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## Whales at risk in sonar sea exercises

Mark Townsend The Observer

It is one of the loudest sound systems devised by man, capable of sending a sonic boom so thunderous experts warn it can rupture the brains of whales hundreds of miles away.

Yet defence chiefs have earmarked a staggering £340m for a new submarine sonar system increasingly linked to a number of mysterious whale deaths. Experts yesterday condemned the decision to press ahead without even a public meeting into its effects. A single ping of the new low-frequency technology can affect animals across 3.8 million square kilometres of water, roughly the size of the Pacific Ocean.

The noise, far greater than any natural sound, has been linked to ear damage and harm to body tissue, and can trigger intense confusion. Startled whales surface too quickly and suffer the bends, a decompression sickness that affects deep-sea divers but was thought an impossible condition in whales.

Environmentalists believe the introduction of the new radar violates marine laws to which the UK has signed up. They point to a series of whale strandings that coincided with naval exercises involving sonar, to support their concern. During the latest, a fortnight ago, a Nato exercise off Morocco was followed by two dead whales being washed ashore on the nearby Canary Islands.

Unlike the UK, the US has staged a number of public hearings over the use of low-frequency sonar and 12 months ago a judge banned the American Navy from testing a similar system to that which the MoD is keen to introduce. The judge concluded that the booming sounds could damage marine life, yet his comments have done little to deter Britain from entering the low-frequency race in which powerful speakers on a metal post are lowered into the sea. An intense burst of noise designed to detect enemy vessels floods the ocean, causing panic among whales, which use similar sonic booms to find food and mating partners.

Despite such concern and the recent defence spending cuts, negotiations for the sonar sets to be fitted to six UK vessels have just begun. The MoD admits that if the technology performs well in secret trials, it will be officially accepted in 18 months.

Seven weeks ago the MoD conducted a covert series of trials of the low-frequency system off Scotland's northwest approaches that are still being analysed. The tests were conducted at 4,500m, in an area where humpback, sperm and minke whales have all been spotted. No one outside those conducting the tests has any idea whether the trials have been harmful. The disquiet of campaigners is exaggerated by the fact that they have not been invited to a forthcoming government meeting where the effects of noise

pollution will be discussed. However, a further series of trials is understood to be planned for later this year off Britain. Experts say that because whales navigate using their ears in the dark, pumping sound is akin to shining a bright light directly into a person's eyes, leaving them disorientated and practically blind.

'There is little doubt that these military sonar trials will kill or injure untold numbers of whales and dolphins and other marine life,' said Liz Sandeman, founder of the charity Marine Connection. Certainly the evidence suggesting a link continues to mount, despite reassurances from defence experts. Last month a report by the International Whaling Commission indicated that military sonar induced bizarre, self-destructive behaviour in whales. Scientists cited a mass stampede of 200 melon-headed whales into shallow water in Hawaii during a US training exercise. Delivering its verdict on the US Navy's mid-frequency sonar, which is less powerful than that planned by the MoD, the report says that the evidence of suffering to whales 'appears overwhelming'.

Their verdict followed a report that challenged the notion that whales cannot suffer from the bends. In some beached whales, gas cavities had formed in their livers to the extent the organs, when dissected, resembled aerated chocolate.

Others warn that the sonar could block out the ocean's natural noises: whales need to listen to the quiet swish of a school of fish and may go hungry or stop using their own sonar, which prevents them finding food. Defence chiefs, however, insist that the new technology will enhance the ability of British vessels to detect, classify and track enemy submarines that 'remain one of the main threats to our maritime forces in times of conflict'.

The MoD insists all trials are environmentally sound and in accordance with industry practice. Military experts say the technology represents the changing face of warfare. Cold war technology relied on passive sonar, which only listened out for enemy vessels. As modern subs have become increasingly quiet, active systems that emit sounds millions of times more powerful are deemed necessary.

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The Marine Connection assisted in this excellent article.

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