How could the US stop Britain firing Trident

General context

All scenarios assume that the UK wishes to exercise its right to supreme national interest and fire Trident independently of the US at a time when the US is actively opposed to the UK using nuclear weapons.

The closest real world example occurred just 11 years after World War Two when Britain, France and Israel attacked Egypt to regain control of the Suez canal and were opposed by the US. The US used economic, diplomatic and military pressure.

Peter Hitchens describes the military pressure.

The following discussion assumes that despite economic and political pressure, Britain still intends to fire Trident.

Scenario 1 Short notice

A Vanguard class submarine is on patrol. The US has options to prevent missiles from being fired, to shoot them down once launched, and before that to prevent a firing order being sent or received.

The general assumption is that Trident is effectively undetectable. However, compared to any other state such as Russia, the US has huge advantages in seeking to find Trident.

The US is the world leader in Anti-Submarine warfare. In this scenario the full range of capability would be devoted to finding Trident. It is worth keeping in mind that the US; preparing to destroy them if the war turned Hot.

Present US ASW capability are led by the aptly named 'hunter-killer', attack submarines designed for exactly this mission. These submarines (SSNs) are supported by aircraft, satellites and remote sensors on the seabed.

Future technology for undersea drones to detect submarines is currently led by the US and programmes run through DARPA, although public debate has focused on non-Western forces capability against the West.

The US Navy has generations of experience working alongside the British Navy and access to the computerised logs of the acoustic and aquatic footprint of Vanguard patrols.

Thus a Vanguard captain and crew would be required to attempt to fire Trident while being hunted by the US Atlantic fleet. They would do so knowing that their boat is not in top condition and that the Royal Navy has had to operate first Polaris and now Trident submarines in conditions of significant mechanical failures and crew manning levels below that desired.

Shooting down Trident

The US Navy has long been equipped with a system for shooting down missiles and has it installed on dozens of its warships. This Aegis system has a proven capability against ballistic missiles. It is important to note that in the first – boost – phase after firing Trident missiles travel comparatively slowly and are thus easier to shoot down.

The 16 missiles on a British Trident boat at not designed to be fired simultaneously but rather one after the other with a technical delay between each firing. As soon as one Trident is launched the intense heat from the missile makes it instantly visible to hostile Anti-Submarine Warfare forces which would then concentrate sea and airborne missiles on the launch point to destroy the launching submarine. The process summarised here has been exercised intensely by the US and the Royal Navy against possible Soviet and now Russian missile attack for decades.

Thus the unlikely best case of a British Trident launch against a hostile US Navy is to launch one missile that the US would have every opportunity to shoot down.

The US has a range other abilities to prevent a Trident launch by attacking the British communications system used by the British Prime Minister to order the launch of Trident.

And, a range of abilities cut off or interfere with a range of computer systems essential to the system.

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Scenario 2

The above scenario concerns the first weeks perhaps two months of a crisis. Once HMS Vanguard has to return to port up the Clyde it would be replaced by another submarine.

In this case the task for the US is vastly easier. Any British submarine leaving the Clyde would be welcomed by US attack submarines and supporting air and sea assets and would then have to face the task of immediately evading the the US Navy.