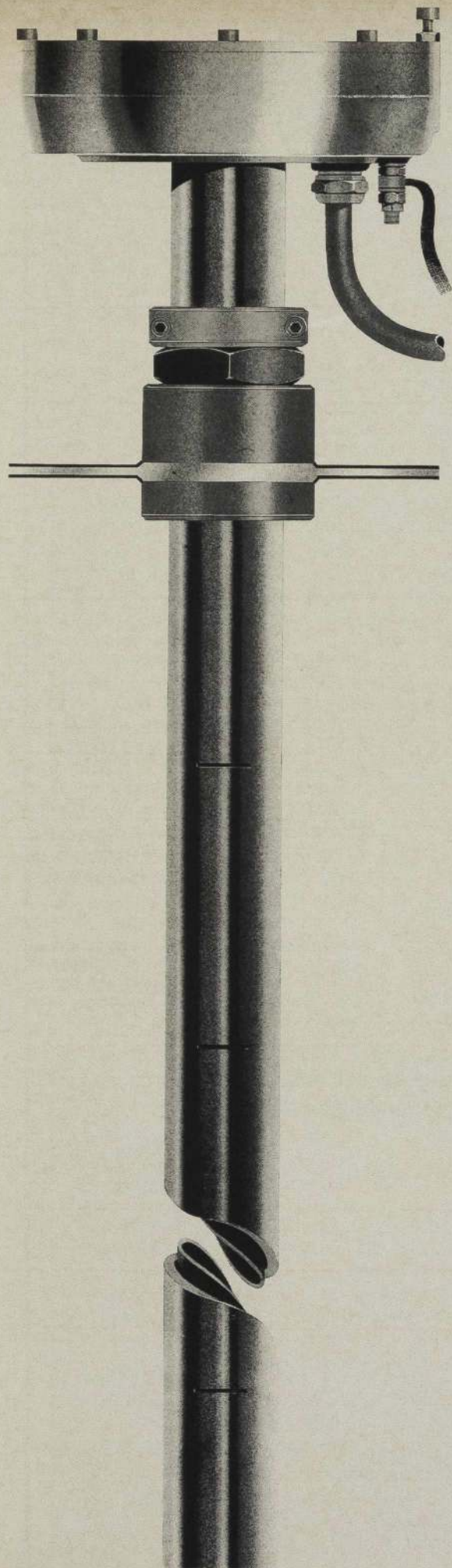
Table 4 shows the April 1990 grade splits for all the major countries. The German market has now passed the two-thirds unleaded mark. There the Super grade, introduced early in 1989, has given an upward impetus to the sales of unleaded. The two Premium grades are now accounting for most of

Table 3: Availability of Unleaded in Europe
at Beginning of 1990

	Total petrol outlets	Outlets with Euro-Premium unleaded	
		No.	%
EC			
West Germany	18,542	16,870*†	91
United Kingdom	19,756	18,173†	92
France	26,000	7,500†	29
Italy	33,900	15,900†	49
Spain	5,023	250	5
Netherlands	7,400	7,400†	100
Belgium	5,400	4,860†	90
Greece	6,000	150	2
Denmark	3,154	2,700†	85
Portugal	1,800	70	4
Eire	3,400	800	23
EFTA			
Sweden	3,198	3,198†	100
Switzerland	3,939	3,939	100
Austria	4,021	4,021*	100
Finland	1,937	1,937†	100
Norway	2,493	2,493†	100

*All German and Austrian outlets also sell Regular grade unleaded.

†Some outlets also sell Super grade unleaded.



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the growth in Germany, the Super grade being used by motorists unwilling or unable to re-tune engines to use the Premium unleaded grade.

Demand for Super grade in Denmark has also greatly increased for similar reasons to those in Germany; unleaded now represents more than half of all Danish petrol sales. In France Super grade has accounted for all the growth in unleaded during 1990; it is not yet available at hyper-market outlets which sell a large proportion of petrol in France.

In most of the EFTA countries unleaded has continued to grow, spectacularly in the case of Finland, less so in Sweden and Norway. Norway is the only EFTA country with significant demand for Super grade.

Cross-blending of Premium leaded and Premium unleaded grades on a 50:50 basis is widely applied in Scandinavian countries and in Austria. This is a transient arrangement to maximise use of equipment at filling stations which is possible while the majority of vehicles are not yet fitted with catalytic converters. The resultant grade with 0.07 g/l lead and 96 RON can be used by vehicles not equipped with hardened valve seating and reduces any re-tuning difficulties in those that are. Some of the unleaded consumption recorded for these countries is thus actually used in this blended grade.

Lead emissions

In most countries the primary reason for the introduction of unleaded petrol has been to enable the use of catalytic converters to reduce gaseous vehicle exhaust emissions. In the United Kingdom the change to unleaded has been driven mainly by concern about the health hazards of lead emissions from vehicles. From this latter point of view it is of interest to review the progress being achieved in Europe to reduce lead emissions. **Table 5** shows the tail-pipe emissions of lead from vehicles in the four largest national markets and for the remainder of the Community for 1988, 1989 and annualised estimates of the current levels based on April 1990 leaded petrol consumption. All five markets show substantial reductions, with the United Kingdom comparing favourably with others in the Community, Germany excepted. The UK current level of lead emissions of 2,150 tonnes per annum is less than one-third of the 7,500 tonnes emitted in 1980, even though petrol consumption is 25 percent higher than a decade ago.

Table 4: Percentages of Total Petrol Consumption

	<i>Super %</i>	<i>Premium %</i>	<i>Regular %</i>	<i>Total unleaded %</i>
West Germany	7.0	25.5	34.8	67.3
United Kingdom	3.6	28.7	—	32.3
France	9.0	1.0	—	10.0
Italy	—	4.3	—	4.3
Spain	—	<1.0	—	<1.0
Netherlands	5.0	35.0	—	40.0
Belgium	Neg.	25.0	Neg.	25.0
Greece	—	<1.0	—	<1.0
Denmark	15.0	34.0	7.0	56.0
Portugal	—	<1.0	—	<1.0
Sweden	Neg.	+50.0	—	+50.0
Switzerland	—	49.9	—	49.9
Austria	—	16.0	30.0	46.0
Finland	Neg.	51.0	—	51.0
Norway	6.0	29.0	—	35.0

Conclusion

The vital factor in stimulating the shift of demand from leaded to unleaded has undoubtedly been the introduction of tax regimes favouring unleaded. Recent French and Italian experience has endorsed this conclusion.

In the United Kingdom all new vehicles sold from October this year must be engineered and tuned to accept unleaded. However, the next European-wide policy affecting refuelling habits will be in 1992 when new cars will have to be equipped with catalysts in order to meet tighter emission standards. Until then tax differentials to encourage the shift to

unleaded will continue to be essential.

During 1990 more than one-third of the European Community's petrol demand will be met by unleaded grades. However, at the same time the variations in the progress of individual member states in the transition to unleaded is becoming wider. The slower-moving countries may expect Commission pressure to get effective supply and fiscal incentives in place before 1992. ■

Acknowledgement

Thanks are due to all the oil industry bodies in the various countries who supplied the data on which this paper is based.

Table 5: Emissions from Vehicles in EC: 1988, 1989 and Current Levels (tonnes)

	<i>1988</i>	<i>1989</i>	<i>Current Annual*</i>
West Germany	2,050	1,520	1,260
United Kingdom	3,200	2,600	2,150
France	7,100	4,800	3,930
Italy	4,400	4,120	3,570
Rest of EC	4,700	3,960	3,540
Total	21,450	17,000	14,450

*Annualised figures based on April 1990

Note: The lead content of leaded petrol varies: Spain, Portugal and most of Greece are at 0.4 g/l; since 15.3.89 France has been at 0.25 g/l and since 1.7.89 Italy has been at 0.3 g/l, while all other EC countries and Athens are at 0.15 g/l.

FORTHCOMING EVENTS

July

6th

London: Seminar on 'Cogeneration'. Details: Mary Scanlon, BIEE, 37 Woodville Gardens, Ealing W5 2LL.

9th-11th

Wrexham: Conference on 'Ion Exchange Processes'. Details: Ion-Ex '90, Conference Secretariat, Research Division, The North East Wales Institute, Deeside, Clwyd CH5 4BR. Tel: (0244) 831531. Fax: (0244) 814305.

9th-13th

Southampton: Course on 'Noise Control for Engineers in Processing Industries'. Details: Ann Barrett, Short Course Secretary, ISVR, The University, Southampton SO9 5NH. Tel: (0703) 595000. Fax: (0703) 593939.

9th-13th

Oxford: Course on 'The Power Generation Dilemma — fuel selection, the environment and new technologies'. Details: The Registrar, The College of Petroleum Studies, Sun Alliance House, New Inn Hall Street, Oxford OX1 2QD. Tel: (0865) 250521. Fax: 0865 791474.

11th

London: Course on 'Gasoline Technology Economics and the Consumer' (held jointly by the Institute of Petroleum and the College of Petroleum Studies). Details: Jane Davys, The College of Petroleum Studies, Sun Alliance House, New Inn Hall Street, Oxford OX1 2QD. Tel: (0865) 250521. Fax: (0865) 791474.

11th-13th

Oxford: Course on 'Disaster Management in the Petroleum Industry'. Details: The Registrar, The College of Petroleum Studies, Sun Alliance House, New Inn

Advance Notice

4th Conference on The Petroleum Geology of NW Europe

to be held on

30 March to 1st April 1992

The conference will be sponsored by: The Geological Society, PESGB, JAPEC and the Institute of Petroleum. Details from: Conference Associates and Services Ltd, Congress House, 55 New Cavendish Street, London W1M 7RE.

Hall Street, Oxford OX1 2QD. Tel: (0865) 250521. Fax: (0865) 791474.

16th

London: Conference 'The Environmental Protection Bill — the way forward'. Details: Elaine Hendry, IBC Legal Studies and Services Ltd, Bath House (3rd Floor), 56 Holborn Viaduct, London EC1A 2EX. Tel: (071) 236 4080. Fax: (071) 489 0849.

16th-18th

London: 'Second International Congress & Exhibition on Condition Monitoring & Diagnostic Engineering Management' co-sponsored by the Institute of Petroleum. Details: Dr J Au, Department of Manufacturing & Engineering System, Brunel University, Uxbridge, Middlesex UB8 3PH. Tel: (0895) 74000. Fax: (0895) 32806.

16th-19th

London: Course on 'Structural Interpretation with Emphasis on Extensional Tectonics'. Details: JAPEC Secretary, c/o The Geological Society, Burlington House, Piccadilly, London W1V 0JU. Tel: (071) 434 9944. Fax: (071) 439 8975.

17th

London: Conference on 'Directors' Environmental Responsibilities'. Details: Elaine Linihan, Conference Department, Institute of Directors, 116 Pall Mall,

London SW1Y 5ED. Tel: (071) 839 1233.

23rd-27th

Edinburgh: Course on 'Practical Petroleum Geology'. Details: Director of Continuing Professional Education, Heriot-Watt University, Edinburgh EH14 4AS. Tel: (031) 449 5111.

29th July-4th August

Loughborough: Course on 'Applications of Heterogeneous Catalysis'. Details: Margaret Gill, Centre for Extension Studies, University of Technology, Loughborough, Leicestershire LE11 3TU. Tel: (0509) 222153.

August

13th-17th

Oxford: Seminar on 'Natural Gas: The Commercial Challenges'. Details: The Alphanatania Programme, 19 Barlby Road, London W10 6AN. Tel: (071) 969 1982. Fax: (071) 960 8850.

15th-17th

Tromsø, Norway: Conference on 'Arctic Geology and Petroleum Potential'. Details: Norwegian Petroleum Society, PO Box 1897, Vika, 0124 Oslo 1, Norway. Tel: (+47) 2207025. Fax: (+47) 2833130.

27th-31st

Edinburgh: Course on 'Well Design and Completion Technology'. Details: Director of Continuing

Professional Education, Heriot-Watt University, Edinburgh EH14 4AS. Tel: (031) 449 5111.

28th-29th

Stavanger, Norway: 'Ninth Offshore Northern Seas Conference'. Details: Bente Baerheim, Conference Manager, ONS Conference, PO Box 175, N-4001, Stavanger, Norway. Tel: (+47) 4558100. Fax: (+47) 4551015.

27th-29th

New Orleans: 'Fourth International Symposium and Exposition on Gas Turbines in Cogeneration, Repowering and Peak-Load Power Generation'. Details: International Gas Turbine Institute, 6085 Barfield Road, Suite 207, Atlanta, GA 30328 USA. Tel: (404) 847-0072. Fax: (404) 847-0151.

28th-30th

London: Conference on 'World Aerospace and Air Transport'. Details: Financial Times Conference Organisation, 126 Jermyn Street, London SW1 4UJ, UK. Tel: (071) 925 2323. Fax: (071) 925 2125.

September

3rd-4th

London: Conference on 'Oil Recovery Hose and Seals: Problems and Solutions'. Details: Kay Royle, Rapra Technology Limited, Shawbury, Shrewsbury, Shropshire SY4 4NR. Tel: (0939) 250383. Fax: (0939) 251118.

3rd-7th

London: Course on 'Advance Reservoir Geology: A North Sea Perspective'. Details: JAPEC Secretary, c/o The Geological Society, Burlington House, Piccadilly, London W1V 0JU. Tel: (071) 434 9944. Fax: (071) 439 8975.

3rd-7th

Edinburgh: Course on

FORTHCOMING EVENTS

'Principles of Reservoir Engineering'. Details: Director of Continuing Professional Education, Heriot-Watt University, Edinburgh EH14 4AS. Tel: (031) 449 5111.

3rd-14th

Lausanne: '22nd International Petroleum Executive Seminar'. Details: Dr Bob Gale, Petroleum Economics Limited, 17/19 Barter Street, London WC1A 2AQ. Tel: (071) 404 0221. Fax: (071) 405 7429.

6th

London: Conference on 'Warnings of Preventable Disasters'. Details: The Fellowship of Engineering, 2 Little Smith Street, Westminster, London SW1P 3DL. Tel: (071) 222 2688. Fax: (071) 233 0054.

10th-11th

London: Conference on 'A Minimum Facilities

Approach to Oil and Gas Production'. Details: IBC Technical Services Ltd, IBC House, Canada Road Industrial Estate, Byfleet, Surrey KT14 7KL. Tel: (071) 236 4080. Fax: (071) 489 0849.

10th-12th

Edinburgh: Course on 'Statistical Analysis of Reservoir Data'. Details: Director of Continuing Professional Education, Heriot-Watt University, Edinburgh EH14 4AS. Tel: (031) 449 5111.

12th

London: 'Second North Sea Safety Conference'. Details: Dr Robert Owen, Technology Forum, Stanley House, Stanley Avenue, Wembley, Middlesex HA0 4JB. Tel: (081) 900 1555. Fax: (081) 900 1134.

17th-19th

Leeds: Course on

'Incineration and Energy from Waste'. Details: Mrs C Shirley, Senior Administrative Assistant, Department of Continued Professional Education, The University of Leeds, Leeds LS2 9JT. Tel: (0532) 431751. Fax: (0532) 336017.

17th-19th

Singapore: 'The 6th Asia-Pacific Petroleum Conference'. Details: Times Conferences Pte Ltd, Times Centre, 1 New Industrial Road, Singapore 1953. Tel: (65) 3807427. Fax: (65) 28657454.

18th-21st

London: Exhibition and Conference 'EPos, EFTPoS 90'. Details: RMDP Ltd, 61-63 Ship Street, Brighton, Sussex BN1 1AE. Tel: (0273) 722687. Fax: (0273) 821463.

19th

London: Conference on 'The Costs of Flue Gas

Desulphurisation'. Details: Judith Higgins, The Institute of Energy, 18 Devonshire Street, London W1N 2AU. Tel: (071) 580 0008. Fax: (071) 580 4420.

23rd-25th

Calgary, Canada: Conference on 'Oil and Gas Markets'. Details: Conference Division, Canadian Energy Research Institute, 3512-33 Street NW, Calgary, Alberta, Canada T2L 2A6. Tel: (403) 282 1231. Fax: (403) 284 4181.

24th-28th

Halifax, Nova Scotia: 11th International Marine Tug Convention & Salvage Symposium Exhibition. Details: Offshore Conferences & Exhibitions Ltd, Rowe House, 55-59 Fife Road, Kingston upon Thames, Surrey KT1 1TA. Tel: (081) 549 5831. Fax: (081) 541 5657.

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KEYNOTE SPEAKERS

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Mr James Schlesinger
Former US Secretary of State for Defence & Energy

Sr Gabriele Cagliari
President, ENI

GUEST PANELLISTS

HE Sheikh Ali Khalifa al-Sabah (Chair)
Minister of Oil, Kuwait

Frau Helga Steeg
Executive Director, IEA

Sir Peter Holmes
Chairman, Shell Transport & Trading plc

M André Giraud (Chair)
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Mr Arne Oien
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Professor Alexander Arbatov
USSR Academy of Sciences

Mr Toyooki Ikuta
President IEE, Japan

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Sheikh Ahmed Zaki Yamani (Chair)

HE Celestino Armas
Minister for Energy & Mineral Resources, Venezuela

M Roger Fauroux
Minister of Industry, France

HE Abdul Hadi Kandil
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FORTHCOMING EVENTS

24th-28th

Leeds: Course on 'Fire and Explosion'. Details: Mrs C Shirley, Senior Administrative Assistant, Department of Continued Professional Education, The University of Leeds, Leeds LS2 9JT. Tel: (0532) 431751. Fax: (0532) 336017.

25th-27th

London: Course on 'Pressures and Hydrogeology in Petroleum Basins'. Details: JAPEC Secretary, c/o The Geological Society, Burlington House, Piccadilly, London W1V 0JU. Tel: (071) 434 9944. Fax: (071) 439 8975.

25th-29th

Hamburg: International Shipping and Marine Technology Market. Details: Hamburg Messe und Congress GmbH, Jungiusstrasse 13-Messehaus, D-2000 Hamburg 36. Tel: (040/35) 69-0. Fax: (35) 692180.

26th

Aberdeen: Conference on 'The Souring of Reservoirs'. Details: IBC Technical Services, IBC House, Canada Road Industrial Estate, Byfleet, Surrey KT14 7KL. Tel: (071) 236 4080. Fax: (071) 489 0849.

26th-28th

London: 'Oil Industry Nurses Symposium'. Details: Caroline Little, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR. Tel: (071) 636 1004. Fax: (071) 255 1472.

26th-28th

Glasgow: '7th Offshore Information Conference'. Details: Arnold Myers, Information Officer, Institute of Offshore Engineering, Heriot-Watt University, Edinburgh EH14 4AS. Tel: (031) 449 3393. Fax: (031) 449 6254.

October

Nagoya, Japan: Conference on 'International Tribology'. Details: Prof Koichi Nakajima, Secretariat of Japan ITC, Nagoya 90, c/o Toyota Technological Institute, 2 Hisakata, Tempaku, Nagoya 468, Japan. Tel: (052) 802 1111. Fax: (052) 802 6069.

2nd-4th

Birmingham: Course on 'Understanding Heat Treatment'. Course Administrator, Wolfson Heat Treatment Centre, Aston University, Aston Triangle, Birmingham B4 7ET. Tel: (021) 359 3611. Fax: (021) 359 6470.

2nd-4th

Aberdeen: Workshop on 'Risk Analysis in the Offshore Industry'. Details: IBC Technical Services Ltd, IBC House, Canada Road Industrial Estate, Byfleet, Surrey KT14 7KL. Tel: (071) 236 4080. Fax: (071) 489 0849.

6th-12th

New Delhi: 'ChemTech '90'. Details: ChemTech Secretariat, Taj Building, 3rd Floor, 210 Dr D N Road, Bombay 400 001, India. Tel: 2042044.

7th-19th

Oxford: Course on 'Management of Shipping Costs and Revenues with Computer Applications'. Details: Mrs Jeanette Soper, Drewry Shipping Consultants Limited, 11 Heron Quay, London E14 9YP. Tel: (071) 538 0191. Fax: (071) 987 9396.

9th-10th

Sheffield: Course on 'The Update of the COSHH Regulations'. Details: Mrs KW Wainwright, The Centre for Continuing Vocational Education, The University of Sheffield, 65 Wilkinson Street, Sheffield S10 2GJ. Tel: (0742) 768653.

9th-10th

London: Conference 'Hydrocarbons 90'. Details: Hydrocarbons 90

International Conference, Themedia Ltd, PO Box 2, Chipping Norton OX7 5QX. Tel: 060884 700/888. Fax: 060884 796.

9th

London: Conference on 'Information Support for the Energy Industries - An Evaluative Approach'. Details: Caroline Little, The Institute of Petroleum.

17th

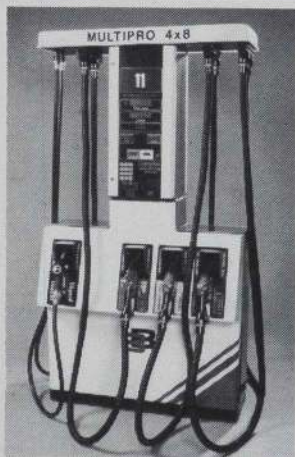
Guildford: Conference on 'Energy Demand: Evidence and Expectations'. Details: Mrs E Blakeway, Department of Economics, University of Surrey, Guildford, Surrey GU2 5XH. Tel: (0483) 509171. Fax: (0483) 300803.

18th

London: Conference on 'Occupational Hygiene - Oil Mists'. Details: Caroline Little, The Institute of Petroleum.

28th-2nd November

Moreton-in-Marsh: Course on 'Handling Emergencies in the Oil Industry'. Details: Mr RJ Barnard, Petroleum Training Federation, Room 326, 162-168 Regent Street, London W1R 5TB. Tel: (071) 439 2632. Fax: (071) 287 5483.



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Recording unusual winged visitors

When the North Sea Bird Club was conceived in 1979, bird-watching in the middle of the North Sea was in its infancy and the word ecology was not on everyone's lips as it is today. Wildlife, now accepted as an indicator of the well-being of our environment was, even in those days, recognised by a few forward-looking individuals in the industry. The nutrient-rich North Sea is fundamental to the extensive food chains of marine life which underpin our great coastal colonies of seabirds; so it seemed wise to monitor the seabird numbers as North Sea oil production increased. So the spare-time activities of a few widely dispersed bird-watchers quickly became the nucleus of a bird-monitoring scheme, with nine major oil companies supporting the North Sea Bird Club.

So popular did this useful spare-time activity become that the massive data-base of information has to be handled by means of a computer at the University of Aberdeen. The area covered by the activities of the club now extends from the gas fields off Norfolk to the distant oilfields of the East Shetland basin, forming an almost continuous series of 'bird observatories' in the North Sea. The addition of British Gas to membership in 1986 has further extended data-gathering to Morecambe Bay in the Irish Sea.

More than 500 observers have contributed to the records, not only from production platforms and drilling rigs, but also from supply ships, stand-by vessels, helicopters and even a submarine! From the latter came a unique observation. Two observers were working in the Perry submersible in South Brent field at a depth of 130 metres when a Razorbill swam to



Female Gyr Falcon found on Kingsnorth UK rig in November 1982. Photo — SMD Alexander



Female Blackcap at Ninian. Photo — MG Richardson

the window. A little later the pilot was astonished to find the bird still around his craft at 140 metres.

Many of the club's observers started their offshore bird-watching as complete beginners but a few were already expert. Serious bird-study on oil platforms poses special problems for both the novice and the skilled. If the observer's off-duty time is during the hours of darkness, identification of birds is difficult in the light cast by a flickering orange-yellow flare. In spring and autumn vast flocks of continental migrant species add to the ornithological interest but these often arrive in foggy conditions, adding to the difficulties of identification. There is nevertheless a high degree of accuracy in the reports, as these are often corroborated by other observers, sometimes backed up by photographs, drawings, descriptions or even photocopied corpses! By taking measurements from dead migrant birds, vital clues to their origin can be had. These unfortunates will have become disorientated on their migration, so that by the time they find the safety of an offshore structure they are exhausted beyond the point of recovery. Some more fortunate individuals are cared for and sent ashore for release. Forty have been found to carry leg-rings which tell where the birds came from — in most cases Scandinavia or other continental countries bordering the North Sea. A recent recovery was quite remarkable for a supposed non-migratory species, namely the Barn Owl. It was found alive on Buchan Alpha in November 1989, having been ringed as a nestling in south Germany five months previously.

Rarities of considerable international interest were recently confirmed. The Black-billed Cuckoo that came aboard Maureen on 30 September 1989 was fortunately photo-

graphed before its release next day. This species breeds west of the Rockies and should have migrated to South America for the winter. Did it reach Peru eventually? An even rarer British record (if accepted as such by the British Birds Rarities Committee) is the Siberian Jay that was seen on the gas platform Indefatigable 2 in January 1990 — a species never before recorded in Britain or its territorial waters.

A lonely Black-browed Albatross (the nearest breeding colony is in the Falkland Islands) is also in the data-base. One was known to frequent the Gannet colony at Bass Rock from 1967–69; then Hermaness (Shetland) from 1972–87, in which year it disappeared from view. Its reappearance more recently on a nest-site in Hermaness caused great excitement in the press. In the intervening period however, the (same?) bird was reported to the North Sea Bird Club — with photographs — feeding among Fulmars and Gannets to the south of Alwyn field in March 1988, February 1989 and again in January 1990.

Birds are not the only creatures which are carefully monitored by the club. Records of marine mammals (whales, seals, etc.) have their place in the data bank. Even the occasional bat (mainly the tiny Pipistrelle) finds its way to offshore installations. The many insect reports from offshore,

which include migratory butterflies such as the Painted Lady and Red Admiral, are directed to an entomologist at the University of Aberdeen.

Regular bulletins are produced for the club for the purpose of keeping observers in touch with recent sightings and club news. An Annual Report is also published and this is circulated at home and abroad, many to the scientific community. Most recently a booklet celebrating 10 years existence of the club was produced and distributed inter alia to international delegates attending the British Ornithologists' Union annual conference in Aberdeen in April 1990. It contains a synopsis of over 200 species logged in the North Sea during the 1980s, as well as scientific papers describing the habitat.

Currently membership of the North Sea Bird Club is open to oil companies operating on the British Continental Shelf. Employees of several service companies also contribute their observations by special arrangement. It is hoped that the future scope of the club's activities will expand to embrace not only all the UK operators but also those of our continental neighbours — in the spirit of Europe 1992. ■

**A Anderson (Recorder for the North Sea Bird Club),
Department of Zoology, University of Aberdeen.**

Rapid Methods for Diagnosis of Microbial Problems in the Petroleum Industry

**Proceedings of a conference held on
4 October 1989**

Engineers and scientists in the petroleum industry have for many years been alert to problems of microbial fouling, spoilage and corrosion. Yet in a decade which has ushered in comprehensive human health checks whilst you wait using a small blood or urine sample, a routine microbiological evaluation of an oil sample may take up to a week.

Much progress has been made in rapid diagnostic microbiology in health care and food hygiene; large numbers of similar samples are processed simultaneously and yield results within hours. The data generated tends to be presence/absence of specific organisms or above/below limit values. Much of it is generated by expensive, laboratory based equipment and requires little expert interpretation. The petroleum industry contrastingly needs flexible, inexpensive equipment to process relatively few samples.

The conference reviewed the developments which have occurred in rapid quantitative and diagnostic microbiology and their relevance to the petroleum industry.

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Energy Information for 1992

**Proceedings of a conference held on
20 March 1990**

The introduction of the Single Market offers new prospects and opportunities to those working in the energy industries, but it also poses potential problems which require solutions.

The Information for Energy Group, anticipating the need for information on rules and regulations, market conditions and future planning requirements, felt that a conference on this subject would provide an opportunity to examine sources of information for these issues.

Topics covered at the conference and included in these proceedings are:

The European Single Market and the Energy Industries

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Retail automation – reasons for investment

By Guy Kenyon, Computer Software Consultant, Logica Energy & Industry Systems Ltd

Modern petrol retailers operate in a highly competitive environment, under pressure to react quickly to market changes. In recent years these retail network operators have invested heavily in developing their sites and in expanding their range of services to customers, licensees and dealers. Here is a look at how linking site and head office computer systems can help petrol retailers maximise return on investment and gain a competitive edge.

Petrol retailers are making sizeable investments to maintain their position in a business worth approximately £15 billion per annum in the United Kingdom in fuel alone. They are spending a great deal of money to ensure their sites maintain the high levels of service now expected.

Companies are investing in retail automation in the belief that it will help them to use the available space and facilities in the most efficient and profitable way. Retail automation at sites – in the form of, for example, forecourt card readers, point of sale systems and back office systems – enables petrol retailers to increase throughput of customers to make room for additional, often more profitable, services, such as convenience stores, car washes and payphones. It also helps them to judge which balance of services is most cost effective.

1990 looks to be the year in which many petrol retailers will begin major installations of forecourt/front office and back office systems. Substantial improvements have been made in recent years in the application of technology at petrol station sites.

In particular, point of sale terminals, based on pc technology, have developed quickly in the last three years. Point of sale systems can collect and process a wide range of data to assist in stock control and reordering. They can gather a wide range of card, cheque and cash transactions for electronic settlement and allow efficient

cash management. The point of sale system can connect to the pc based back office system used by site managers to control the site, or even sites. The site systems can be connected to head office to provide retail and electronic funds transfer (EFT) data. This task is illustrated in **figure 1**.

Monitoring and control

Although site and head office managers are having to deal with an expanded range of services, the means now exist to help them in their work. At the touch of a button, head office staff will be able to monitor, for example, individual site cash flow, the amount of leakage and pilferage at each site, opening hours and whether stock receipts are registered and reconciled with invoices.

Retail automation can also ensure that sufficient operational detail is reported from dealer sites. Combining this with the more detailed data available from owned sites, petrol retailers can manage and control their network as a single business.

Exploiting the systems

The ability to combine stock data from sites all provides benefits that have long been recognised by high street retailers. Retailers control and manage

the stock on each site to maximise the more profitable, faster moving lines. They can operate central ordering, with individual sites reporting deliveries which can then be reconciled with central invoices. The prospect of negotiating further bulk discounts becomes attainable. How much is 1 percent of the average petrol retailer's annual confectionery purchase worth?

Accurate and timely information is an important factor in gaining the competitive edge. Competitive price reporting from across a widespread network can provide petrol retailers with the sort of information they need to price their fuels competitively. This can be achieved by means of appropriate procedures to gather and report the data and a decision support system to process it. Communicating price changes to sites can also benefit from links between site and head office.

Petrol retailers are under pressure to provide a high level of service not only to customers but also to dealers, especially those with prime sites. If petrol retailers provide dealers with systems that assist stock control and help to improve margins or turnover, operators will be pleased to accept them. Dealers will be further encouraged if they achieve better margins, improvements in the amount of 'control' they can exercise over their business and assistance in obtaining discounts on stock purchasing. Improved computer facilities enable them to provide a better service to their

customers, thus enhancing the petrol retailers' overall company image.

The likely changes in methods of payments provide further incentive for investment in computer systems. The Monopolies and Mergers Commission Card Processing Review recommended removing the barrier to charges for credit card transactions. Given that credit card transactions constitute an estimated 40 percent of total fuel sales and 20 percent of all UK credit card transactions, a decision to give a discount for cash would increase cheque and cash transactions. Although increased cash handling would certainly be a retrograde step, alternatives can be seen in the growth of the Switch debit card service and 'own' cards. Switch appears to have overtaken EFTPOS UK in the race to become the 'de facto' standard for debit cards. Own or common fuel card use can also be expected to increase. The success of Mobil in the United States with its debit card and associated mail order business is a powerful example of how UK petrol retailing could develop. However, for petrol retailers to follow such an approach requires investment in third party services or in-house systems. The data transfer requirements between sites and head office are summarised in figure 2.

The move towards technology

Most existing point of sale terminals that are capable of collecting card transactions store the data during the business day and are polled over night by third party service providers. These service providers collect the electronic funds transfer data and process it for settlement with banks and card issuers. Petrol retailers are also using these service providers to collect and deliver additional data – at an additional cost. Such charges reflect the value of the collected data and can be high. Increasing competition and additional services, creating more data at site, will require further expenditure. There are obvious benefits in petrol retailers having their own system, rather than being dependent on a third party.

The UK petrol retail marketplace is recognised to be among the most sophisticated in the world. Although the United Kingdom is not currently the most advanced country in applying technology to site systems and head office operations, many operators are forward thinking with appropriate management experience. Point of sale suppliers believe that the UK industry is ready for investment in pc based

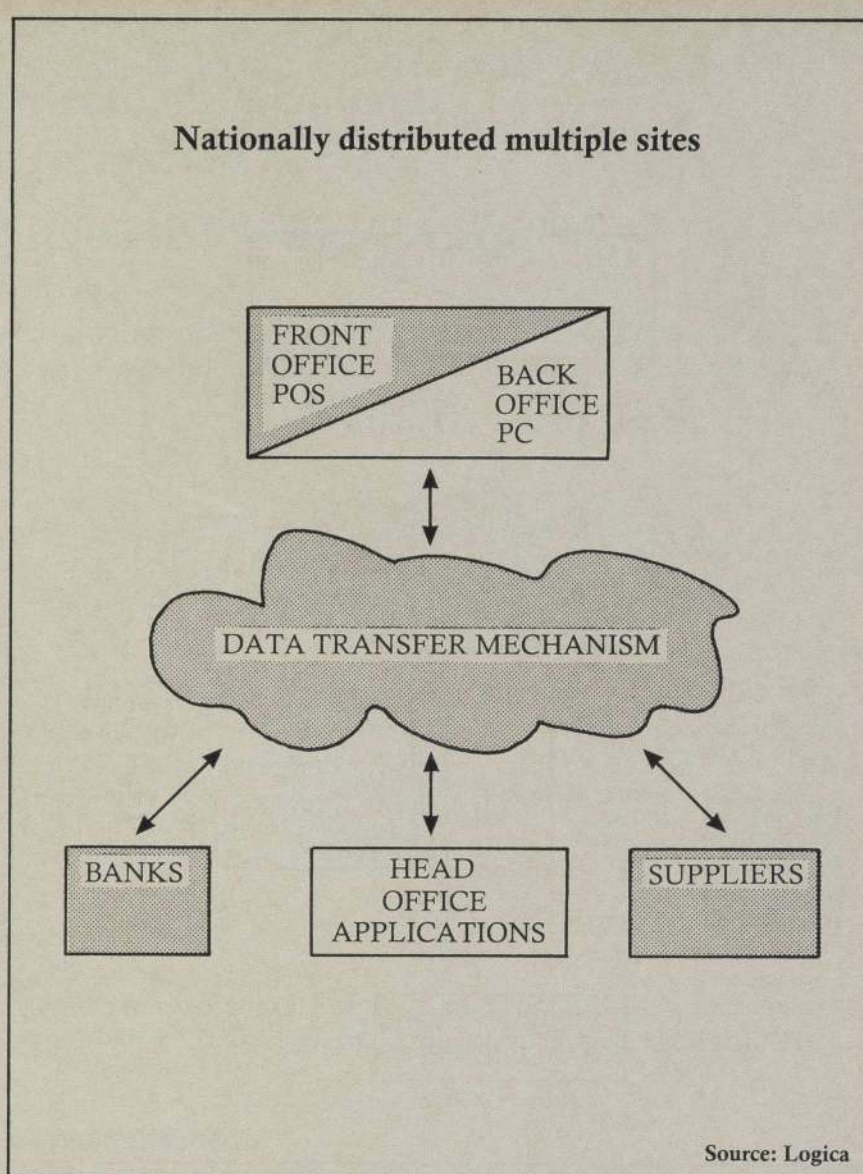


Figure 1

front and back office systems. These suppliers cannot provide an end to end solution transferring data reliably from site to head office. Competition in the United Kingdom will lead to the implementation of an end to end system solution (site systems, head office, data transfer mechanism) and, where one company leads, others will have to follow. The process has been seen in other countries where one company has implemented a communications or front end processor and achieved benefits; the others in that market place have had to follow quickly.

There is clearly also a movement towards a global or supranational approach to the market. A number of organisations are regrouping from multinational to global bases and, in the light of '1992', considering retail networks in Europe as a single entity rather than as a series of discrete

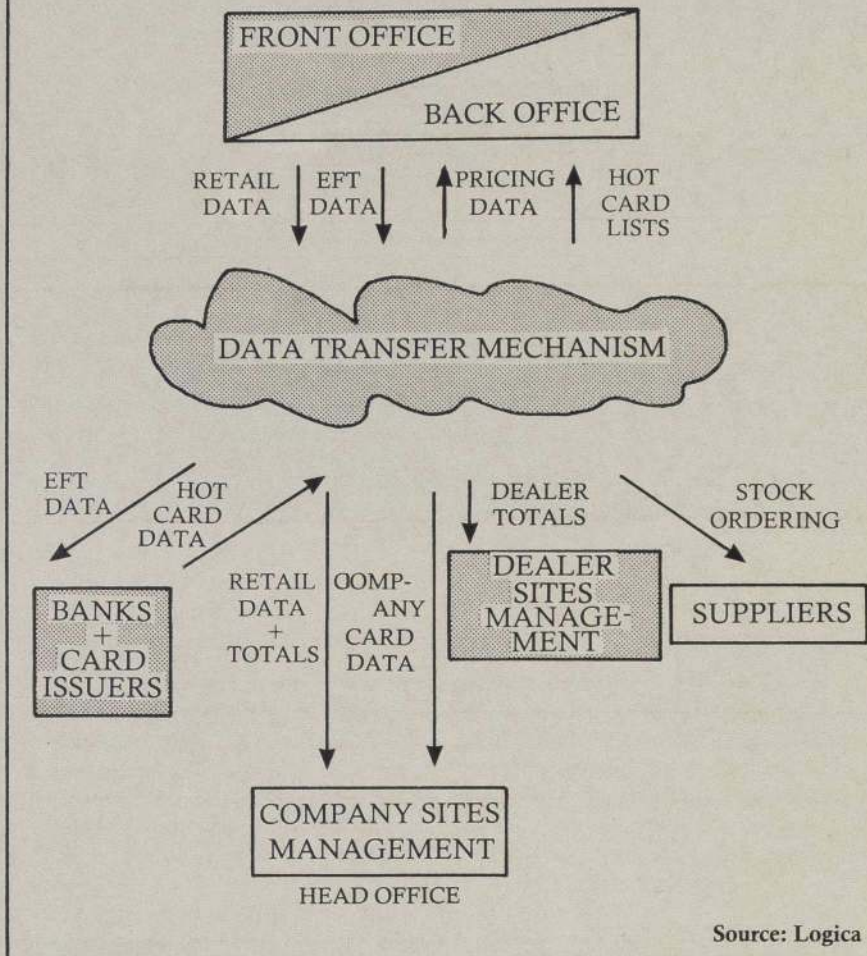
national networks. For UK-centred organisations, this is something of a break with tradition. However, breaking down national boundaries provides an opportunity to combine data processing and data collection sites to gain the benefits of scale and topology. With an ability to identify the supranational benefits, and an organisation structure which will allow the implementation of supranational systems, petrol retailers will be able to increase dramatically the efficiency of their operations.

The 'single pipeline' approach

Today's petrol retailers have to decide whether to leave their sites as self sufficient entities with little or no contact and support, or, through the provision of a link, to extend assistance to

Data transfers

Nationally distributed multiple sites

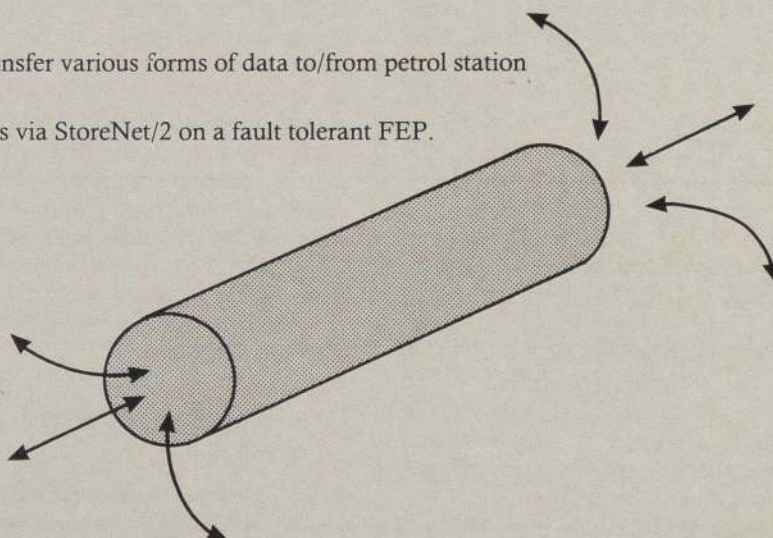


Source: Logica

Figure 2

The single pipeline

Transfer various forms of data to/from petrol station sites via StoreNet/2 on a fault tolerant FEP.



Source: Logica

Figure 3

them. If a link is not provided, the costs of third party services, area supervision, site returns checking, data re-entry and long delay management reports will continue as an overhead. If a link is provided to carry out a two way exchange of retail and EFT data, petrol retailers will enhance the effectiveness of head office systems, give a better service to site managers and dealers, obtain quicker access to management reports – possibly next day – and have more accurate data at their disposal.

This single pipeline approach is based on a data transfer system operating from a front end processor (FEP) that communicates with the sites downstream and host computers, upstream, at head office and banks. Data from the sites is routed according to type, application, site and priority. Sites can initiate a call to the FEP for card authorisation or be called overnight from the FEP. The data transfer system is independent of the terminal type or host application. New device types can be added simply, as can new host interfaces. Security is provided to assure the safe transfer of EFT data, particularly important where off-line polling produces a high percentage of revenue. This approach can be visualised as in figure 3.

Mainstream retail products exist with proven support, a broad range of device and network connectivity and proven success in the market place. Systems based on products like Storenet/2* and ON/2*, available from Logica, are in use worldwide in a variety of retail applications and by petrol retailers in the United States and Australia. Installations are under consideration by a number of additional UK, US and European petrol retailers.

The case for investing in computer systems is strong. Computer systems provide the key to the effective control of the petrol retailer's own sites and the effective monitoring of his dealers and licensees. If petrol retailers interconnect their site and head office systems with a reliable data transfer system, they will be able to replace third party services, remain flexible for the future and safeguard their current investment in systems.

The time is right for this investment, the technology is available and proven and the competitive edge is there to be gained today. Who will lead the application of these techniques to petrol retailing and who will be left trying to catch the market leader? ■

*Trademark of Shared Financial Systems Inc



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Bright future for Norway's gas exports

By Karen Fossli

Norway's luck in selling natural gas took an upturn last December just before Christmas when Ruhrgas and Thyssengas, two of its West German customers, announced their intention to exercise purchase options under the Troll sales agreement which will increase deliveries in the second half of the 1990's. The two contracts call for additional Norwegian gas supply of four to five billion cubic metres annually, in a deal worth about NKr70 billion which will boost Norway's West German market share to about 25 percent from 20 percent. The giant Troll gas field has recoverable reserves of 1.2 trillion cubic metres, making it the world's 10th largest gas field. Troll also accounts for about one-half of total gas deposits discovered on the Norwegian continental shelf.

Sales agreements

In 1986 Statoil, the Norwegian state oil company, negotiated on behalf of the owners, contracts for gas sales to a group of West European buyers including Gasunie (The Netherlands), Distrigaz (Belgium), Thyssengas/Ruhrgas/BEB (West Germany), Ferngas (Austria), Gaz de France (France) and Enagas, Spain). The main contract calls for gas deliveries from both the Troll and Sleipner fields, and has a maximum volume of 650 billion cubic metres of gas, with first deliveries scheduled from the Sleipner field in 1993, followed by deliveries three years later from the Troll field over a period of 20 years.

The sales agreement also calls for purchase options to increase the maximum sales volume by 36 billion cubic metres and may include deliveries from a phase two development scheme for the Troll field.

Adding to Norway's luck was April's announcement by Gaz de France to exercise its purchase options under the Troll sales agreement. The deadline for Gaz de France to exercise its options has actually expired last December but there can be no doubt that Norway is more than willing to extend the deadline, because now the bargaining chips seem stacked in its favour. To this end, discussions between Statoil and Gaz de France are expected to be completed by the end of this year.

In a global perspective there are just eight countries in the world which have more gas than Norway's 2.750

trillion cubic metres, which is about 2.2 percent of the world's known gas reserves.

Taking into account gas contracts which have been signed, Norway in the year 2000 will have a market share of between 15 percent and 25 percent in its largest European markets. Statoil is optimistic that by the turn of the century Norway's gas exports could almost double to 50 billion cubic metres annually from the current level of just under 28 billion cubic metres.

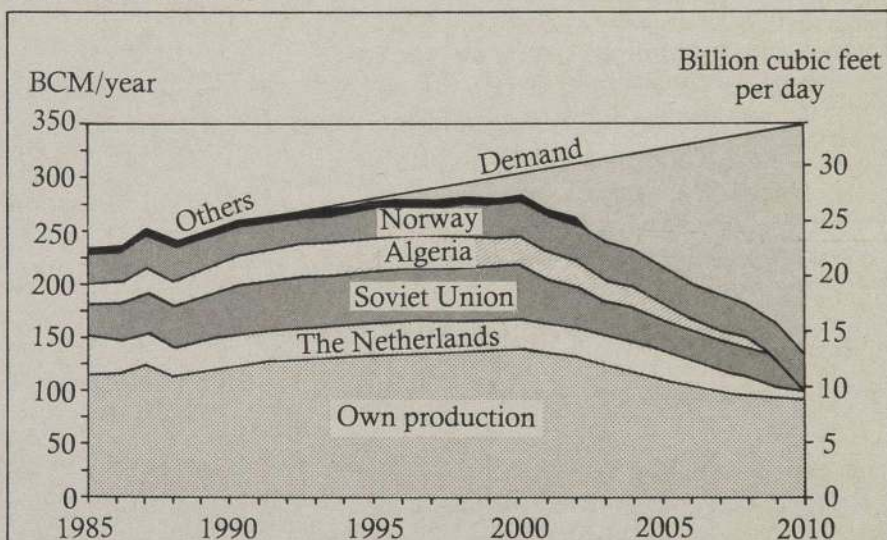
Future UK market

Statoil's optimism has been boosted by the extraordinary gain in environmental awareness, linked with the

democratisation of polluted Eastern Europe which will open up wider markets than ever for gas-fired power generation. By most accounts gas is considered to be a clean replacement for dirtier coal-fired power generation. In addition, Norway has received positive signals that the UK market may in future provide substantial export opportunities.

Besides interest in Norway's gas publicly expressed by Mr James Allcock, director of Gas Supplies at British Gas (BG), Statoil is currently holding talks with no less than 15 UK companies which have expressed interest in importing Norway's gas to supply industrial customers and for power generation.

Gas supply and demand — Western Europe Contracted volumes



Statoil has suggested that individual annual import volumes by interested UK companies within the next couple of years may range from 300 million cubic metres to one billion cubic metres. Scope for greater Norwegian supply volumes, say, in excess of five billion cubic metres annually, may exist from around the year 2000 when UK demand for gas to generate power is estimated to command an 11 percent share of the total UK gas market, rising to 20 percent by mid-century.

Rough estimates by Statoil on the size and distribution of the UK gas market put demand rising from 57 billion cubic metres in 1990 to 67 billion cubic metres by 2000. A rough UK market breakdown by Statoil sees:

- the electricity sector as detailed above;
- the industrial sector with a 31 percent market share in 1990, declining to 26 percent by 2000;
- the domestic sector with a 46 percent share in 1990, declining to 43 percent in 2000;
- the commercial market with a 14 percent share in 1990, declining to 12 percent by 2000;
- 'other' with a 9 percent market share in 1990, declining to 8 percent in 2000.

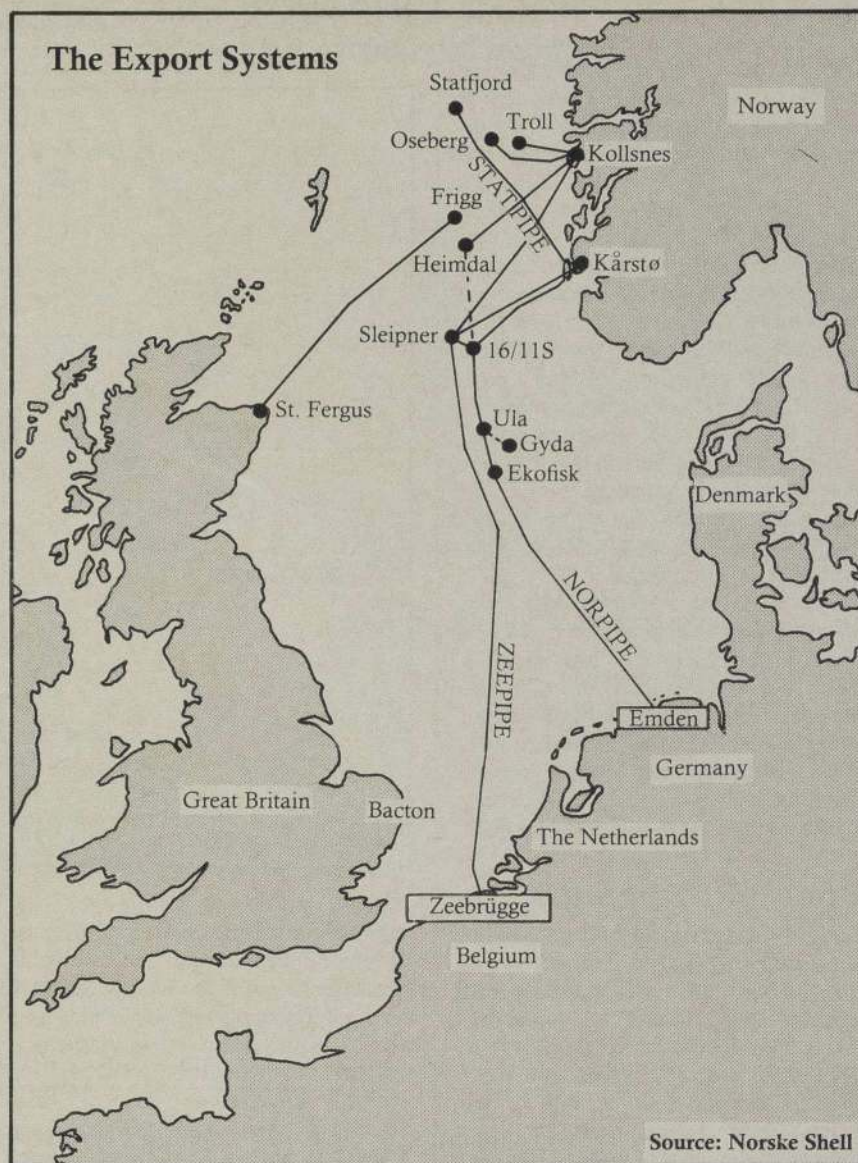
However, with the recent announcement by Mrs Margaret Thatcher, the UK prime minister, to do her part to fight the 'greenhouse' effect . . . it may just be that the role of natural gas to create a cleaner Britain will increase.

On 25 May, she announced that Britain was prepared to adopt the target of stabilising carbon dioxide emissions at 1990 levels by the year 2005, provided other countries also act to curtail emission. Although Mrs Thatcher did not spell out her policy on the issue she said that it would require 'more efficient power stations, cars which use less fuel, better insulated houses and better management of energy in general'.

Competitive supply

At its peak Norway had a 25 percent market share in Britain but this has entered a phase of drastic decline in parallel with the decline of gas production from Norway's North Sea Frigg gas field, which is the UK source of supply. It is believed that the Frigg field may even stop producing sometime in the 1990's; at least two years earlier than forecast and 50 billion cubic metres of gas under original supply estimates.

Statoil believes that the terms which UK producers can offer domestic supply will in future escalate for new UK



Source: Norske Shell

The Troll gas will be an important energy source for Europe in the years to come. Sales agreements have been made with France, the Netherlands, Belgium, West Germany, Austria and Spain. Troll will be able to cover 10 percent of Western Europe's gas requirements well into the next century. The gas will be transported by two pipelines from the processing plant at Øygarden outside Bergen, to Zeebrugge in Belgium and to Emden in West Germany. The two separate transportation systems will ensure flexible and stable deliveries.

projects will command higher investment costs, boosting the competitiveness of Norwegian supply.

It has been suggested that Norway could supply the United Kingdom through the existing Frigg — St. Fergus gas pipeline but additional pipeline links to the Frigg line would have to be built from the giant Troll gas field and the marginal Heimdal gas field.

Another possibility is to build a pipeline from Zeebrugge, Belgium — the landfall for the Zeepipe line — to the United Kingdom. Statoil is also studying the possibility of laying a third Norwegian pipeline from either the existing Statpipe line or the new Zeepipe line under construction to the

Eemshaven area in the Netherlands. This could not be completed before sometime in the mid-1990's, however.

Statoil estimates that current annual Western European gas consumption is about 250 billion cubic metres but it forecasts a rise to 300 billion cubic metres by the turn of the century. In 1988 natural gas enjoyed a 15 percent share of the Western European energy market but Statoil forecasts an increase to 18 percent by the year 2000 with scope for an even greater boost, as gas becomes competitive with other energy sources and as growing environmental awareness becomes engrained in individual country policies.

Statoil's pitch to increase its market

share for gas is a hard sell: 'Natural gas is considerably more environmentally friendly than coal and oil. Emissions of carbon dioxide could be reduced to under half of the current level if industry used natural gas instead of coal and oil.'

Statoil believes that the political instability of the Soviet Union, its main gas supply competitor, is also causing a rethink by customers about becoming too closely tied to long-term commitments to Soviet supply. 'This can further strengthen Norway's position in the West European gas market.'

In 1986 Spain and Austria signed on to buy Norwegian gas and there is hope that current contracts could be increased. A future goal is to penetrate Portugal, which currently doesn't have a market for natural gas.

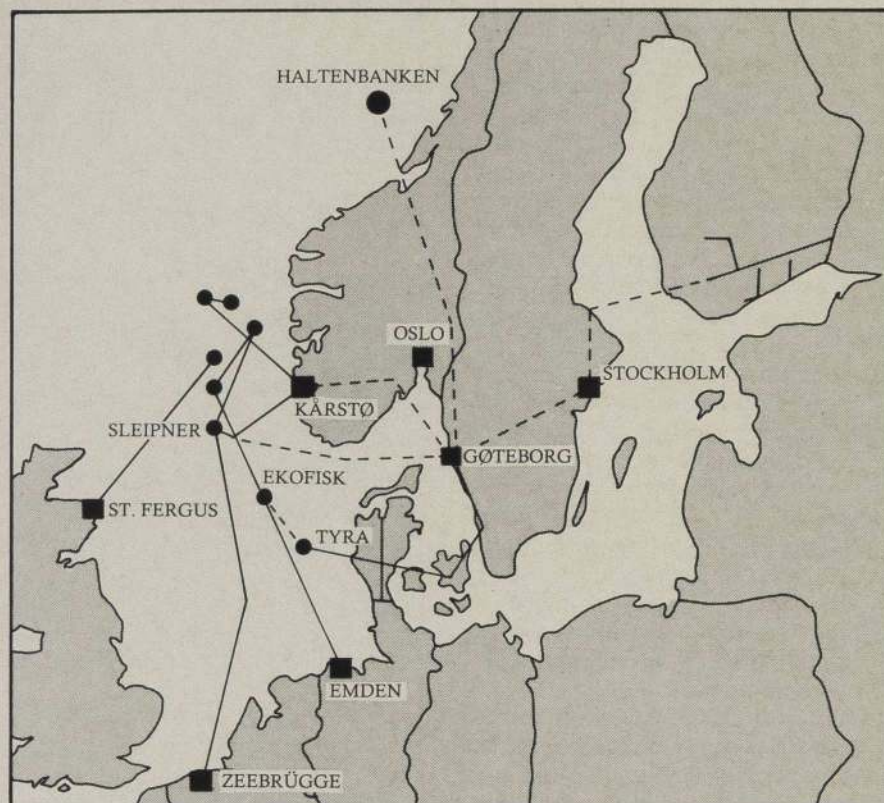
Statoil is also negotiating with Italy's Snam for the delivery of five billion cubic metres of gas annually from 1995 or 1996 for a period of two decades. Although Italy is Western Europe's third largest gas market, after West Germany and Britain, and its fastest growing market, there is only 'cautious' optimism in reaching a deal.

Pollution problems

'Italy is expanding its gas demand but it's a long distance to market and it's not obvious that we will be able to land a deal with the Italians that can satisfy our economic requirements. However, we feel it's worth the effort and we're making that effort. If you look at their plans and their dependency on Soviet imports, I can clearly understand why they are seeking alternative supply' explained Mr Peter Mellbye, Statoil's head gas negotiator.

Although Mr Mellbye believes there may be significant potential to break

Possible Nordic gas transportation systems around year 2000



into the Eastern European market, he does not underestimate the formidable hurdles which will have to be cleared to seize export opportunities which may arise. 'What could be interesting is Poland ... which has already expressed interest to us ... and Czechoslovakia. These countries have a definite pollution problem; they're 100 percent dependent on Soviet supply and they will want to diversify this supply. But there is the big problem of converting to market economies and the other major problem of

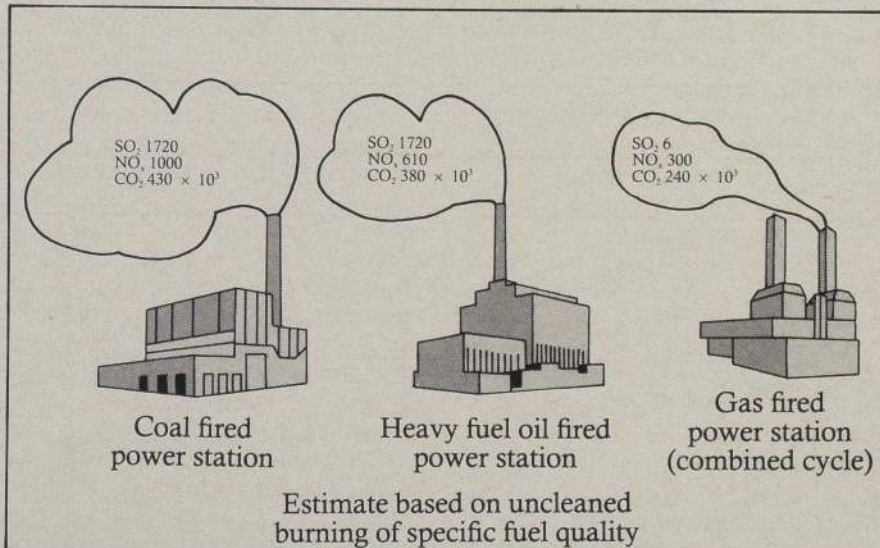
the structure of their gas industry which is not in any shape to meet the challenge which a deal would demand.

'In East Germany, for example you have many companies vying for a central role but there is great uncertainty over which companies will remain independent or become affiliates of West German companies. So, the question is who are really going to be the buyers? Until this is sorted out it's going to be very difficult for any one of them to take on any commitment to buy our gas. I don't want to give too bright a view on the possibilities of East Europe but eventually it may become an interesting market for gas' Mr Mellbye said.

Statoil, for several years, has been negotiating with Sweden to supply 2.5 to three billion cubic metres of gas annually. However, it concedes that it will take a reasonable gas price to make the investment for infrastructure profitable and it is not completely convinced that this can be achieved. The possibility of selling gas to Sweden seems more distant than it was a year ago because of the Swedish confusion over dismantling their nuclear industry. 'They have indicated that their programme of shutting down nuclear facilities is likely to be pushed further into the future,' Mr Mellbye said.

Finland has also expressed interest in buying Norwegian gas. 'Finland

Emissions of SO₂, NO_x, CO₂ (in Kg/TWh)



says it needs 2-3 billion cubic metres from 1997 to supplement Soviet supply.'

US market

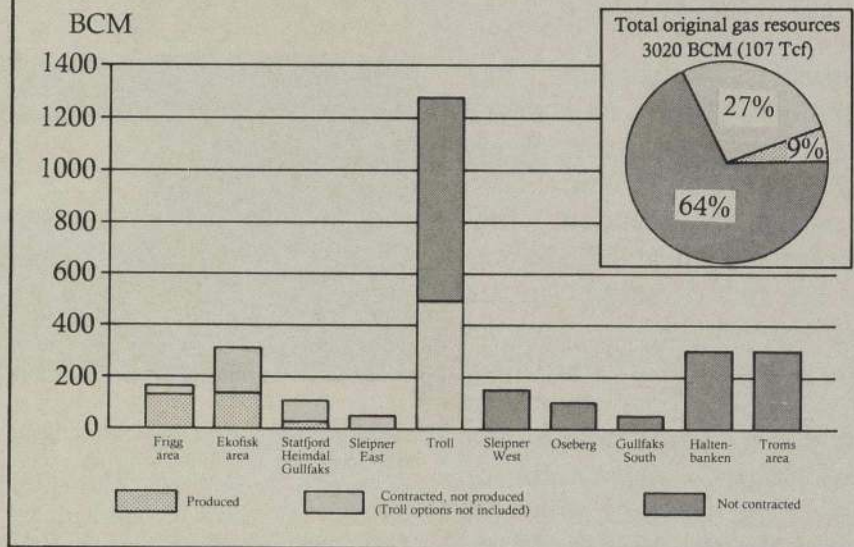
Statoil's hopes to penetrate the US market were dashed late in April, when it became apparent that the gas field which was meant to be the source of supply is plagued with complex reservoir problems which could inhibit stable, long-term production. In addition, the commercial viability of the project could not be confirmed. Statoil had signed a letter of intent with US-based Enron, the gas transmission company, to supply gas in the form of liquefied natural gas (LNG), at a rate of 2.5 billion cubic metres annually from the mid-1990's. The project was meant to have been an opportunity to break into the US gas market and could have eventually led to a major LNG project for the development of the Snow White field.

However, Statoil has returned to the drawing board and is seeking to launch the Nkr26 billion Snow White project in either 1997 or 1998 to supply the United States, but it has not yet started negotiations to secure a supply contract.

Irrespective of the numerous market opportunities which are developing for Norway's gas, the country's greatest challenge will be that of bringing costs

Proven Norwegian natural gas resources

January 1989



down: 'New projects need contracts which secure a certain economic rate of return... the challenge for Norway, as a major gas producer is to identify new gas projects, beyond those currently under development, which are sufficiently profitable. For Norway it is not a question of gaining myriad market shares all over the world at any cost; but rather a question of launching new projects which have a sound economic basis,' Mr Mellbye said.

It used to be that Norway seemed in a state of desperation about securing new gas sales contracts. However, it has become a tougher negotiator and is now in the enviable position of having a commodity whose value is likely to increase in future along with its demand. 'Norway does not have to sell gas at virtually any price. Whether or not Norway will sell gas to any potential new markets depends on the profitability which can be achieved.' ■

Advance notice

EXPLORATION AND PRODUCTION DISCUSSION GROUP



Offshore Safety — The Way Ahead

A one-day conference
to be held at the Cavendish Conference Centre
Thursday 22 November 1990

Safety has always been a crucial matter in the potentially hazardous offshore oil and gas environment. After a steadily improving operating safety record over the last decade, recent tragic events have focused public attention on North Sea operations.

The conference will examine this important subject in the light of new recommendations and their impact on future offshore oil and gas operations, procedures and economics.

The conference will be chaired by **Mr BRR Butler, OBE, Managing Director, The British Petroleum Co. plc and President, The Institute of Petroleum.**

The **Keynote Address** will be given by **The Rt Hon John Wakeham, MP, Secretary of State for Energy.**

Papers on the following topics will be presented:

North Sea Safety — The Record to Date

The Cullen Report — Lessons Learned and Recommendations

The Cullen Report — The Industry's Response to the Recommendations

Formal Safety Assessments

Practical Implications for North Sea Operations

Good Management is the Key to Offshore Safety

Building Safety into a Project

Designing for Safety

Developments in Evacuation

Economic Consequences and Impact on Future Activities

For a copy of the registration form, please contact **Caroline Little**, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR. Telephone: 071-636 1004. Telex: 264380. Fax: 071-255 1472.

New safety fuel tanker

Phoenix Petroleum has taken on board a new safety fuel tanker as part of its haulage fleet. The East Anglian independent fuel company acquired the tanker — the first of its type in the United Kingdom — at its Bury St Edmunds head office in May. The new tanker has been specially commissioned by Phoenix with the safety of the rural communities in mind, for the firm's vehicles travel extensively around the eastern counties.

The 36,000 litre LOWMAX semi-trailer is a British-first because of use of a tri-axle wheelbase to carry petroleum spirit. This axle configuration is considered by experts to be the safest and most economical way to deliver fuel.

The unit was specially designed for Phoenix by two English engineering firms, to improve safety and help protect the general public and the environment.

The design of the aluminium alloy-constructed tanker had taken into account the varying road conditions — particularly narrow lanes and sharp road bends — in East Anglia.

The unit is 30 centimetres (over 12 inches) lower in overall height than existing designs, considerably lowering the tankers's centre of gravity.

The company claims this will give



the tanker significant improvements in stability, ride and handling, and with no increase in overall length, no loss of manoeuvrability will be experienced.

An additional benefit of the low design is the better vehicle performance and reduced wind resistance, with the resultant fuel cost savings.

Other safety factors have been incorporated on the vehicle, such as the valves used for loading and discharging are of a new manifold type, with a permanently coupled suction line, eliminating the risk of fuel spillage.

The sideguard design provides a substantial increase in protection to another vehicle in the event of side impact. By being so low, the tanker also has an improved retail forecourt canopy clearance, and lower hose storage gives improved ease of access and handling for forecourt operation.

After the new tanker was officially delivered to the company by former top jockey Greville Starkey, Mr Charles Butler, Phoenix's Commercial Director, said: 'We have been concerned for some time about the potential risk from tankers rolling on country

roads, and, whilst we are proud that our drivers are extremely cautious and careful, we felt our new tanker should incorporate the very latest technology in tanker safety.'

The company commissioned Charles Roberts Engineering Ltd, of Wakefield, Yorkshire, and Drum Engineering, Bradford, to build the Lowmax unit.

The principle features of the LOWMAX design are for low height, low centre of gravity and low operational access, coupled with maximum safety, maximum tank cross section and maximum use of available space.

Most of these design factors were achieved by carefully designing the tank to suit the tractor and running gear using a stepped design which utilised all the available space. The calculated centre of gravity from the ground when coupled to its trailer and laden is 1.6 metres and when unladen is 1.1 metres.

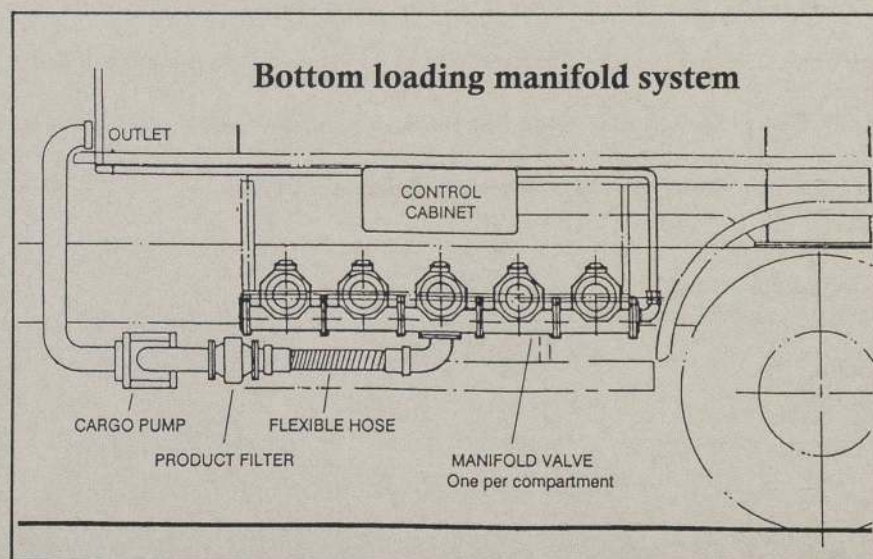
The vehicle has been tested and approved to a laden weight of 40 tonne gross vehicle weight by the Motor Industry Research Association.

The bottom loading equipment, made by Drum Engineering, is fitted including full vapour recovery system.

The new manifold type valves not only allow gravity discharge of spirit in the conventional manner, but also the pump discharge of non-spirit products via a permanently coupled suction line.

This valve system is the first of its type to gain Health and Safety Executive approval and greatly reduces discharge time whilst eliminating the risk of spillage of product from the pump suction hose.

A Drum Hydrapak hydraulic system is used to create discharge rates of more than 1,200 litres per minute via a Drum Pluto 3 cargo pump mounted on the trailer, to ensure rapid turnaround when making bulk deliveries.





The Institute of Petroleum

Safe Road Transport in the Petroleum Industry The Way Ahead

Tuesday 6 November 1990

A One Day Conference to be held at The Cavendish Conference Centre

The Conveyance Panel of the Institute's Marketing Sub-Committee, which has played a major role in establishing present-day safety standards in the transport of petroleum products by road, is organising this conference to provide a forum for the discussion of developments in this important area of oil industry activities which are being occasioned by a variety of factors, including advances in technology, the increasing awareness generally of safety and environmental issues and the imminence of 1992.

Among the topics to be discussed will be designing for safety, operational safety, data capture and communications and driver training and assessment. Each of these will be the subject of a number of separate papers on specific aspects of the topic. An exhibition of manufacturers and suppliers of associated equipment will be held in conjunction with the conference, at The Institute of Petroleum.

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



OIL INDUSTRY NURSES SYMPOSIUM

27-28 SEPTEMBER 1990

Nurses in all branches of Occupational Health in both petrochemical and other industries will benefit from this symposium to be held at The Institute of Petroleum. The following papers will include new and topical issues, which reflect the changing and challenging position of today's professional nurse.

Thursday 27 September

Keynote Address

Dr John Brothwood, Chief Medical Officer, Esso UK plc
Project 2000 and the Specialist Practitioner — Implications for Occupational Health Practice

Mrs Ruth Alston, Education Officer, English National Board
Professional Conduct and Accountability

Mr Reg Pyne, Director of Professional Conduct, United Kingdom Central Council

The Roundabouts of Business Take-overs

Mrs Eleanor Wilson, Regional Nursing Officer, BP Exploration Ltd, Glasgow

The Offshore Pharmacopoeia

Mr Bill Morgan, Senior Medical Supervisor, Shell Exploration and Production

Money Matters

Mr Paul Boni, Director, Berry, Birch & Noble

European Community — 1992 — How it may affect Occupational Health

Mrs Cynthia Attwell, Head of Occupational Health and Safety Unit, Birmingham City Council

Friday 28 September

Upstream View of Exploration and Development in the Eastern Block

Mr Paul Jennings, Petroleum Economist, BP International Ltd.

Innovations in Occupational Health Nursing Education — A Distant Learning Approach

Mrs C Anne Lewis, Co-ordinator of Health Courses, and Dr Henry I Ellington, Head of School Educational Development Unit, Robert Gordon's Institute of Technology, Aberdeen

Legal Issues in our Work

Mrs Diana Kloss, Senior Law lecturer, University of Birmingham

For a copy of the registration form, please contact **Caroline Little, The Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR. Telephone: 071-636 1004. Telex: 264380. Fax: 071-255 1472.**

Routine engine tests: can we reduce their number?

By Dr M A Plint and Dr A F Alliston-Greiner

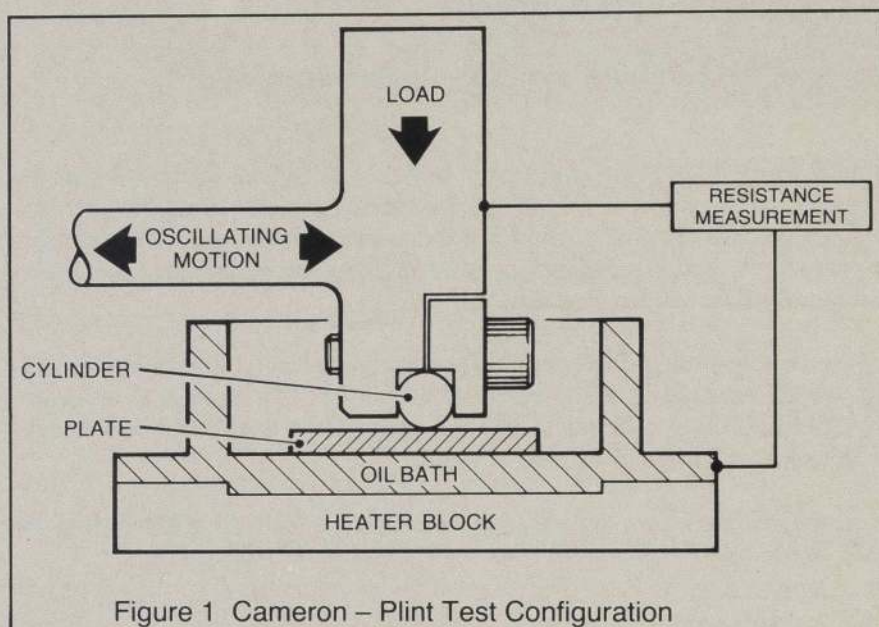


Figure 1 Cameron - Plint Test Configuration

A feature of any installation concerned with the manufacture of lubricants is a row of engine test beds carrying out routine control of lubricant quality. Typical examples are the Petter AV1, the Ford Tornado Bore Polishing Test and the OM616.

The cost of running, up-dating and monitoring these test procedures is enormous. There is little prospect of eliminating them completely but simulation methods might bring about some reduction.

Recently a great deal of effort has been put into developing a new version of the cam and follower scuffing test for ohv engines, resulting in the recent introduction of the Peugeot TU3 procedure and this led the authors to look into the problem of developing a simulation test that might at least act as a screening procedure.

Essentially their idea was to use the Cameron-Plint Test Procedure, Figure 1, in which one test piece is reciprocated against another under appropriate conditions of load and temperature and measurements are made of friction force, contact resistance and wear. An advantage of this procedure is that the test specimens can be of the

appropriate material and we used induction hardened grey cast iron for the fixed specimen and carburised steel, 55-60 Rockwell C, for the moving specimen. This matches the material specification for cams and finger followers of European engine practice and the stress level chosen

(530 MN/m²) was also typical of current practice. The moving specimen was reciprocated through a stroke of 2.3 mm at a frequency of 35 Hz while lubricant supply was by a drip feed at a rate of 20 ml/hr. Tests lasted one hour and the test cycle is shown in Figure 2. The load was increased in stages to its maximum value in the first 15 minutes while the temperature was ramped also in stages from 100°C to 200°C.

Test results take the form of oscilloscope traces of friction force and of contact resistance, Figure 3. This last requires some explanation as it proved to be the key observation. Contact resistance was measured by an arrangement known as a Lunn-Furey circuit, in which a potential difference of about 5 mV was applied between the fixed and moving specimens by way of a potential divider. The output from this circuit when applied to an oscilloscope shows very rapid alternations from effectively 5 mV to nil corresponding to intermetallic contacts between the specimens.

In our tests the contact potential is actually fed through an rms/dc converter to a pen recorder which averages

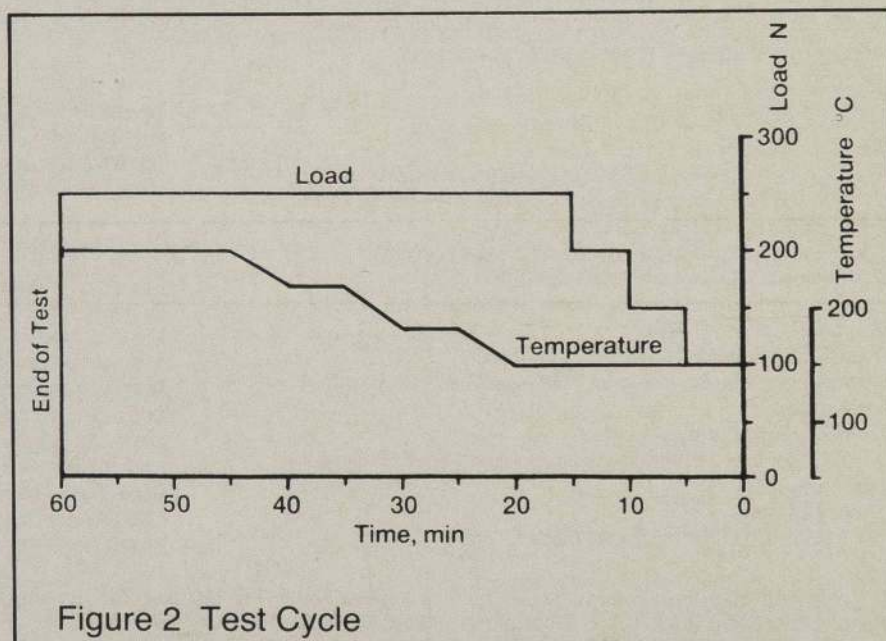


Figure 2 Test Cycle

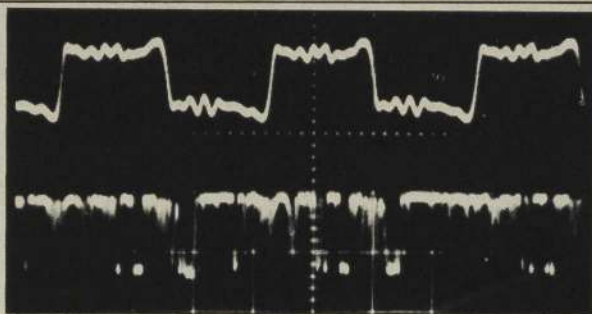


Figure 3 Oscilloscope Trace of Instantaneous, Friction Force and Contact Resistance

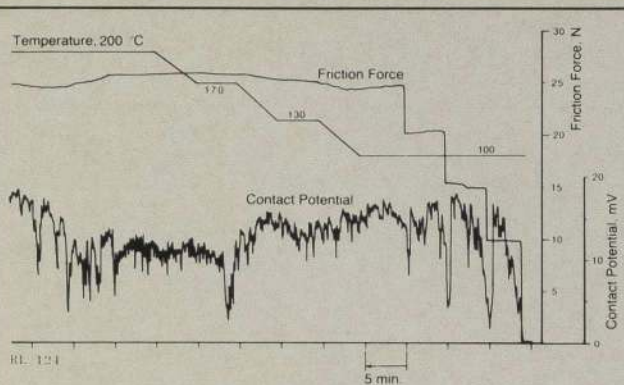


Figure 4 Oil RL 124

the very rapid variations but still gives large changes over a longer time scale. **Figure 4** shows a typical record of the variations in contact potential over a one hour test. The significance of the contact potential became clear when we started to examine oils that have a known pedigree in terms of wear and scuffing.

RL124 persists throughout the test while that for the RL125 tends to collapse above a temperature of 150°C.

This began to look significant and we subsequently took a look at some standard CEC reference oils about which something is known in terms of valve train performance. **Figure 7** shows the results for RL124, the high

shows the performance of RL142, the well-known scuffing fail oil (SFO) which is the low reference oil for the Peugeot TU3 test.

Two features of these results stand out: while some oils maintain a good contact resistance throughout the test sequence, others collapse at the higher temperatures and loads. Secondly,

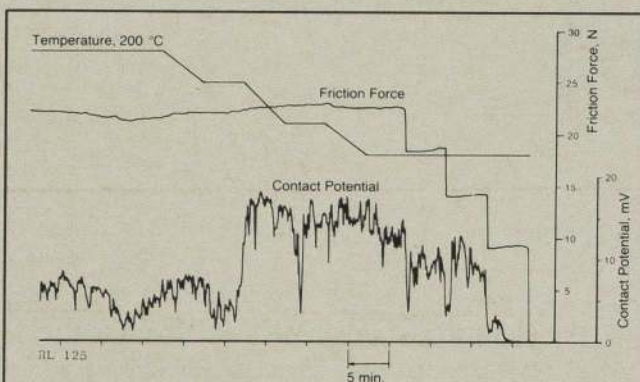


Figure 5 Oil RL 125

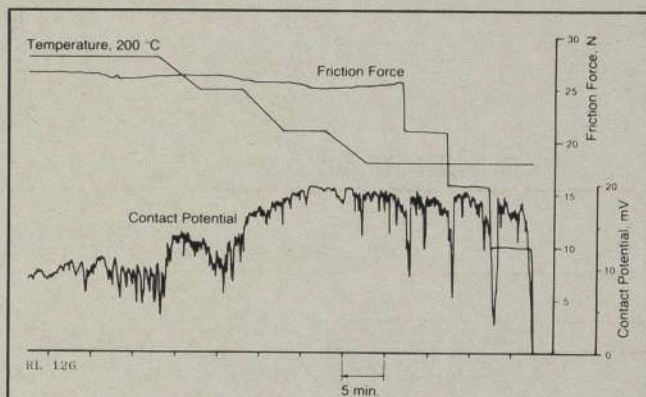


Figure 6 Oil RL 126

Figure 5 shows the performance of the standard CEC high reference oil RL124 as used in the VTW scuffing test that preceded the Peugeot TU3, while **Figure 6** shows the performance of the low reference oil RL125 used in this test. It will be clear that there is a significant difference between the traces: the contact resistance for the

reference pitting test oil which is also known to given fairly good scuffing performance, while **Figure 8** shows RL127, the low reference pitting test oil which is also known to perform fairly poorly in scuffing.

Figure 4 shows RL138 the new standard high reference oil for the Peugeot TU3 test and finally **Figure 9**

some oils fail to develop a contact resistance until a high temperature has been reached.

This performance is associated with a phenomenon that has received a great deal of attention in recent years: the formation of thick boundary layers of polymerised material on rubbing surfaces which then have a decisive

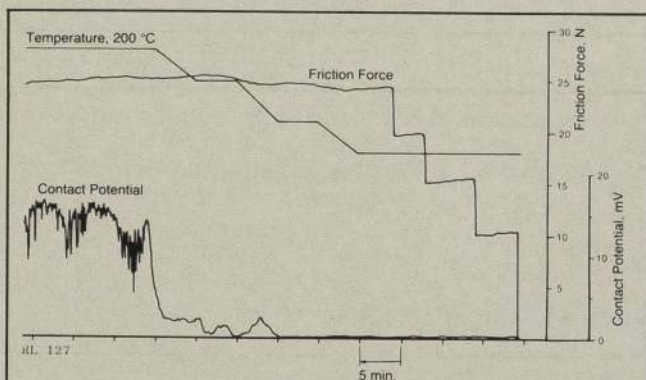


Figure 7 Oil RL 127

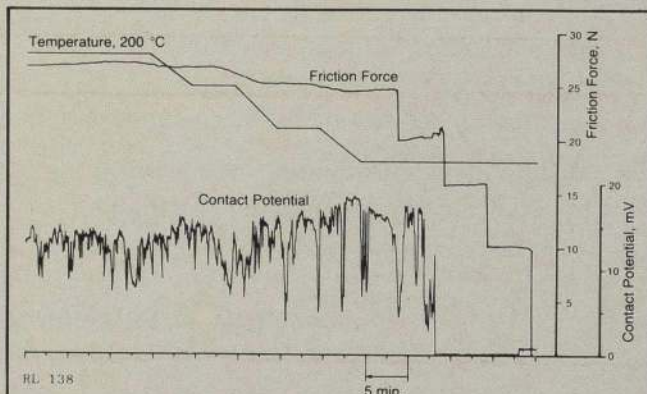
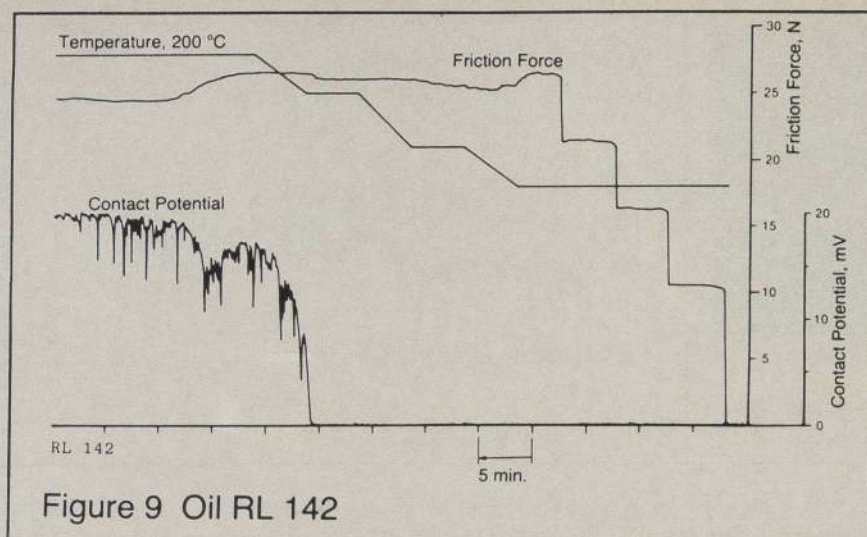


Figure 8 Oil RL 138



influence on wear and scuffing under boundary layer conditions. It seems evident that oils that perform well under scuffing conditions form a thick boundary layer even at fairly low temperatures and are able to retain this layer under conditions of high load and high temperature.

All the indications are that this test procedure forms a useful diagnostic tool for detecting weaknesses in the load/temperature performance of lubricants. Even in its present form it can provide a useful screening procedure.

We are continuing our work in this field with a view to refining the procedure to give an even better match with the results of engine tests. ■



First aid advice

Ethylene Glycol

In general terms the first aid advice given following the ingestion of any hydrocarbon product is 'Do not induce vomiting — seek medical assistance immediately'. This advice is based upon an assessment that the risks associated with aspiration of hydrocarbon/stomach contents into the lungs as the result of vomiting outweigh the immediate systemic or local toxic effects of the product involved.

In the case of Ethylene Glycol total absorption from the gastro intestinal tract occurs very rapidly and its inherent toxic effects are potentially lethal. For these reasons, it is considered appropriate to modify first aid advice in the following special circumstances:

- (a) Where the victim does not have immediate access to hospital medical assistance and
- (b) when the victim is conscious.

The following first aid advice is suggested for the management of Ethylene Glycol ingestion: With a conscious victim, induce vomiting if ethylene glycol has been ingested and hospital assistance is not immediately available.

Institute of Petroleum Medical Subcommittee

Online access – recent developments

The department has recently arranged online access to two additional databases which will provide valuable information for business and market research areas.

Kompass online

This file covers some 160,000 UK companies in the business-to-business sector. Data on individual companies includes their products/services under 45,000 categories, directors, managers, ownership, trade names, finances, overseas agents and registration details (where available).

Selection facilities include direct access to a company by name, or selection of companies by their products, post code, turnover and number of employees. Thirty-five further selection criteria are available with any combination being allowed.

The resulting data can be printed as a listing. A special facility is available to output mailing labels with named individuals selected by job title.

A further European file contains data on some 270,000 companies from 11 countries. Data is less comprehensive than for UK companies but does include a common product classification containing over 100,000 categories.

The database is particularly useful for finding suppliers of products, potential new customers or profiles of named companies.

Tradstat

This file holds official government import/export information on all reported commodities (over 60,000 products) from Europe, Japan, Canada, Brazil and the United States. It provides up-to-date and rapid access to relevant statistics via a menu driven system with a choice of 24 report formats. For example, they may be ranked reports showing volume, value and price of trade between a reporting country and its key trading partners or trend reports giving annual month-by-month trends by volume, value and price.

Special features include product code look-up, choice of currencies, choice of units for quantities and downloading capabilities.

The statistics provide the basis on which to make decisions concerning new markets and pricing with the ability to react to trends and new developments.

A selection of new additions to the library

Automotive and industrial fuel combustion; environmental and health implications; papers presented at a conference, London, 22 November 1989.

INSTITUTE OF PETROLEUM. Edited by: BROTHWOOD, Dr John and FISH, Dr Anthony. London, Institute of Petroleum, 1990. Class Number: 769.1 Pamphlet

The HCB Tank Guide Directory of tank container & roads tanker industries worldwide. HAZARDOUS CARGO BULLETIN. Edited by: CORKHILL, Michael. London, Intapress, 1989. Class Number: 612.08 Reference

OPEC in the new era.

By: SUBROTO Dr.

Texas, Cambridge Energy Research Associates, 1990. Class Number: 185 Pamphlet

Petrocompanies 1989/1990; with quarterly updates.

PETROGUIDE LTD.

London, Petrocompanies Ltd, 1989. Class Number: 082 Ref/Directories

Petroguide 1989/1990: consumers, producers, companies.

PETROGUIDE LTD.

London, Petroguide Ltd, 1989. Class Number: 910 Ref/Directories

Airport Support's Directory Of Airports & Airport Equipment 1990.

Edited by: SURGENOR, Christopher.

Sutton, Camrus, 1990. Class Number: 961.08 R Ref/Directories

ANEP 90 European Petroleum Year Book.

23rd edition.

Hamburg, Urban-Verlag, 1990. Class Number: 082 R Ref/Directories

Supply of Petrol: a report on the supply in the United Kingdom of petrol by wholesale. MONOPOLIES AND MERGERS COMMISSION.

Cmnd 972.

London, HMSO, 1990. Class Number: 960 Reference only Oversize

1990 Canadian Oil Industry Directory.

PENNWELL DIRECTORIES.

6th edition.

Tulsa, Pennwell, 1990. Class Number: 082 Ref/Directories

Abandonment of United Kingdom offshore oil & gas installations.

ERNST & WHINNEY.

London, Ernst & Whinney, 1989. Class Number: 940 Pamphlet

Decommissioning & removal of offshore structure: Papers from the conference held at London Press Centre 19-20th April 1989.

MARINETECH NORTH WEST.

[London] [IBC] [1989]. Class Number: 539

Management of the design & construction of North Sea structures: Review of the state of the art & future needs of North Sea project management.

UNIVERSITY OF MANCHESTER INSTITUTE OF SCIENCE & TECHNOLOGY

UMIST. By: WEARNE, SH, THOMPSON, PA.

Marine Technology Directorate Ref OCS30/SERC ref GR/E/60543.

Manchester, UMIST, 1990. Class Number: 539 Pamphlet

Eastern Europe – sources of information

Following the recent changes in Eastern Europe which give rise to potential business opportunities, the department has added a number of new sources to its holdings.

Eastern Bloc Energy is a monthly review of the Soviet Union and Eastern Europe with major emphasis on oil and gas but also covering coal, nuclear power and petrochemicals.

Directory of Soviet Engineering is a reference work containing basic information on 1,248 of the largest industrial associations of the Soviet engineering industry. Details given include postal address, telephone number, managing

director, the number of organisations included in the association and a list of items produced for export. Foreign trade associations are also listed. Two indices, an alphabetical index of engineering enterprises and a product index are provided to assist location of information.

Country files of press cuttings for each country within Eastern Europe are available in the department and we also undertake online literature searches in response to enquiries.

For further details on any of these services please contact IP Information Department on 071 636 1004.

Exploration and Production

The Institute led a delegation to the ISO/TC67 Advisory Group meeting on Materials and Equipment for the Petroleum and Natural Gas Industries. At this meeting the United Kingdom undertook to provide the secretariat for the proposed Sub-Committee on Off-shore Structures. EEC Purchasing Directives could still apply to North Sea if the UK government is unwilling to remove licensing controls.

The Offshore Drilling and Production Code is ready for printing.

Refining and Marketing

A revised Aviation Hydrant Pit Systems Code is to be published shortly. It takes into account the results of the IP-sponsored excess flow tests of hydrant pit valves in Holland earlier this year.

A liaison visit has been made to API Technical Services Committee in Florida and monitoring of airport hydrant leak detection systems has taken place at Amsterdam and Copenhagen.

A proposal has been received from HSE that the Institute prepare a Code of Practice for the design of aviation fuellers. This would be used as a basis for an HSE approved Code of Practice.

A revised Road Tanker Bottom Loading Code is also to be published, incorporating the recently agreed high level cut off compatibility document.

A working group is preparing comments on the HSE proposals for Road Traffic (Carriage of Dangerous Substances in Road Tankers and Tank Containers) Regs 1990. These regulations will replace the existing conveyance regulations and will, amongst other things, provide for driver controlled deliveries.

Discussions have been held on overfill prevention devices at retail outlets with HSE, local petroleum authorities and UKPIA. Discussions are also taking place with HSE and the Ministry of Transport concerning the possibility of providing a Hazchem/ADR panel for road tankers.

The occupational health section of the Bitumen Code has been approved by the Advisory Committee on Health and the code will shortly be passed to the publishers.

The draft guide on Potential Hazards of Hydrogen Sulphide in Heavy Fuel Oil has been issued for comment.

A new working group has been convened to revise the section on Fire Safety Precautions contained in the Marketing and Refining Safety Codes. The group, drawn from a wide range of refining and marketing companies will hold its first meeting in July.

Petroleum Measurement

Several measurement publications are approaching the final stages including:

- A Petroleum Measurement paper – Recommended UK Operational Practice for proving Gantry Meters fitted with Electronic Heads – has been reviewed and is ready for publishing.

- A final draft of the Code of Practice for proving Gantry Meters has been issued for comment.

- A manual on the Optical Reference Line Method for the Calibrations of Vertical Cylindrical Tanks has been prepared and will be issued soon for comment.

- A guidance note on the design and operation of Coriolis Direct Mass Flowmeters for use in industry will be issued soon for comment.

New work items include the preparation of other calibration methods, in particular, tank calibration using electro optical instrument technique and procedures for LPG cargo measurements.

A successful measurement workshop entitled 'Problem Areas in Crude Oil Loss Claims' was held in March. A second workshop will be held on 4 December on 'Crude and Petroleum Product Shipments – Problems Encountered during Independent Inspection'.

Standardisation

Work continues on the revision of existing test methods and the development of new ones. Worthy of note are:

- The extension of the scope of IP375 – Total Sediment in Residual Fuel Oils – to include blended fuel oils.

- In conjunction with API the development of a centrifugal method of determination of sediment in crude and products.

- IP/ASTM correlation program for determining precision for kinematic viscosity tests at 40°C and 100°C.

- Temperature dropping point test for grease.

Investigations are underway to find an alternative for IP156 to determine olefins and aromatics in products, the use of thermal analysis to determine oil volatility and cloud point and alternative methods of determining aromatics in diesel fuel.

A strong ASTM delegation visited the IP in June to discuss joint test methods and international test method procedures and policy.

Health and Environment

A paper on transportation was presented by the Institute at the Watt Committee Conference 'Technological Responses to the Greenhouse Effect' in April. The final conference papers are to be given a wide circulation.

The update of the 1980/82 epidemiological study of refining and transportation workers has aroused the interest of the HSE and the TUC. Copies of the original studies have been provided.

A conference on 'Oil Mists – Occupational Health Risks' is proposed for 18 October.

The following 1990 research projects have been approved:

- A study of polycyclic aromatic hydrocarbons in selected UK estuaries.

- Possible pyrolytic formation of polycyclic aromatic hydrocarbons when drilling offshore with oil-based muds.

In addition a research project for the British Biological Research Association to investigate 'The Bioavailability of Carcinogens from Oil' is in the final approval stage.

AEH Williams, Director General



Mr Robert Malpas, Managing Director of BP until July last year, has been appointed a member of the Board of Directors of Repsol SA. The wholly owned subsidiary of Repsol SA, Repsol (UK) Ltd, have announced the formation of its new Board of Directors as follows: **Mr Juan Sancho Rof**, Chairman; **Mr Dick Dasent**, Managing Director; **Mr Lou Stroud**, Director and General Manager, Petroleum Division; **Mr Ken Wiseman**, Director and General Manager, Refining and Specialities; **Mr James Bonnard**, Director and Manager, Corporate Finance and Planning and **Mr Graham Meador**, Director and General Manager, Logistics and Development.

Mr Bernard Heywood has been appointed Regional Chairman of British Gas Scotland. Mr Heywood first joined the company in 1951; he was appointed to his present post, HQ Director (Operations) in 1988 where in addition to his duties associated with the operation of the National Transmission System, he also played a major role in helping to formulate and implement engineering policy throughout the company.

The New York Mercantile Exchange have appointed **Mr Stephen C Daffron** to be Vice President of its newly created strategic planning department.



Mr Charles Graham Brett, above, a Fellow of the Institute of Petroleum, has been appointed Managing Director of Saybolt United Kingdom Ltd and Vice President - Marketing for Saybolt Eastern Hemisphere.

Mr Walter R Roberts, above, has been appointed Legal Manager and Company Secretary of Bow Valley Petroleum (UK) Limited. Mr Roberts will be responsible for all the legal aspects of the company's activities.

Mr Dick Morris, Chairman and Chief Executive Officer of Brown and Root (UK) Limited, will be retiring as Chief Executive in November this year. He will continue as part-time, non-executive Chairman of Brown and Root (UK) Limited and as Chairman of Devonport Management Limited. **Mr Keith Henry**, currently Managing Director of Brown and Root Marine, will take over as Chief Executive.



Mr Jim Nokes, above, has been appointed Director and General Manager, Business Development, Conoco (UK) Ltd. In this position, Mr Nokes is responsible for the creation of new commercial opportunities for Conoco (UK). He replaces **Dr George Watkins** who has transferred to Conoco's petroleum headquarters in Houston and has been appointed General Manager Exploration, Southern Europe, East Africa, Middle East, Far East and Latin America, worldwide exploration.



Neste Chemicals have appointed **Mr Richard Pearson**, above, a Fellow of the Institute of Petroleum, as Logistics Manager of its worldwide polyolefin business. Mr Pearson has extensive experience in the logistics arena with companies such as Esso Petroleum and Unitank Storage Company.

Premier Consolidated Oilfields plc announced that **Mr J A Heath** is being appointed to the Board as Director of Finance. He has been with The Burmah Oil plc since 1968, currently as Group Controller, and was previously Chief Financial Officer of Burmah North Sea Exploration.

Bennet-Beck have made two senior managerial appointments at Director level. The first is Managing Director, **Mr Jean-Marc Chwialkowski** and second **Mr Michael J Stuart**, previously Bennet-Beck's General Manager, is appointed Deputy Managing Director.



Atlas Wireline Services, a division of Western Atlas International Inc have appointed **Mr Rene Casarsa**, above, Senior Vice President - Research and Development.



Mr Silvan Robinson, above, has accepted the position as Chairman of Saladin Computer Systems, a leading provider of information and decision support systems to the international oil industry.

Stanlow Golden Jubilee Symposium

The Symposium 'Environment and the Oil Industry' was held on 9 May at Shell's Thornton Research Centre near Chester as part of the Stanlow Branch year of events organised in celebration of its golden jubilee.

The programme consisted of a morning session of presentations by Peter Sloan (UKPIA), Gareth Bendon (Dept of Environment) and Ewan Macdonald (Effluent Processing Club — Harwell), who are recognised specialists on environmental matters. The scope of their papers included an assessment of the implications of current and developing environmental legislation, a review of Integrated Pollution Control and the proposed Environmental Protection Bill, plus a survey of emerging technologies that will assist in meeting tighter emission standards. The afternoon was devoted to tours of the Research Centre and the adjacent Shell Stanlow Manufacturing Complex.

The Stanlow Branch Chairman, Mike Morris, concluded by saying that the event had been a great success in attracting over 60 people from a wide background of interests, who were able to benefit from the high quality of presentations made on this important subject.

New Collective Member

Globe Inspection Ltd are independent Petroleum inspectors providing a comprehensive inspection service, including marine bulk surveys, cargo superintendence, tank calibrations and laboratory facilities, throughout Western Africa. Established in 1981, the company took over most of the operations and staff of E W Saybolt & Co in the region, and have since expanded considerably, with offices and operating networks at every port on the coastline of Western Africa. A new and modern analytical laboratory was recently opened at Port Harcourt, Nigeria. The London office functions as a coordination centre.

HM The Queen's Birthday Honours

Sir Robert Paul Reid, former Chairman and Chief Executive, Shell (UK) now Chairman, British Rail

Graham James Hearne CBE, Chief Executive, Enterprise Oil
Charles Herbert Mitchell CBE, Chairman and Managing Director, Century Oils

Brent Pyburn MBE, Manager, Environmental Response, British Petroleum International

Benevolent Fund

The Institute of Petroleum has a Benevolent Fund for the provision of financial and other relief or assistance to persons in need who are or have been members of the Institute and the wives, widows, families and dependent relatives of such persons as the Management Trustees in their absolute discretion think fit. If members of the Institute are aware of any such persons, even if their membership of the Institute has ceased, they are asked to inform Mr AEH Williams at the Institute. Applicants would be asked to complete a form giving details of their financial circumstances which would be treated in strict confidence. Help might be given for temporary difficulties, such as the cost of convalescence following illness.

Correction

With reference to pages 310–314 in the June issue of Petroleum Review, the Institute of Petroleum invited Scanraff and Texaco Development to present a joint paper at the conference on 'Opportunities for Fuel Oil in Power Generation'. We have been asked to point out that Texaco's is not the only process under consideration by Vattenfall.



An Institute of Petroleum prize was presented to Mr Alexander MacDonald for being top student in the 1990 MSc course in Offshore Engineering at Robert Gordon's Institute of Technology, Aberdeen. In the photograph are (left to right): Dr Ted Mason, Lecturer in RGIT's School of Mechanical and Offshore Engineering; Mr Ramsay Spence, chairman of the IP Aberdeen Branch; Mr Alexander Macdonald, Prizewinner and Dr Richard Green, Secretary of the Aberdeen Branch.

Around the Branches

Irish

11 September: Golf Outing, Little Island Golf Club (Cork).

19 September: Seminar on 'Vapour Recovery — the technicalities, cost and legislation', Dublin.

Shetland

11 September: Ladies Evening: Bobby Tulloch talk on 'Birds seen on offshore oil installations'. Buffet, Maryfield, Bressay. 7 pm ferry.

9 October: 'International Banking and Oil Developments'. Frank Allan, Bank of Scotland, Shetland Hotel, Lerwick.

New Members

Abdullahi, SB, Operations Liaison Office, Nigerian National Petroleum Corp, Plot 1005 Oju Oldbun Close, Off Bishop Oluwole Street, Victoria Island, Lagos, Nigeria

Atkinson, NF, Officers Mess, Royal Air Force, Beaconsfield, Stafford, Staffs ST18 0AG

Ball, MW, Esso Petroleum, Esso Refinery, Fawley, Southampton, Hants SO4 1TX

Beesley, NJ, 4 Loddon Close, Abingdon, Oxon OX14 3TB

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Butler, MWG, 12 Meadow Way, Eastcote, Pinner, Middx HA4 8TE

Carter, JHT, 15 Milner Street, London SW3 2QB

Crawford, JB, 2 Mandale Street, Acklam, Middlesbrough TS5 8SB

Curley, NJ, Esset Pines, Montgarrie, Aberdeenshire, Scotland AB3 8AQ

David, MR, Occidental Petroleum, (Caledonia) Limited, 16 Palace Street, London SW1E 5BQ

Erediauwu, E, King-Wilkinson (Nigeria) Ltd, c/o King-Wilkinson Inc, Kew Bridge House, Kew Bridge Road, Brentford, Middx TW8 0EJ

Evans, PR, 19 Monmouth Road, Wallasey, Merseyside L44 3EA

Farrington, SG, 59 Bastyan Avenue, Lower Quinton, Stratford-upon-Avon, Warwickshire CV37 8SW

Fitzgerald, MJ, Vice-President — Joint Ventures, Occidental Oil, 16 Palace Street, London SW1E 5BQ

Giles, DL, 65 Whistlers Avenue, London SW11 3TS

Institute News

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 Kapembwa, I, Zimoil Divn (Zimco Ltd), Fuel Terminal, PO Box 71588, Ndola, Zambia
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 Korn, D, 114 Bowen Ave, Glenmorg, Durban, Republic of South Africa
 Lasocki, J, Occidental Petroleum, (Caledonia) Limited, 16 Palace Street, London SW1E 5BQ
 Lautier, J, 12/5 Vincenti Buildings, Strait Street, Valletta, Malta
 Leahy, PE, Sedgwick Energy Ltd, Sedgwick Centre, London E1 8DX
 Lungwebungu, S, PO Box 73759, Ndola, Zambia, C Africa
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 Mathieson, W, External Funding & Industrial Services, Aberdeen University, Regent Walk, Aberdeen AB9 1FX
 McIntosh, MA, 18 Freemans Court, Broadlands Avenue, Chesham, Bucks HP5 1AN
 Melly, MP, Calcon (PTY) Ltd, 10th Floor, Rennie House, 41 Victoria Embankment, Durban 4000, South Africa
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 Miles, MJ, 6 Cawood Drive, Skirlaugh, Nr Hull, North Humberside HU11 5EN
 Millard, GA, Malvern, 156 Victoria Street, Dyce, Aberdeen AB1 0DN
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 Prew, SB, 136 Richmond Road, Leytonstone, London E11 4BS
 Prior, JMG, Clifford Chance, Blackfriars House, 19 New Bridge Street, London EC4V 6BY
 Ros, P, 74 Hudd Road, Amanzimtoti 4125, South Africa
 Salmon, MP, Senior Geologist, Occidental Petroleum Company, 16 Palace Street, London SW1E 5BQ
 Sciberras, R, St Andrews, St George's Junction, St Juliens, Malta

Shorten, DC, Century Oils Ltd, PO Box 2, New Century Street, Hanley, Stoke on Trent ST1 5HU
 Slavin, JF, Shell UK Oil, Shell Mex House, Strand, London WC2R 0DX
 Stavinocha, LL, PO Drawer 28510, San Antonio, Texas 78228, USA
 Sullivan, JM, 10 Ernest Grove, Beckenham, Kent BR3 3JF
 Thomas, HM, 84 Edgecomb Road, Stowmarket, Suffolk IP14 2DN
 Timmons, RB, 61 Dublin Street, Edinburgh EH3 6NL
 Vicente, CMD, Av 4 De Fevereiro 52-60 61, PO Box 440, Luanda 440, Angola
 Ward, CH, 20 Deep Lane, Sheffield, S Yorkshire S5 0DX
 Webb, T, Budgets Manager, Occidental Petroleum (Caledonia) Ltd, 16 Palace Street, London SW1E 5BQ

Student Prize

Bown, JW, University of Cambridge, Bullard Laboratories, Madingley Road, Cambridge CB3 0EZ

Students

Doyle, CD, 157 Sandy Lane, South Wallington, Surrey SM6 9AP
 Sarmiento, A, Butlers Wharf, LSE Residence, Gainsford Street, London SE1 2NB

Deaths

We report with much regret the deaths of the following members:

	Born
A Barnard, Hitchin, Herts	1927
AS Banyard, Colchester, Essex	1945
WL Bottomley, Halifax, Yorks	1924
H Campbell, Aberdeen	1925
FH Fish, Wimborne, Dorset	1914
Dr RC Fisher, Bromley, Kent	1900
M Gaberscik, Stonehaven, Kincardineshire	1933
WG Gross, Barnet, Herts	1898
CE Hopper, Crowborough, East Sussex	1927
Lt Col J Howard, Dyffryn Ardudwy, Gwynedd	1913
Sir WK Hutchinson, Twickenham, Middlesex	1903
TGL Ingram, Danbury, Essex	1924
A Peck, Tonbridge, Kent	1911
JM Riley, Breaston, Derbys	1930
CE Shilling, Surbiton, Surrey	1927
ATS Simpson, Bingley, West Yorkshire	1902
AH Stephenson, Los Angeles, USA	1920
JV Thompson, Ealing, London	1945
A Watson, Swanage, Dorset	1907
CSC Wickens, Queensland, Australia	1912

Deliveries into Consumption

UK deliveries into inland consumption of major petroleum products —Tonnes

Products	April 1989†	April 1990*	Jan-Apr 1989†	Jan-Apr 1990*	% change
Naphtha/LDF	287,560	194,250	1,165,590	1,106,170	-5.1
ATF—Kerosine	476,970	540,700	1,864,930	1,991,790	6.8
Motor Spirit	1,941,690	2,004,270	7,634,250	7,922,250	3.8
of which unleaded	292,820	647,640	664,082	1,990,886	199.8
Super unleaded	n/a	73,160	n/a	265,150	
Premium unleaded	n/a	574,480	n/a	1,725,736	
Burning Oil	195,630	181,840	798,920	821,380	2.8
Derv Fuel	834,950	843,330	3,244,420	3,486,670	7.5
Gas/Diesel Oil	774,370	665,620	3,141,130	2,997,020	-4.6
Fuel Oil	755,860	1,056,840	3,623,340	4,496,130	24.1
Lubricating Oil	78,910	62,370	289,460	270,830	-6.4
Other Products	566,110	488,460	2,193,450	2,334,360	6.4
Total above	5,912,050	6,037,680	23,955,490	25,203,240	5.2
Refinery Consumption	483,450	495,450	1,944,220	1,971,570	1.4
Total all products	6,395,500	6,533,130	25,899,710	27,174,810	4.9

†Revised *Preliminary n/a not available

Shutdown device for pipelines

THE latest addition to the range of hydraulic control valves designed by Fluidpower (Stainless Steel) Limited, Great Yarmouth, provides localised emergency shutdown of gas or oil production platform pipelines to prevent fire.

The valve has been developed and manufactured by Fluidpower to help specifiers meet the requirements of the safety legislation introduced by the Department of Energy following the Piper Alpha oil platform disaster.

It has been extensively tested and units are now being installed on all of the Leman and Inde field gas producing platforms operated by Amoco (UK) Exploration Company.

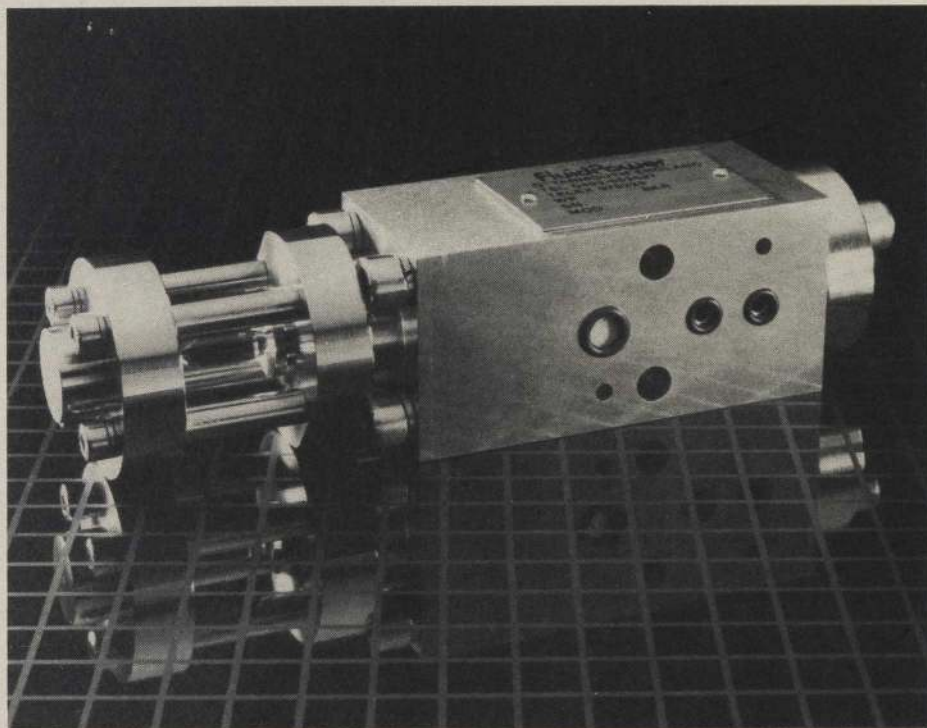
A heat-sensitive frangible glass bulb provides the valve's activating device. This has been specifically designed to be screwed into the body adaptor of Fluidpower's hazardous area solenoid valves, already used by many operators in emergency shutdown valve control systems, in place of the solenoid.

The valve is then installed directly on the pipeline valve actuator and connected hydraulically in series with a local emergency shutdown solenoid

valve. On a conventional three-way, two-position valve the bulb maintains the open position to supply hydraulic fluid to the actuator until excessive heat causes it to fracture. The supply is then blocked and the actuator

vented.

Four bulb temperature ratings are available: 57°C, 68°C, 79°C and 93°C. Valves are available with various flow and pressure ratings and flow path configurations.



Fluidpower's hydraulic control valve

Philips Aromatics Analyser

PHILIPS Analytical Chromatography has introduced a custom-designed system for the rapid analysis of aromatic hydrocarbons in kerosine and other aviation fuels.

This analysis will allow fuel suppliers and aircraft operators to meet strict limitations on levels of aromatics in aviation fuels. These limitations have been imposed in order to minimise smoke emissions from aircraft engines, particularly upon take-off and landing.

The PU4100 HPLC Aromatics Analyser offers significant improvements on the provisional test method (AT) using normal phase high performance liquid chromatography (HPLC) recently published by The Institute of Petroleum (IP).

IP Proposed Method AT uses column backflushing and a combination of refractive index and ultraviolet detection to determine total aromatics concentration and then correct for naphthalene content.

In-situ pressure testing

HYDRA-LOK Ltd of Barrow-in-Furness, Cumbria, have developed a service for in-situ, localised pressure testing.

Originally developed for the connection of templates and platforms to piles driven into the sea bed, Hydra-Lok have adapted their patented tool technology for the purpose. The tool can be introduced wherever there is local access to the interior of the pipeline, for

instance pig traps. It can be lowered and recovered for vertical testing, or fitted with skids or wheels for horizontal location. Once in position, the tool seals are inflated and the test area between the seals can be pressurised to a maximum of 11,000psi (750 bar) using a range of media such as water, glycol or gas. Pressure is applied gradually and can be sustained over a long period.

Technical support

PM SERVICES has announced an advanced computerised call management system. The £1 million new package will streamline all aspects of PM's service operations — from receiving service calls and planning spares and technical support to providing a range of service to the company's 16,000 customers.

The new package has been developed for PM by GPT Sales & Service's Mobile Communications. It is based on GEC's own National One radio network and the computer based ACE Service Management System from Anjec Computer Services.

Station unit

DUNCLARE Dispensers Ltd demonstrated a wide variety of their products at the Forecourt Marketing and Equipment Show at the National Exhibition Centre, Birmingham.

Pride of place was a new station controller unit, a new addition to the independent petrol pump manufacturer's 'Foreman' kiosk pump control system.

The new unit can interface forecourt pumps to a variety of different makes of Point of Sale terminals to provide the operators with a wide choice of equipment.

Exhaust check

BRITAIN's motorists are now the first in the world to be able to ensure that their vehicles are not contributing excess levels of polluting gases from their exhaust pipes, by testing on a petrol station forecourt.

A new British invention, known as the green machine, is being produced by a Nottingham engine diagnostics company known as Britest Limited and distributed to the forecourt market by DADS the specialist forecourt suppliers.

The first machines, which have already been sited, resemble a set of traffic lights in design and once the motorist has put a sampling hose in the car's exhaust-pipe

and a token in the machine, one of those lights will indicate the state-of-tune of the vehicle's engine.

The flashing message is clear: green means the emissions are low and within existing EEC guidelines, amber that they are on the border line and red that high levels of toxic gases are being produced, polluting the atmosphere and as the engine is out-of-tune, wasting petrol.

Britain is expected to join the rest of Europe in legislating low levels for car exhaust emissions; in some EEC countries an amber or red light on the green machine could result in prosecution.

Advanced control system



DESIGNERS of technologically advanced forecourt equipment, Bennett-Beck, have launched a new series of Point of Sale and Site Control Systems.

Called Access, the series consists of the Access 2000 site controller and the Access 2001 integrated Point of Sale and Site Control System. Both systems, although very comprehensive, are very simple to use.

The Access 2000 site controller is a powerful and expandable unit which has been designed specifically for the petrol forecourt and can control up to 16 fuelling positions each consisting of up to four products.

It is easy to use and has 2 x 40 character 'plain English' operator prompt displays thus reducing staff training time.

The Access 2000 features six operating modes including post-pay and pre-pay combinations. It can supply extensive management reports and provide detailed security and diagnostic trace reports for full site control. Full battery back-up is standard.

The new Access 2001 combines all the main features of the Access 2000 with many additional benefits to provide the ultimate in shop and forecourt management performance.

Lubricant dispensing

SAFE, fast and accurate dispensing of lubricants in busy automotive workshops is made possible by Lubesafe, a new device developed by process control specialists Detectronic.

Capable of servicing up to six delivery points, and operating on 240 volt single phase electricity and a 80psi air supply, it is suitable for use in both large and small workshops.

Air pockets in lube lines are automatically detected and vented to ensure an accurate totalised record of lubricant dispensed is displayed on the control panel.

For more detailed management information an optional printer facility is available. This provides the operator with a docket for each job, itemising job number, day and week number, lubricant dispensed, quantity and time. To simplify job accounting and billing, the same information can be down-loaded daily or weekly, to a computer via a standard RS232 link. Alternatively this can be used to locate mimic totaliser/printer units in the manager's office for remote supervision.

Managers can also obtain hard copy reports of lube issues, by the day, week or month for comparison with totalised registers or other records so that anomalies can be easily traced.

The unit and all downstream lube lines are protected from excess pressure in the incoming lines by a pressure switch/shut-down device. A custody transfer flow meter of an EEC approved design ensures absolute accuracy by monitoring flow.

BP Logica contract

BP Oil UK Ltd — the operator of the BP retail network in the UK — has awarded Logica a contract worth over £300,000 to supply a retail communications system to help streamline customer payment processing operations and improve the flow of management information.

The system, which will be based on the Storenet/2 product, will initially network existing electronic point of sale terminals and personal computers to help overnight transfer of electronic payment and business data from 150 petrol stations for central processing. This will enable BP Oil UK to reduce the costs of plastic card transactions at sites across the retail network, and exercise greater control over stock and operations at selected sites.

Seismic first for Polar Princess



HALLIBURTON Geophysical Services (HGS) announces that its seismic vessel *Polar Princess* has started a pioneering North Sea contract for Conoco (UK) Limited using a new high technology multiline recording technique for 3D seismic.

The *Polar Princess* during April began the first six-line seismic operation using triple 3000 metre streamers and dual source arrays in the North Sea. This technique will increase the amount of high quality 3D seismic that can be acquired in a single pass of the vessel by 50 percent compared with conventional four-line operations.

The benefit to the operator of the new technology will be faster and more efficient collection of data for assessing the exploration potential of oil and gas licensing areas.

Wing dredger



THE NEW Wing Dredger has successfully completed its first trials off Shoeburyness in the Thames Estuary (29/30 March).

The dredge, designed by Rapid Wing Dredging Ltd, uncovered a trench 20m long, up to 12m wide and up to 15m deep in under ½-hour in Thames mud and sediments. The trench was characterised by a flat bottom with spoil heaps to each side.

The Wing Dredger takes the form of a giant aerofoil section, 30ft x 20ft, which is towed above the seabed. Two powerful thrusters, with a combined thrust of 45 tonnes, provided the down-draught to disperse sediments.

Pilots' charge card

A NEW international aviation fuel card, which features a unique hologram produced by Light Impressions Europe plc, is from Air BP, the company responsible for global marketing of BP Aviation Fuel. The card allows pilots to purchase aviation fuel from 800 locations around the world.

Launched last month, the new cards feature an embossed hologram globe with the words "Air BP" written across it. The new card design was commissioned as part of its programme to issue all corporate material with the company's recently updated green and yellow logo.

Light Impressions created the hologram as an integral part of the design, upgrading the appearance of the company's original fuel card and functioning as a security device. Holograms are virtually impossible to copy.

Air BP have produced an initial run of the cards aimed at the prestige business executive jet user. Amongst the card's prospective users are a number of major international companies, jetsetting individuals and owners of one or more light aircraft.

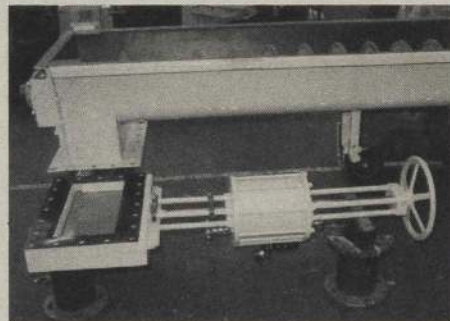
Isolating oil-based mud

RECLAMATION of oil from drilling mud and drill cuttings by a centrifuge system designed and manufactured by Thomas Broadbent of Huddersfield has successfully employed large square aperture Reiss slide valves to remove the problem of oil based cuttings bleeding through the screw conveyors employed in the holding tank of the cuttings cleaning system.

The use of oil based muds is increasing, particularly where fast deviated deep drilling is required. Depending on the penetration and hole size, cuttings can be generated up to 25 tonnes per hour (dry weight) and these cuttings when 'wetted' with oil based drilling fluid in, can hold up to 25% of oil by weight.

To dispose of cuttings into the sea in this oil wet state results in financial loss as well as environmental problems in sensitive onshore areas. The efficiency of the centrifuge system will clean drill cuttings to well below the disposal limit of 10% oil on dry cuttings to conform to current legislation in the UK and some other European countries as well as reclaiming the expensive drilling mud and additives for re-use.

The principle of the centrifuge cleaning system is to collect the cuttings and lubricant and sieve them through vibrating screens to remove the fine particles



The Reiss slide valve

which are then put into a holding tank which also acts as a buffer for the system as a whole. This is the first stage of the processing to remove the oil content of the fines.

In the bottom of the tank two screw conveyors transmit the oil and mud mixture into a hopper chute and then into a wash tank which has clean oil added to the cuttings to provide a suitable consistency before transmitting to the primary grading centrifuges.

The valves' stainless steel slide plate, which is either fully open or closed, has a manual override if required.