



# The Current System

## The Submarines

- The UK's deterrent force comprises four Ships Submersible Ballistic Nuclear (SSBNs): HMS VANGUARD, VICTORIOUS, VIGILANT and VENGEANCE. The first was ordered in 1986 and built at Barrow-in-Furness. The first submarine commenced contractor sea trials in 1992 (the point at which its 25 year design life began) and the initial UK Trident deterrent patrol began in December 1994. Full introduction into service was completed to schedule with HMS VENGEANCE's first patrol in February 2001. At 16,000 tonnes, these are the largest submarines built in the UK; each vessel is 150 metres long, 13 metres in diameter and carries a crew of around 150 officers and ratings. Vanguard-class submarines are powered by a Rolls Royce designed and built pressurised water reactor. The UK's SSBN fleet is based at HM Naval Base, Clyde at Faslane.

## The Missiles

- The Trident D5 missile is a three stage solid fuel ballistic missile. Standing 13 metres high and weighing 60 tonnes, it has a range of over 4,000 nautical miles. The range of the missile is a great strength of the system as it allows the submarine carrying it to hide in millions of square miles of ocean, while remaining in reach of potential targets. Royal Navy nuclear-powered ballistic missile submarines carry up to 48 nuclear warheads on a maximum of 16 missiles.
- The 1963 Polaris Sales Agreement between the United Kingdom and the United States was amended in 1982 to establish a unique system of 'mingled

asset' ownership and management for Trident missiles. Those to be loaded in UK submarines are randomly selected from the stockpile at the US Navy Trident facility in Kings Bay, Georgia. The submarines then go to the Royal Naval Armaments Depot at Coulport near Faslane in Scotland where the missiles are fitted with warheads that are designed and manufactured in the UK at the Atomic Weapons Establishment (AWE), Aldermaston.

- The life extended Trident D5 missile is assessed to be capable of meeting our requirements of delivering assured deterrence until the early 2040s.

## The Mission

- In a posture known as Continuous At Sea Deterrence (CASD), one submarine, armed with up to 16 Trident missiles and up to 48 warheads, is always on deterrent patrol 24 hours a day, 365 days a year. The notice to fire has been increased to several days since the Cold War ended and the missiles are not targeted at any country. The 300th UK deterrent patrol will be completed during 2007. These deterrent patrols continue to demand the highest standards of stealth, safety and technical reliability.
- The professionalism of the Royal Navy submarine crews stands alongside more obvious technological achievements as a key component in fulfilling the deterrent mission. Unable to contact their families no matter what domestic crisis may occur in their absence, they deliver the peacetime safety and operational credibility to make deterrence work.

1980

1980 **Trident I (C4)** ordered

1981

1982

1982 **Trident II (D5)** ordered

1983

1984

1985

1986

1986 **HMS VANGUARD** ordered

1987

1987 **HMS VICTORIOUS** ordered

1988

1989

1990

1990 **HMS VIGILANT** ordered; first US operational Trident II (D5) SSBN (USS TENNESSEE)

1991

1992

1992 **HMS VENGEANCE** ordered

1992 **HMS VANGUARD** commenced contractor sea trials (start of 25 year design life)

1993

1994

1994 **HMS VANGUARD** – first UK Trident II (D5) missile launch and first UK Trident II (D5) deterrent patrol

1995

1994 **HMS VICTORIOUS** commenced contractor sea trials

1996

1996 **HMS VIGILANT** commenced contractor sea trials

1997

1998

1999

1999 **HMS VENGEANCE** commenced contractor sea trials

2000

2001

2002

2002 **HMS VANGUARD** commenced long overhaul period and refuelling at Devonport

2003

2004

2005

2005 **HMS VANGUARD** rejoined the Fleet, **HMS VICTORIOUS** commenced long overhaul period and refuelling at Devonport

2006

2007

2007 300<sup>th</sup> UK SSBN deterrent patrol

