Modernisation of UK nuclear forces
John Ainslie Scottish CND
Vienna International Centre
3 May 2012
An Anglo-American system
Nuclear Warheads

1994 – 2017  Mk4

2012 – 2036  Mk4A

2032 – 2067  Successor
Mk4A Warhead Modification

Two versions of the same Aldermaston job advert

“To support the approval programme for the introduction of the System into UK Trident.”

“You will support the approval programme for the introduction of the Mk4A AF&F System into UK Trident.”
Mk4A Warhead Modification

New capabilities of Mk4A

• Near Ground Burst Capability

• Reliable Ground Burst Capability

Both make Mk4A more effective against hardened targets (eg command bunkers and missile silos) than Mk 4.
Mk4A Warhead Modification

Equivalent US Mk4A programme
Nuclear Warheads

1994 – 2017  Mk4

2012 – 2036  Mk4A

2032 – 2067  Successor
This afternoon we are going to outline our plan to maintain the UK’s nuclear deterrent. The intention is to replace the entire Vanguard Class submarine system. 

S35

This afternoon we are going to outline our plan to maintain the UK’s nuclear deterrent. The intention is to replace the entire Vanguard Class submarine system. Including the warhead and missile.
Missiles

1994 – 2020  Trident D5

2018 – 2042  Trident D5LE

2040 – 2067  New missile
Trident D5LE

New guidance system
New flight control system

“support new missions”
“allow mission adaptability”
## Combined short term changes

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warheads per submarine</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>Warhead</td>
<td>Mk4</td>
<td>Mk4A</td>
</tr>
<tr>
<td>Missile</td>
<td>D5</td>
<td>D5LE</td>
</tr>
<tr>
<td>Fire Control</td>
<td>Mod 5</td>
<td>Mod 9</td>
</tr>
<tr>
<td>Navigation</td>
<td>ESGN</td>
<td>Upgraded ESGN</td>
</tr>
</tbody>
</table>
Effect of short term changes

- More accurate and more reliable
- More effective against hardened targets
- Fewer warheads can destroy the same number of hardened targets
Missiles

1994 – 2020  Trident D5
2018 – 2042  Trident D5LE
2040 – 2067  New missile
Submarines

1994 – 2032  Vanguard class

2028 – 2067 Successor submarine
Rebuilding Aldermaston

Massive rebuilding Programme

Total costs remain classified

Government conceals the link with new warheads
Two reasons for optimism

• Economic Crisis
  - £2 billion per year on nuclear weapons for 50 years (£100 billion)

• Possibility of Scottish Independence
  - Nowhere for Trident to Go
  - Scottish independence could mean nuclear disarmament for the UK