

Catalogue of faults in UK nuclear subs

Royal Navy analysis lists 700 reactor 'incidents'

THE GUARDIAN Thursday March 3 1988

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in Washington

THE REACTORS which power Britain's nuclear submarines were involved in more than 700 "incidents" during their first 16 years of operation, ranging from routine tests and minor errors of seamanship to the kind of accident which nearly crippled Resolution, the Polaris submarine, in the Firth of Clyde this winter.

No British nuclear submarine has been lost, though a fire did put one out of action for lengthy repairs, according to an internal Royal Navy analysis obtained by the Guardian.

However, the US Navy has lost one vessel and the Soviet fleet has almost certainly lost several in addition to the accident when missile fuel blew up inside a nuclear submarine off Bermuda in 1986.

An analysis of 435 of the 712 incidents between 1962 and 1978, carried out at the nuclear department of the Royal Naval College at Greenwich, showed that 205 were caused by mechanical problems, 107 by operator error, and 123 by primary or secondary electrical faults, presumably not unlike the "minor electrical malfunction" which the Ministry of Defence says occurred on board HMS Resolution at Faslane on January 26.

The Faslane incident is likely to prompt Opposition and back-bench concern in today's navy debate in the Commons, with questions being raised about safety and training in the nuclear fleet.

A typical reactor can generate 70 million watts, enough power to run a city. But the need for speed and endurance at sea imposes different safety constraints from those which operate on land.

Admiral Hyman Rickover, the autocratic "Father of the US nuclear navy," imposed rigid procedures on American subs and, as US nuclear submariners recalled yesterday, on the Royal Navy after the 1961 Polaris agreement gave it access to Rickover's secrets.

But the safety of the ship sometimes requires a naval reactor to maintain power at sea in circumstances when a land-based Sellafield or Three Mile Island would be shut down — "scrammed" in naval parlance.

Captain Jim Bush, a nuclear veteran now working at the Centre for Defence Information, a private US think-tank frequently critical of Pentagon policies, said that of the 700 incidents "probably no more than a dozen were significant in that they resulted in the release of radioactive material."

Though the exact nature of the Faslane incident is unknown, the vessel's cooling systems failed, leaving the reactor, which may have been shut down at the time, to over-heat. It had come within minutes of "disfiguration," the first step towards core melt-down, by the time crewmen restored power to the cooling system. One man had to be scrubbed down for 24 hours after exposure to radiation.

The leading naval powers now share nearly 400 nuclear-powered warships, including Britain's 13 hunter-killers and its four Polaris missile subs, soon to be replaced by Trident. With Canada, India and Brazil pledged to follow suit, some analysts are expressing concern about naval nuclear

proliferation.

The sole US nuclear loss, the USS Thresher, which sank during a deep-sea dive in trials in 1963, probably sprung a leak and flooded, causing a "scram" which cut off power. It was not a reactor failure as such. In the 1986 Soviet accident missile fuel, not a nuclear warhead, was involved.

The Pentagon said yesterday that "in over 3,100 reactor years of US naval reactor operations there has never been a reactor accident or a problem resulting in fuel damage."

However, Mr William Arkin, defence analyst at the Washington-based Institute for Policy Studies, said: "My sources in the navy tell me there have been serious incidents in nuclear submarines, where crew members have had to be airlifted to hospital and the submarines required to surface to deal with it."

He estimated the Soviet fleet's significant incident rate at 200 over 10 years. Soviet designs emphasise speed and weaponry over safety, according to US experts.

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Questions in Commons over sub encounter

QUESTIONS about the reported loss of top-secret tracking equipment from a British nuclear submarine in an encounter with a Soviet submarine are to be raised in the Commons today by the Labour Front Bench.

Yesterday the Ministry of Defence refused to comment on the report in the Mail on Sunday that the Russians had got hold of the top-secret sonar system while it was being towed a mile behind the submarine Splendid.

The paper said its inquiries suggested the Russians had deliberately rammed the towing cable while the Splendid was on patrol beneath the surface of the Barents Sea off Murmansk in the Arctic, north-west of Russia.

Labour Defence spokesman Mr Martin O'Neill said: "This equipment is in an area where Nato navies are far ahead of the rest of the world, and the loss of such equipment would be a severe