

## Attack Submarine returns to the Fleet

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**The Royal Navy's nuclear-powered attack submarine, HMS Torbay, is preparing to return to the Fleet following a year-long £8M refit at HM Naval Base Clyde, Faslane.**

In addition to routine maintenance work, the Trafalgar class submarine has been upgraded to carry the latest longer-range Block IV version of the Tomahawk cruise missile and an improved version of the world-leading Sonar 2076 system. The latest improvements make Torbay the most powerful boat in the Fleet.

Baroness Taylor, Minister for Defence Equipment and Support, said:

"This overhaul is part of a vital programme to ensure that our Trafalgar class submarines remain at the forefront of Britain's underwater operational capabilities until the end of the next decade. HMS Torbay will undoubtedly bolster the potency of our submarine fleet with her new missiles and improved sonar systems."

Captain Ian Lofthouse RN, from the MOD Defence Equipment and Support In-Service Submarines Project Team, said:

"I believe HMS Torbay's overhaul demonstrates an excellent collaboration between the MOD, Royal Navy and the two Babcock Marine sites. It represents a significant upgrade to support Torbay through her forthcoming operational life, ensuring her key place in submarine flotilla operations into the future."

The refit comprised routine maintenance activity as well as the opportunity to incorporate upgrades. Around 400 military and civilian personnel were employed on the project at Faslane.

The advanced Sonar 2076 is a fully integrated system comprising bow, flank, fin and towed arrays that can track an object the size of a bus at a distance of more than 50 miles (80km). New communications equipment will allow internet access even when the submarine is deep underwater, and a new charting system is due to be trialled on board.

Following sea trials and sea training over the next few months, HMS Torbay is expected to be fully operational by the summer. Torbay is one of seven 5,200 tonne Trafalgar class nuclear-powered submarines, entering service in 1987. All of the class are based at HM Naval Base Devonport, in Plymouth.



HMS Torbay returns to its home port, Plymouth  
[Picture: LA (Phot) Bernie Henesy]

Under the Swiftsure and Trafalgar class Final Phase Update programme, the newest four Trafalgar boats are being upgraded to bring their equipment up to the standard of the successor Astute class. The overhaul for HMS Torbay is part of a programme to upgrade all the Royal Navy's Trafalgar Class submarines, and ensure they remain at the forefront of Britain's underwater warfare capabilities until the end of the next decade.

## Tomahawk Block IV goes operational

Meanwhile, the latest version of the Royal Navy's Tomahawk land attack missile (TLAM) has been declared operational - three months earlier than planned.

Used to arm submarines, the new Tomahawk Block IV missile is considerably more capable than its predecessors. It has a significantly reduced response time and can fly further, striking land targets from the sea up to one thousand miles (1,609km) away with even greater precision. They are able to re-target or safely abort in flight and can relay images en route to boost intelligence gathering. The missile was first successfully test fired from a Royal Navy submarine in June 2007.

Baroness Taylor said:

"These missiles extend the Royal Navy's world class capability to deliver long range precision attacks covertly from submarines. This is a real boost to the Navy's firepower, and it is a testament to the hard work of MOD and industry that we are able to bring this into service early and within budget."

The Tomahawk missiles can be carried by Trafalgar Class attack submarines and will be deployed in the new Astute Class when they enter service. HMS Torbay is the first submarine to be operationally equipped with them.

The MOD purchased 64 of the TLAM Block IV missiles from the United States in a £70M deal signed four years ago. In addition, £25M has been spent to provide the submarine and ashore command and control systems necessary to exploit its new capabilities.

Tomahawk Block IV missiles are built by Raytheon in the US, with missile electronics supplied by its subsidiary in Glenrothes, Fife. BAE Systems and Ultra Electronics in Middlesex have also played a key role in electronics and other aspects of the submarine upgrade to enable launch of the new missile.



Tomahawk Land Attack Missile (TLAM) being fired from a submarine [Picture: Royal Navy]