

The UK-US nuclear nexus

*Insights from the
Ainslie Archive*

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Tim Street is Secretary of British Pugwash and author of The Politics of Nuclear Disarmament (Routledge, 2021). He has been working on the Ainslie Archive for the Nuclear Information Service. This is the text of a talk given at the University of Kent in June, 2022.

John Ainslie authored twenty reports on nuclear policy, starting in 1992 with *Cracking Under Pressure*, about defects in British nuclear submarine reactors. He also collaborated with Professor Plesch, who co-organised these panels, on a 2016 report investigating how Britain relies on the US to sustain its nuclear status.

What is the Ainslie archive?

I am currently working with other members of the Nuclear Information Service team to organise John's archive. The archive consists of documents relating to the UK's nuclear weapons that John collected over several decades. He collected information from a wide range of sources, including official US and UK government files, activist correspondence, civil society reports, academic studies, photos, graphs, newsletters and media articles.

I found working on the archive interesting for the insights it provides into how John approached the varied nuclear issues he worked on. These include: UK preparations in the 1980s for Civil Defence in the event of a nuclear attack; how British military planners developed plans to target Russia with nuclear weapons, including the famed Moscow Criterion; and the purpose and location of the many nuclear weapons-related installations in the United Kingdom—both British and American.

NIS hopes that providing a platform for John's work will allow researchers to better understand British nuclear history and decision-making, and to prevent the nuclear past—and all its dangers—from being forgotten. So, my presentation today is intended to promote the Archive and invite you to access it online.

What is the Mutual Defence Agreement?

One of the topics which the Archive sheds light on is the Mutual Defence Agreement between the UK and the US. I am going to discuss John's thoughts on the agreement and relate it to NIS's own publications on the topic. For example, Peter Burt, former NIS director, explored in a 2014 briefing how the MDA is the main agreement between the UK and the US allowing co-operation on the development of nuclear weapons. Burt outlined how the MDA 'was first signed in 1958 to allow the exchange of classified nuclear information, nuclear weapon technology, and scientific expertise, with the aim of helping both nations to develop their nuclear weapons systems.'

The MDA is a formal treaty between the two nations and has been amended a number of times over its 56-year history. Most recently it has been renewed on a regular ten year cycle. This has allowed, Burt wrote, 'arrangements for the transfer of special nuclear materials and non-nuclear components of nuclear weapons.' The MDA was last renewed in 2014 when it was extended until December 2024. For Burt, British governments have pushed renewal of the Agreement through with minimal Parliamentary oversight, rather than allowing debate and discussion on the aims and consequences of renewing the treaty.

Since 2014, there have been significant developments in the nuclear weapons programmes of both the UK and the United States. For example, collaboration has taken place in nuclear warhead development and modernisation; submarine reactor design and development; exchange of special nuclear materials; warhead stockpile stewardship research; and the construction of new nuclear infrastructure. The Ainslie archive contains historical documents on each of these areas, helping us to understand their meaning and significance.

Ainslie on the Mutual Defence Agreement

Ainslie's main published thoughts on the MDA came in his report, *The Future of the British Bomb*. Here, Ainslie notably describes the MDA as one of two Anglo-American agreements—alongside the 1963 Polaris Sales Agreement—which 'constrains' British nuclear forces. In the case of the MDA, this is because 'the information and material provided by the US can only be used for mutual defence purposes'. As for the Polaris Sales Agreement, Ainslie explains that this required British nuclear forces to be assigned to NATO, except "where her Majesty's Government may decide that supreme national interests are at stake". At the same time, he also thought that 'The importance of the "assignment to NATO" of British nuclear forces is exaggerated'. This was because, he explained, 'Britain is

more likely to use nuclear weapons in a bilateral Anglo-American operation than either under NATO auspices or as an independent force’.

Ainslie then identified what, for him, was the critical issue, namely, ‘whether Britain could use its nuclear forces in a situation where the US was opposed to their use. If America objected then the attack would not be in both parties interest and would be in breach of the Mutual Defence Agreement. The US would be likely to use strong-arm tactics to dissuade Britain from acting.’ In practice, the UK’s ‘technical dependence’ on the US would be what would, he argued, ‘constrain any independent attack’. The British nuclear weapons establishment was thus ‘almost entirely dependent on the information provided’ by the MDA.

For example, the Joint Atomic Information Exchange Group controls the release of US nuclear weapons design information to the UK. There are also numerous Joint Working Groups which facilitate information sharing. Subjects have included specific scientific issues such as plasma physics, radiation and nuclear materials. There are also working groups focusing on Trident itself. John described ‘the flow of knowledge’ being ‘overwhelmingly, but not exclusively, from America to the UK.’

Nuclear targeting

In terms of technical dependence, the issue of British nuclear targeting was something Ainslie paid particular attention to. For example, the archive contains the data he collected when he was analysing whether Trident can be used without US consent and assistance and can be targeted independently of the US. Ainslie concluded that ‘reliance on American software for all aspects of targeting undermines nuclear independence. Any future British nuclear weapons system will only be as independent as Washington wants it to be.’

Ainslie goes into painstaking detail in *The Future of the British Bomb* about what this means in practice. For example, he writes—in his typically terse and economical style—that:

‘Targeting data on British Trident submarines is processed in the Fire Control System by software produced in America. This data is created in the Nuclear Operations and Targeting Centre in London. The centre relies on US software. In 2002 the Fire Control Systems on British and American Trident submarines were modified. Just before this the computers in the London targeting centre were upgraded. The American applications used for target planning and for fire control are complex and unique.’

The US could restrict how the UK could use Trident, he argued, because:

‘It would be possible for US programmers to modify the software supplied to Britain, either openly or covertly.’ Despite this, ‘even those who operate the system may not have an accurate perception of its dependence.’ He then repeats the point that ‘the British Trident system is only as independent as Washington wants it to be.’

The ability of the US to restrict British nuclear use decisions has far-reaching implications. For example, the idea of an independent British bomb remains central to its political mystique and thus its reproduction. Supporters of Trident argue that whilst the UK may be dependent on the US regarding nuclear procurement, London has independence regarding the decision to detonate it. Yet, for Ainslie, this notion is greatly undermined by the control Washington has over British nuclear detonation.

Democracy, transparency and accountability

In addition to researching these topics, Ainslie sought to introduce democracy, transparency and accountability to the UK’s governance of its nuclear weapons. As noted previously, the MDA is renewed every ten years. In 2004 John outlined his thoughts on why the MDA should be subject to democratic scrutiny. In June that year he wrote to Labour MP Bruce George, chair of the Defence Committee, calling on him to hold an inquiry into the renewal of the Mutual Defence Agreement and for there to be a House of Commons debate.

In the letter, Ainslie highlighted an ‘explanatory memorandum’ from the Foreign and Commonwealth Office, stating that ‘there are no financial implications of extending the application of Article III of the 1958 Agreement’. However, his contention was that ‘the history of Anglo-American nuclear co-operation has been that the flow of information from the US has been dependent on Britain maintaining a substantial research programme of its own.’

The main focus of the UK’s nuclear weapons development at that time was on the design of simulations of nuclear tests given the ban on real world testing. This, for Ainslie, was the likely ‘price of ongoing support from the United States’ for the UK. The Atomic Weapons Establishment at Aldermaston thus substantially increased its computing power ‘at considerable expense’. Peter Burt provided an update on the issue of computer testing in his 2014 report, stating that ‘the peer review arrangements’ provided by the MDA have provided an ‘opportunity’ for the US to learn from the UK’s ‘experience with projects’ where the latter’s ‘schedule is running ahead’ of the former. Yet Burt concluded that whilst

‘UK hydrodynamics research facilities and AWE’s superior expertise’ previously ‘served to give the UK an advantage in this area of science ... this is probably no longer the case.’

The MDA and the NPT

In addition to highlighting the need for democratic accountability, Ainslie also argued that renewing the MDA would not be compatible with Britain’s commitments under the Nuclear Non-Proliferation Treaty (NPT). The UK government’s position was that ‘movements under the MDA do not involve nuclear weapons or nuclear explosive devices’. However, Ainslie responded that such arrangements ‘do involve key components of weapons’. For example, he pointed to how ‘Sandia National Laboratory have said that they are supplying neutron generators for British Trident warheads. Tritium is filled with reservoirs for use in British warheads at the Savannah River Site.’

As such, Ainslie concluded that ‘the transfer of the components and the exchange of design information are contrary to the principles of the NPT’. Furthermore, the high levels of government secrecy over the details of the agreement showed both the UK and the US’s appreciation of the need to prevent discussion of this issue.

Concluding thoughts

In summary, the issues of legality, accountability and democracy highlighted by Ainslie regarding the MDA continue to apply to the debate over the Agreement today. It is therefore important to revisit the detailed research John Ainslie conducted—and reflect on its meaning for the UK—as it continues with its nuclear rearmament programme. In the lead up to the planned renewal of the MDA in 2024 the Nuclear Information Service will continue to advocate for Parliamentary scrutiny of the agreement.