

*(reprinted with permission from New Scientist, 4 October 1973)*

## **A new monster in the lochs**

If you want to annoy an oilman simply confuse "rigs" and "platforms". To an oilman a rig is for drilling. A platform is something else. Once rigs have mapped a subsea reservoir of oil, platforms are installed.

From a single platform as many as 30 or 40 separate wells are drilled, fanning out below the seabed to allow the oil to flow up through casings to wellheads on the platform. From the wellheads the oil may then flow into a pipeline, or into storage tanks, or into a tanker moored nearby.

A single platform may cost upwards of £40 million. That is why, at latest count, at least nine different construction firms in Britain are battling for North Sea production platform orders. It is also why two groups of West Highland villagers are bracing themselves against the threat of an unparalleled onslaught.

By September 1972 five platform-construction firms had found for themselves working footholds around the British coast. The Brown & Root/Wimpey consortium, Highland Fabricators, had carved out the world's largest graving dock at Nigg Bay on the Cromarty Firth, and was setting to work on the first platform for the Forties field. Laing Pipelines Offshore, at Graythorp on Teesside, had won the contract for the second Forties platform. The British Steel Corporation's, Redpath Dorman Long (RDL), had moved into a disused water's-edge colliery site at Methil, in Fife, and was building a platform for Shell's Auk field; in due course RDL also won the contract for the first platform for Shell's giant Brent field. The American firm of J. Ray McDermott had a site at Ardersier, southeast of Inverness; and Mid-Continental Supply Cleveland Bridge had one upriver from Nigg at Alness.

Then the International Management and Engineering Group (IMEG) study of potential benefits to British industry from offshore oil and gas developments, commissioned by the Department of Trade and Industry and thereafter regularly cited as the basis of government policy, suggested a halt. It declared that the entry of further firms into the platform-construction stakes would be "undesirable", and elsewhere warned that further entrants might be "faced with a situation of over-capacity". But the lure of million-pound contracts was too appetising to be overridden by a trifle like "over-capacity".

By mid-1973 at least four more firms were in the running. Taylor Woodrow had a site at Alness, Sir Robert McAlpine had one at Ardyne Point downriver in the Firth of Clyde, and the British-Dutch Andoc consortium one at Burntisland, in Fife. None, however, had an order. John Mowlem & Co. Ltd had neither an order nor a site. But it too was in the running, in a roundabout fashion.

All the contracts won by the early entrants were for the traditional form of steel platform. More precisely the contracts were for steel platform "jackets" - oilman's parlance for the supporting structure between the seabed and the working space at the top. A steel platform jacket is usually constructed on its side, at the edge of the water. When the jacket is complete it is fitted with buoyancy tanks, floated out to its deep-water location, ballasted into a vertical position, sunk onto the seabed and secured in place with piles. That can be said in a sentence; carrying out the operation may be something else again, particularly in the North Sea.

## **Concrete moves in**

The North Sea and other offshore basins around Britain are probably the most unpredictable and potentially ferocious waters yet considered for extraction of oil. Technology that has been proved in the Gulf of Mexico and off the southern California coast must be proved anew in the harsher context of the North Sea. There has, therefore, been mounting interest in new types of oil-production technology which might exhibit advantages over the traditional. Among these the variation receiving most attention is platforms made not of steel but of concrete.

A concrete platform is a "gravity structure", a broad "raft" with one or more vertical towers, built upright, towed to its final resting place in an upright position and sunk vertically onto the seabed. Unlike a steel platform a concrete platform does not need to be held down by pilings; it is held in place by its own weight. A concrete platform can be built with integral buoyancy tanks for its sea-journey; once the platform is in place the tanks can be used to store oil. Furthermore, worrying shortages both of steel and of qualified steelmen, welders in particular, make the concrete alternative tempting. But the oil companies, although interested, have been cautious.

Concrete deepwater technology is still in its infancy. The first such structure, the Ekofisk One storage tank, has only been in place for a few weeks, and there has never been a concrete production platform built before. In addition to all the reservations associated with translation of a major civil engineering innovation from design stage to installation, the concrete platform faces one unusual hazard. The broad concrete "raft" which forms its base must sit securely on a level foundation.

It is not yet clear how reliable the seabed of the North Sea will be, with regard to effects like scouring. Moreover, the recently-discovered phenomenon of North Sea "sand waves", moving "dunes" on the sea-floor, might present disconcerting problems, changing a level location into one with an awkward ridge in the middle of it.

Be that as it may, on 20 July Mobil placed the first order for a concrete production platform, for its Beryl field. The order was for a design called "Condeep", and was placed with Condeep's original designer, Hoyer-Ellefsen of Stavanger, in Norway. Shortly thereafter Shell followed suit, ordering another Condeep from Hoyer-Ellefsen for the Brent field. Needless to say the British construction industry has been unhappy about two such orders for the British sector going to a foreign firm. Taylor Woodrow, in cooperation with the French firm Sea Tank, has a concrete design which it is prepared to build at Alness. Sir Robert McAlpine has another on offer at Ardyne Point. RDL has a new hybrid steel/concrete design on offer at Methil. But the British licensee of the Condeep design is John Mowlem & Co Ltd - and it does not have a site.

The Condeep platform was designed, by its Norwegian originators, to be built in a fjord, with very deep water close inshore. John Mowlem, accordingly, has been looking for fjords in Britain. It has not found any. In desperation it has opted for possible sites in Wester Ross, at Drumbuie in Loch Carron, or at Ullapool in Loch Broom. In almost every conceivable way Drumbuie and Ullapool are appallingly unsuited for the introduction of massive civil engineering operations. But Mowlem urgently wants one or the other.

## **Meanwhile, back at the croft**

At this point the platform issue comes suddenly into focus. No longer is it simply about mammoth corporations jockeying for mammoth contracts to build mammoth structures. Suddenly it becomes possible to see people. About 2000 people live around Kyle of Lochalsh, on the west coast of Ross & Cromarty across the narrow sound from the Isle of Skye. Much of the land on which they live is part of the Balmacara estate, deeded in perpetuity to the National Trust for Scotland in 1946.

A couple of miles north of Kyle is the shallow bay of Port Cam on Loch Carron, and just up the hill from the bay is the cluster of crofters' cottages called Drumbuie. Roddie McKerlich lives in one of the cottages. As well as maintaining his small croft he works in the Kyle Post Office. So does Charlie MacRae, who lives slightly farther east at Plockton. They are members of the ad hoc South West Ross Action Group, and - rather to their surprise - treasurer and secretary of the Drumbuie Fighting Fund. And they, and their neighbours and friends, do not intend to surrender Drumbuie without a battle every inch of the way.

The South West Ross Action Group came into being last spring. When Mowlem and Taylor Woodrow (which already has a site at Alness) filed separate applications for planning permission to construct concrete production platforms at Port Cam the local people were taken completely by surprise. So was the National Trust for Scotland. The Trust, after lengthy deliberations, declared that it would oppose the applications "root and branch", and has since stood stoutly by this declaration. But the Trust is an absentee landlord, and the people around Drumbuie viewed with unquenchable suspicion the meetings between Trust officials and the construction firms.

The local people, fired by county councillor Michael Reyntiens, decided they could only be completely sure of their case if they put it themselves. A swift phone-around assembled 15 signatories to a nine-point manifesto submitted to Ross & Cromarty County Council as a formal objection to the planning applications. As the introduction to their submission says, the South West Ross Action Group are all people who both live and work in South West Ross District. They cover a wide spectrum of political views, job background and income levels.

While hoping for the support of the National Trust for Scotland, and of Ross-shire County Council, the Action Group, in September, decided to brief its own counsel to present its case at the forthcoming public inquiry.

A spectacular two-hour drive to the north lies the small community of Ullapool, in the neck of Loch Broom. It has a total resident population of some 950, including 370 adults. When John Mowlem's Drumbuie application began to meet serious opposition, Mowlem filed a second application, for equivalent operations at Ullapool - and the Ullapool reaction was one of near-unanimous consternation. Once again, the local people assembled an ad hoc committee, the Lochbroom Action Group. The Lochbroom Action Group's formal objection identified points closely paralleling those put forward by the South West Ross Action Group concerning Drumbuie. The two Action Groups have established tight lines of communication, sharing relevant information and, within the limits of timing, coordinating their campaigns. Neither Action Group has at any stage lapsed into the Roskill syndrome of saying "put it somewhere else".

Both Action Groups take bitter issue with the claim that platform construction will bring "jobs", "development" or "economic benefit" to their areas. Their case is that this particular form of development is in almost every way grossly inappropriate.

A site is unlikely to function for more than a decade. Local communities will be unable to provide more than a minute fraction of the work-force required, and in doing so will lose those who presently carry out essential local services.

The effects on the social and economic fabric of the community is likely to be severe. Police, sewage, health, and entertainment facilities will be put under a strain which may be intolerable. Local businesses, while likely to lose staff to the higher wages of the construction firms, are unlikely to draw much financial benefit. A work camp feeding 750 will not do much shopping at the local grocer's. Indeed the presence of a monolithic operation like a platform-site would almost

certainly frighten off any other enterprise, such as light engineering or oil-related supply and service activities, which might otherwise be interested in Wester Ross.

The inevitable shortage of staff and distorted price-levels in the area would be a severe deterrent to any such more suitable and longer-lasting development. Suggestions that platform construction would for instance relieve the Kyle railway line, due for closure in a spasm of absurdly ill-judged British Rail "economy", cannot be defended. Steel would arrive at a site by ship; aggregates would be quarried locally or dredged from beaches of islands; and company staff would travel, needless to say, by helicopter.

The Secretary of State for Scotland, Gordon Campbell, has called in both the Drumbuie and Ullapool applications. He awaits reports from Sphere Environmental Consultants about the probable impact of platform sites at Drumbuie and Ullapool. The Drumbuie report is not expected before 28 September; the Ross-shire County Council will meet on 22 October to decide, on the basis of the Sphere report, whether to support or oppose the Drumbuie application; and then, only three weeks later, on 12 November, the Drumbuie public inquiry opens in Kyle. In a similar fashion, the Sphere report on Ullapool will not be available before the year's end. But the Ullapool public inquiry will probably begin before the end of February 1974.

The Action Groups would like to know - why the desperate hurry? The Secretary of State for Trade and Industry is instructed when allocating offshore licences to take account of the contribution an oil company makes to the economy of the UK. Mobil and Shell, by placing platform orders in Norway, have dramatically blotted their copybooks, and could be so informed. There are platform orders going begging; and there are plenty of British construction firms only too eager to tender for jobs they are already equipped to carry out.