



HOUSE OF LORDS

International Relations and Defence Committee

Corrected oral evidence: Defence concepts and capabilities: from aspiration to reality

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Members present: Baroness Anelay of St Johns (The Chair); Lord Alton of Liverpool; Lord Anderson of Swansea; Baroness Blackstone; Lord Campbell of Pittenweem; Baroness Rawlings; Baroness Sugg; Lord Wood of Anfield.

Evidence Session No. 4

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Questions 22 - 31

Witnesses

I: Dr Susan B. Martin, Senior Lecturer, War Studies Department, King's College London; Professor Andrew Futter, Professor of International Politics, University of Leicester.

Examination of witnesses

Dr Susan Martin and Professor Andrew Futter.

Q22 **The Chair:** Good morning. I welcome to this meeting of the International Relations and Defence Committee in the House of Lords Professor Andrew Futter, professor of international politics at the University of Leicester, and Dr Susan Martin, senior lecturer at the War Studies Department, King's College London. Welcome to you. Thank you for coming here to give evidence to our inquiry, "Defence concepts and capabilities: from aspiration to reality".

As always at this stage, I remind our members and our witnesses that the session is on the record. It is transcribed and broadcast. I also remind members to give details of any of their relevant interests before they ask questions. As ever, I will ask the first question, which is always rather general in nature, and thereafter my colleagues will ask more focused questions.

I ask this first question against the background of having been the person, as Minister, to represent the UK at the last RevCon. One of the most controversial announcements in the Integrated Review was the reversal of what was previously a downward trajectory in the UK's nuclear warhead stockpile ceiling. In addition, the Government are reverting to offering no public acknowledgement of the number of warheads in the operational stockpile, nor indeed the number of deployed missiles and warheads.

What do you believe were the rationales behind these moves, and do you find those rationales compelling? I will begin with Professor Andrew Futter, but when we go to further questions I will leave it to you to determine who goes first.

Professor Andrew Futter: Thank you very much for inviting me here today.

The simple answer is that we do not really know exactly why this was done, or at least I do not know; obviously, the Ministry of Defence knows, but so far this hasn't been made public. From the outside, you could make a number of guesses, I suppose. There could be a link with the next warhead that we will need for the deterrent. When that comes online, it could be something to do with the transition between the old warhead to the new one. The increase in the ceiling of the stockpile could be to do with making sure that there is room in there as we go forward.

It is probably important to note that the wording is that it is a ceiling, not necessarily a target. It does not necessarily mean that we will add 40 or 50 nuclear weapons, if we guess roughly where we are today, to the stockpile. It could be to do with the relationship with the United States and making sure that the US Congress agrees to fund a new warhead. Obviously, we have very close co-operation and collaboration with the US and that warhead will be very important to us. We saw last year that the

Secretary of Defence was in Washington and lobbied for this, so there is clearly an aspect of that.

There may be something about showing broader resolve. The Integrated Review, of course, happened before what has transpired in Ukraine but appears now to be possibly slightly more sensible. It is showing a little bit of resolve. It could be linked ever so slightly with concerns about future Russian ballistic missile defence capability, although if that was the case, I think you would probably plan for the next generation of submarines to have more missile tubes (rather than less), you would potentially have more warheads than the new ceiling, and you would have more capability in general, but there could be a link there as well. My guess is that it is probably a practical thing as much as anything else, as much as it is about making a statement about a Britain that remains an important player in the global nuclear order going forward.

Diplomatically, it is a problem for the NPT review conference that will come up in three months or so. That said, given the nuclear threats that Russia has been issuing, with the possible Chinese build-up, it probably will not be one of the main items on the agenda. Of course, the NPT says to work in good faith towards eventual disarmament, which does not necessarily mean incremental linear reductions. So, I think it will be problematic but possibly overshadowed by other things.

One final thing, just while I think about it—no, it has gone. I will come back to it.

Dr Susan Martin: Again, the Government has not made the specific reasons behind these changes public, so it is difficult to evaluate whether those are compelling. The Integrated Review mentions several factors: changes in the arsenals of other nuclear weapon states; the increase in global competition and challenges to the international order; and what it refers to as a 'developing range of technological and doctrinal threats'. There is some suggestion in the review that, either separately or together, these factors could be undermining the UK's assured retaliatory capability. If that is the reason for the changes, it makes sense to me.

It certainly seems possible that intensifying geopolitical competition and existing uncertainty about how emerging technologies may interact with nuclear weapons could impact the criterion for an assured retaliatory capability. As a simple example, with intensifying geopolitical competition it is possible that the UK would need to deter two or more nuclear weapon states at the same time. This suggests that the Moscow criterion for sufficiency may no longer be applicable. However, the Government has not made this case in detail.

Other possible reasons for the changes would be less compelling. For example, there has been some suggestion that the increase in the stockpile ceiling is due to further development of an enhanced substrategic role for nuclear weapons. I do not think that such a role is useful and, in fact, it would be counterproductive, creating a false sense that nuclear escalation can be controlled.

I also note that the changes in the nuclear forces of adversaries do not create an automatic need for the UK to respond in kind. Instead, as I have tried to indicate, the need to respond depends on whether adversarial actions are likely to diminish the UK's retaliatory capability.

Specifically on the decrease in transparency, having the overall stockpile limit public but not the number of operational or deployed warheads makes sense to me. I do not think it is necessarily 100% certain that transparency on operational and deployed numbers encourages adversaries to think that a first strike is possible, but we cannot rule that out, so the decrease in transparency may be stabilising. I think the decrease in transparency also provides a bit more flexibility, given the uncertainties of the current strategic situation.

However, there are costs to the change in policy. We have already mentioned possible criticism at the NPT review conference. It is possible that the increase in the stockpile ceiling will tarnish the UK's reputation and soft power on disarmament. At some point we may see new arms control treaties that would require further transparency, but the prospects of such negotiations in the near term are not very good, so that is not an immediate concern.

The Chair: Thank you. Professor Futter, there was something you thought that you might wish to add. I will give you the opportunity now, if it has come to mind.

Professor Andrew Futter: Yes, it has, thank you. My understanding is that the UK MoD representatives did speak with allies and others about the decision to increase the warhead cap, and my guess is that it would be broadly unproblematic in their eyes. That is my understanding.

Q23 Lord Wood of Anfield: I was very interested in what you both said, particularly you, Dr Martin, about the ceiling of warheads maybe being connected to instilling more ambiguity about possible first use or doctrinal use. I want to ask you a general question about the doctrines that go along with our nuclear posture. Is your sense that strategic ambiguity over use is still the hallmark of our nuclear posture? What is your view of that from the point of view of the efficacy of a deterrent, particularly, as you both said, in light not only of multiple threats emerging but of the emergence of a Russian President who is prepared to talk about nuclear use in a rather casual and frequent way? Does that affect the efficacy and wisdom of our posture and our nuclear deterrent?

Professor Andrew Futter: There is nothing to be lost by having strategic ambiguity, and it probably makes sense. It has been a hallmark of UK policy for a long time and there is nothing particularly to be gained by being much more open, transparent and specific about when UK nuclear weapons would be used. This is part of the whole point of a nuclear strategy, I guess.

A couple of other interesting things come from this. The ambiguity and the lack of transparency can be stabilising, but if we look to the future

and we think about possible ideas of trilateral US-Russian-Chinese arms control, it will be increasingly likely that UK and French, or broadly NATO, nuclear weapons will become part of that, and transparency or not knowing how much is deployed could be slightly problematic.

The UK is in quite a different place than the United States, where there is discussion about sole purpose and various other things, or other countries where you may have no first nuclear use. Our specific strategic environment means that we probably have roughly the right kind of posture for where we are.

Dr Susan Martin: The declared policy as stated in the Integrated Review is that the UK's nuclear deterrent is for use in "extreme conditions of self-defence". I think that is about as accurate a statement as any nuclear weapon state can make about the conditions under which they might use nuclear weapons. Some states have declaratory policies that go beyond this, but those policies are just declaratory policies. Any actor contemplating aggression against a nuclear weapon state should be aware that there is always a potential for nuclear weapons to be used. Far from leading to misperceptions and misunderstandings, I think the current UK statement correctly captures the potential for nuclear use.

I want to be clear here that I am not arguing for a lowering of the threshold for nuclear use. Rather, I am stating that the reality is that no matter what it has declared, if a nuclear weapon state suffers an attack that threatens its vital or existential interests, the possibility exists that nuclear weapons will be used in retaliation. I think the UK declaratory policy captures that reality.

Lord Wood of Anfield: I know that this is a rather long-standing and perhaps slightly tired debate—some people might think, not me—about no first use as an additional doctrine, but is the implication of what you are both saying that to go to a no-first-use doctrine would be pointless, would not add anything, or that it would be destabilising to go from where we are to a no-first-use position?

Professor Andrew Futter: To the best of my knowledge—I think this comes into some other issues that you want to look at today—the idea is that the UK could be vulnerable to a conventional attack or an attack that is not with nuclear weapons, and that reserving that right to use nuclear weapons first in any conflict gives us an extra layer of security. This can be traced back to the original ideas behind building the force in the first place: the idea about Britain standing alone in 1940, and making sure that that a nuclear capability was there should Britain ever be under threat from a conventional or even cyber or computer network operation attack. I am not necessarily saying that would be an appropriate response, but it just increases the ambiguity and the flexibility around how the deterrent can be used.

Dr Susan Martin: I do not think it¹ is necessarily destabilising, but there is a risk that it could be destabilising, because you are potentially saying

that you would not consider nuclear use in a situation where you very well might consider it. If a non-nuclear attack was significant enough, it is possible that the UK would want or would decide that its only option was a nuclear retaliatory strike, and that possibility should be clear to our adversaries.

Q24 Lord Anderson of Swansea: Good morning. I have a question on our deterrence policy generally. Can the number and strength of our capability credibly deter a potential aggressor across the board, across the full spectrum of potential hostility? What are the implications for our nuclear policy of the reduction in the strength of our Armed Forces, particularly, of course, the fact that we now have about 78,000 in our Army? What is the implication in going down the ladder of escalation when confronted with the reality of the Russian nuclear doctrine, which I understand is a fairly seamless transition from battlefield nuclear weapons to full strategic?

Professor Andrew Futter: In my mind, UK nuclear weapons have a very specific function, and that is to deter existential strategic attacks against the UK. They undergird all the other capabilities, but I think they are separate. They are there for a very specific purpose which is deterring a very specific type of threat to the United Kingdom. They are not a substitute for conventional forces. There are a lot of different ways in which conventional forces of all types might be used; they might be used in regional deterrence or as a regional response in various ways, particularly through NATO. I think the two things are very separate.

I am not an expert on the UK conventional force posture, but I am aware that this capability has shrunk over the years, but I think the two things are quite separate. Think of them as two different things: nuclear weapons as having a political purpose, and conventional forces having specific military purposes, including deterrence.

Dr Susan Martin: I generally agree with that. Nuclear deterrence is not a one-size-fits-all approach to protecting state interests. Nuclear weapons work to deter a nuclear attack and to deter a major non-nuclear attack. This means that other military capabilities are needed. What those other capabilities are depends on how expansively a state defines its interests in the world, the degree to which those interests are likely to bring it into military conflict with other states, and the size and quality of the military forces of potential adversaries. Like Professor Futter, I am not in a position at this time to do an overall evaluation of the UK military position, however.

Professor Andrew Futter: The UK made a decision a generation ago to get out of the tactical nuclear weapons business. It does not mean that some of those warheads on the submarines could not be used for a tactical mission, but we got rid of free-fall bombs and, before that, other types of battlefield nuclear systems. Part of the reason for that is that there is a US drive within NATO to move towards advanced conventional

¹ A no-first use doctrine

capabilities for deterrence. There is a question about whether the UK should be investing in more advanced conventional capabilities, rather than tanks and the things that are in between—increasingly capable defences against missiles and planes, precision-strike capabilities, and a whole gamut of technologies that fall between traditional conventional forces and nuclear weapons. That seems to me to be the way NATO is going, which is exactly why Russia is following the path it is: because it is concerned about NATO conventional capability and both quantitative and qualitative superiority.

Lord Anderson of Swansea: Your judgment is that the justification goes beyond the political one of a seat at a table in possibly responding to an existential threat. How would you say that the current deterrent is independent in any meaningful sense?

Professor Andrew Futter: It is independent in use. The UK decides if and when that deterrent is used. The UK decides how it is deployed. The UK decides all the operational stuff around it.

My understanding is that we lease Trident missiles from the United States. We do not build them; we lease them from a common pool. We build our own warheads, but they are very closely linked with US designs. A lot of sharing goes across there. As far as I am aware, they are built in the UK, but you can see clearly from the interest in the next generation of US warheads how important it is to the UK. Of course, the submarines are built here but with a certain amount of technology sharing with the US.

The UK nuclear force is independent in operation—the Government have always claimed that and made that clear—but it is based on partnerships with other states as well. We benefit enormously from those partnerships. It would be not only a technologically difficult thing but an enormous financial burden to do those things ourselves.

Dr Susan Martin: I agree and I have nothing to add.

Q25 **Baroness Blackstone:** What do you think about the effect of the increase in our nuclear warheads on the non-proliferation treaty negotiations, which are meant to take place quite soon? On the face of it, one has to ask whether this does not somewhat undermine our position in asking other people to go down the route of nuclear disarmament when we are actually going in completely the other direction.

Dr Susan Martin: As I said earlier, I think there will be criticism of the UK position at the review conference in August. Some will see these changes as a violation of the UK's commitments under Article 6. I think the changes will also tarnish the UK's reputation on arms control and disarmament and may slightly decrease its soft power on these issues. However, the UK is not alone among the nuclear weapon states in making changes to nuclear policies at this time. I also think that criticism of the UK in August may take a back seat to criticism of Russia's nuclear threats in Ukraine, so there may be some cover there.

More broadly, though, there is a danger that the actions of the nuclear weapon states collectively may contribute to disillusionment with the NPT. It may increase support for the Treaty on the Prohibition of Nuclear Weapons, but that is where we are in the world with the geopolitical conditions that we are in.

It is also important to remember that non-nuclear weapon states benefit from the NPT in a number of ways, including by the reassurance that it provides about the nuclear intentions of other non-nuclear weapon states. The security of non-nuclear weapon states is improved not only through the security assurances and disarmament or movement towards disarmament by the nuclear weapon states but by the commitment of other non-nuclear weapon states to remain non-nuclear. At this time, the TPNW does not substitute for this, as verification under the TPNW is not yet developed. So I think non-nuclear weapon states will still have a reason to stay with the NPT.

Professor Andrew Futter: I agree with that. It is also fair to say that expectations were not particularly high for this NPT RevCon and that was before things had happened in Ukraine.

Yes, I think this does undermine the UK's position. It will be used against the UK as evidence of acting in "bad faith", but it is important to put in context that the UK will still be the P5 member with the lowest nuclear stockpile, even if it does get up to 260, which again is a ceiling, not a target. Others, notably China, are increasing, or there is a belief that they are increasing their nuclear stockpiles.

There is an interesting thing for the United Kingdom in that, if it wants to retain a submarine-based nuclear deterrent with four submarines, it is questionable how many more warheads it could reduce to and at the same time ensure that force was safe and sustainable, especially as it transitions. So, I agree completely with Dr Martin that the decision may be used against us politically, but I do not think it will be one of the main points. There will be many other important things. Equally, the UK is pretty close to minimum deterrence anyway, if you judge it by warheads.

Baroness Blackstone: I am interested in what you say about other countries that already have nuclear warheads. Could you elaborate a bit on which of these countries are increasing their numbers, as you are suggesting they are? Has there been any comment by any of our allies on what we have done with this very large increase, from the point of view of its impact on any future negotiations, however low expectations might have been? There is probably a question mark about whether you should make the expectations lower still. Could you tell us a bit more about the wider international scenery as far as this is concerned?

Professor Andrew Futter: The most obvious case to point to is China. There was a revelation in the news some months back that China was potentially building big new ICBM missile fields, and the belief is that the warheads will be built to do match this. China's stockpile is probably about 300 or 400 nuclear weapons, as best as we can guess, but there is

a fear that that could be quite rapidly expanded, so it would come close to US and Russian stockpiles. US and Russian stockpiles are around 5,000, but, of those, a much smaller number are physically deployed. Under New START both US and Russia are limited to 1,550 strategic nuclear weapons, so many are held in reserve or awaiting dismantlement.

The other states that are important in this are those that are not part of the NPT. There are clear proliferation incentives and concerns in India, China, Pakistan, and North Korea.² We do not know so much about Israel. It feels as if we are in a global environment where nuclear weapons are becoming more important for some of these countries, not just in numbers but in the role they play. You can see that with Russia. In the past three or four years there has been an unveiling of many different exotic nuclear delivery systems, whether it is the Status-6 underwater torpedo, the nuclear-powered cruise missile, all these sorts of things. We can see, both in the numbers and in the role of nuclear weapons, that they are returning to a place that we thought they had disappeared from 30 years ago.

Dr Susan Martin: We are still waiting for the first nuclear policy review from the US under Biden. That thinking may have changed since the Ukraine war has broken out, and we have seen the nuclear threats there. We do not know what the approach of Biden and the US will be towards a lot of these issues in the current environment, but generally, again, I agree with what Professor Futter said.

Q26 **Baroness Rawlings:** Good morning, and thank you very much for coming today. I will slightly change the subject a bit towards costs and the economy of what we are talking about. What is your assessment of the UK's ability to maintain its nuclear arsenal, especially in the present climate when the economy is becoming more and more challenging, with inflation and prices rising? As a result, how much will we need to rely on the US and the French burden sharing versus paying for our own capability? Could costs be meaningfully reduced, or is the current posture the minimum necessity?

Dr Susan Martin: As Professor Futter has already said, the current UK burden-sharing programme makes sense. It gives the UK an operational independent nuclear deterrent but shares those costs with the US and France. In that sense, it is a middle way between having to rely on other states for nuclear deterrence completely and having to pay for nuclear deterrence all by itself.

There are risks to burden sharing, and it is important that the UK maintains its infrastructure and overall capabilities. It is always possible that domestic changes in UK partners or international developments could upend existing arrangements, so if the UK is committed to having a nuclear deterrent it needs to continue to invest in infrastructure.

² China is a member of the NPT. India, Pakistan and North Korea are not.

However, publicly available information does not allow a full assessment of the UK's ability to maintain its nuclear arsenal. We know that there have been delays and overspending on key infrastructure projects. We know that there have been safety issues at AWE. We know that AWE has been 'decontractualised' or 'renationalised' in an attempt to address these issues, but we do not yet know whether this is having the desired effects. To assess this, more information is needed, and there is a clear role for more active oversight by Parliament here, because the information will not be publicly available.

Professor Andrew Futter: I agree with all that. I will also say that if the UK wants this capability, it has to be prepared to pay for it properly. It is as simple as that. In my mind, this is not a question of budget. If you do nuclear weapons, you pay the money it costs to keep them safe and do it properly. That might be very naive, because I do not have to make those decisions, but the seriousness of things going wrong and the importance placed on this means that this should not be a financial decision. It should be a case of whether you need it or not.

There are a number of question marks around this. Even if the decision was taken today to cancel that programme, it would not mean that that money would be reallocated straightaway. My guess is that we would probably pay a similar amount of money to do all the decommissioning and to do all the other stuff to get rid of it. It is completely legitimate to ask, "Is this the right way to spend the money?" but if we are going to get rid of that capability, it has to be based on a security decision rather than an economic one, purely because if you are going to do this, do not try to do it on the cheap.

Baroness Rawlings: You mentioned earlier the importance of not only nuclear but conventional and cyber. Cyber seems to be reappearing more and more. I wondered, not being technology minded, how much could the cyber interfere with the nuclear? Should we be concentrating more on cyber? I read in the papers just last week of the major Russian cyberattack on Bulgaria, putting out all its programs for pensions, its postal services, a whole lot of other things. Where would this come into the equation?

Professor Andrew Futter: What we term as cyber, which is a whole range of different dynamics of different seriousness that might be carried out by different actors, could have a range of implications across the spectrum, not just in the strategic or nuclear space but, as you say, below the threshold of war in interference, nuisance and generally clouding the information space.

There is a case for saying that there could be a direct threat to the deterrent by an adversary with very sophisticated computer network capabilities. This does not necessarily have to be a "WarGames" scenario—I do not know if you have seen the film; it is about a teenager hacking in and starting World War III. It could simply be finding a way of interfering with systems on a submarine, nothing to do with the missile or the warhead but just meaning that it has to come back to port and,

therefore, interrupting CASD and all the things that go around that. There are a number of different potential possibilities for CNO exploitation or attack. I am not saying that it would be easy, I am not saying that it is likely, but it is possible. Those submarines are, of course, very secure when they are underwater somewhere in the North Atlantic, but somebody writes the code for them, somebody has to do the patching on the software.

I suppose the flipside of those cyber, computer network or digital capabilities is that they are something that the UK can do to others too, and potentially something that could fill the gap between the nuclear capability and conventional forces. I know that the UK is doing this, it is investing in it as part of this broader toolkit for how it manages threats or how it might deter or deal with others. There are a lot of different things that come underneath that.

Dr Susan Martin: I agree with all that. I will add that we will not see a future in which cyber capabilities in any way substitute for nuclear capabilities. Nuclear deterrence works, because the damage that would be done by an all-out nuclear war is absolutely clear and absolutely devastating. We have not seen any other weapon that gives us the same clear certainty of destruction that empowers nuclear deterrence.

Baroness Rawlings: I was not thinking of them being a substitute.

Q27 **Lord Alton of Liverpool:** Thank you to our witnesses this morning. Can I move you on slightly from the nuclear to the chemical, radiological and biological threats that we face? I suppose these are not exactly theoretical; over the weekend, we have seen reports about the use of phosphorus bombs being dropped on the final group of people trying to fight for Mariupol in Ukraine, but we have also seen the use of sarin in our own country, in Salisbury, in the attacks here and on Putin's opponents in Russia.

The Integrated Review states that there is an "increased likelihood of a CBRN—chemical, biological, radiological and nuclear—attack by the end of 2030" and that there is "a realistic possibility that state sponsorship of terrorism and the use of proxies will increase". That would include a CBRN dimension. How severe do you think that access to this threat is? How prepared is the United Kingdom to respond? Are the appropriate responses military or non-military, or a combination of both?

Dr Susan Martin: That is a huge question. Very technically, white phosphorus is not a chemical weapon.

Lord Alton of Liverpool: It is not covered by the convention. I was going to ask you that as a supplementary, so perhaps you could unpack that for us.

Dr Susan Martin: The easiest way to think about it is that chemical weapons are agents that act through poison or toxic effects. White phosphorus is a smoke agent that can cause burns and fires if used to do

so. In the same way that napalm is not considered a chemical weapon, white phosphorus is not³.

On the likelihood of a CBRN terrorist attack, it is useful to think about this both as the motivation necessary to carry out such an attack and as the capability to do so. It is possible to argue that motivation may have increased due to recent examples of chemical weapons use in Syria, in assassination attempts and so on. It is also possible to argue that non-state actor capability to carry out such attacks may increase due to trends in technology. However, overall, I do not think that the threat of CBRN terrorism has changed significantly, simply because non-state actors can still get more 'bang for their buck', if you will, through non-CBRN attacks.

It also remains the case that it is not in the interest of states to sponsor CBRN terrorism. This is the case for two reasons. First, any attack by a non-state actor could be traced back to the state sponsor, and the state sponsor would then be held liable for the attack. Secondly, states do not like to lose control of their CBRN capabilities. Putting these capabilities into the hands of non-state actors would be a loss of control, and there is always a possibility that those actors could turn the weapons against the state that gave the weapons to them.

On the required response, detection and attribution capabilities remain key to the deterrence and response to possible CBRN attacks. The ability to counter misinformation in this area is also vitally important, as we have seen most recently in Ukraine. The UK has played an important role in supporting and enabling work on the investigation and attribution of chemical attacks and in countering misinformation, and it is important that the UK maintains and develops these capabilities.

If I can add one side note on a possible biological attack, in addition to detection and attribution, the other key for preparing for a biological attack as well as the other types of attacks is a strong public health service that can help to identify and treat unusual disease outbreaks. With the Covid pandemic, governments have gained experience in this area. We have all seen the importance of public health and strong healthcare systems. As part of the response to the possible use of biological weapons, it is important that we learn lessons from Covid and maintain and strengthen capabilities in public health and in the NHS.

Lord Alton of Liverpool: Can I press you further for a moment on white phosphorus? I have asked before—in fact, I raised this with the authorities in The Hague—why it is not covered by the Chemical Weapons Convention. Given that we have seen it used against civilian populations

³ Note from Dr Martin: White phosphorous is usually used to mark or illuminate a target or to mask troop movements with smoke. It is not considered a chemical weapon under the Chemical Weapons Convention, nor is it considered an incendiary weapon under the Protocol on Prohibitions or Restrictions on the Use of Incendiary Weapons (Protocol III) of the Convention on Certain Conventional Weapons (CCW). Napalm as an incendiary agent is covered under Protocol III of the CCW.

in Nagorno-Karabakh and in north-east Syria by Turkey, a NATO country—I visited refugee camps there in 2019 and heard first-hand accounts of how it burnt people alive—should it not be covered by the convention?

Perhaps while you are responding to that, there were reports over the weekend about what happened to our own and American service men and women in the Gulf War in 1991 after the bombing of the caches of chemical weapons held by Iraq and the escape of chemicals during that period, which has led to long-term fatigue, memory loss, chronic pain and Gulf War syndrome. What study have you made of that and should we be doing something more about that?

Dr Susan Martin: Use of white phosphorus against civilians is considered a war crime, but that does not mean that it should fall under the Chemical Weapons Convention⁴. The Chemical Weapons Convention has a very strict definition that was carefully negotiated. This issue was looked at in the negotiations. Smoke weapons, which are used for lots of legitimate purposes but can be misused if they are dropped directly on armed forces or civilians, are problematic, but that does not make them a chemical weapon.

On Gulf War syndrome, I just had in my inbox a new study on some of the things that veterans are suffering from as a result of the Gulf War. There is a definite problem there. I am not an expert on it.

At this point, the Chemical Weapons Convention is still strong and most states do not hold chemical weapons. If the UK goes into conflicts with states that may have chemical weapons, it will be important for the UK to think not only about how to destroy whatever chemical weapons exist there but about how to protect servicemen and civilians in the area from any release of agents when that destruction takes place.

Lord Alton of Liverpool: Were we wrong not to recognise the red line when it appeared in Syria?

Dr Susan Martin: What do you mean by recognise the red line? Should we have intervened militarily because of chemical weapons use?

Lord Alton of Liverpool: We said that there was a red line that should not be crossed, yet it was crossed and we did nothing about it.

Dr Susan Martin: I do not think that it is fair to say that there was no response to the chemical weapons use in Syria. There was a very strong international diplomatic response. There was a very strong response in terms of economic sanctions. There was huge co-ordination between the UK and countries in Europe. There are continuing efforts to bring people who were involved in the use of chemical weapons in Syria to prosecution for war crimes. I think there has been a very strong response. It was not

⁴ Note from Dr Martin: More precisely, the deliberate use of white phosphorus (as well as any other weapon) against civilians is a violation of the Law of Armed Conflict and has been codified in various treaties and conventions.

necessarily sufficient to end the use of chemical weapons in Syria, but it may very well have acted to contain that use⁵.

The Chair: Thank you very much. In answering Lord Alton's question, you remind us of the importance of the Integrated Review going beyond the MoD and the FCDO to health, not only in response to the use of the biological and chemical weapons but because of the way one is then able to assist those who are fighting on behalf of their country.

Q28 **Lord Campbell of Pittenweem:** Can I go back to the question of no first use? I have always thought that that was a rather empty undertaking, because it is an undertaking that you could abandon at half an hour's notice. I do not know whether you recall that two or three months ago President Biden appeared to flirt with the notion of no first use, which immediately brought a retaliatory response, not upon him but on the United States for not adopting it.

I want to ask you about the P5, the permanent five members, which made a statement, just after Christmas I think, in which they said that a nuclear war could never be won and, therefore, a nuclear war should never be started. What do you think their purpose was in doing that? If the purpose was to try to get ahead of criticism at the NPT, is that likely to be any kind of defence for them?

Professor Andrew Futter: Of course, you are absolutely right that you can say something and then change your mind at the last minute with an NFU, and I think that is recognised, although in some cases it could have symbolic significance. If the UK did it, if the US did it, I do not think it would necessarily change the policy or doctrine of other nuclear-armed states, but it would perhaps signal how those states thought about nuclear weapons or be a reflection of where they see nuclear weapons in the broader security make-up. The US no-first-use thing is interesting, because, as you know, there are lots of different dynamics—extended deterrence and alliance viewpoints, and the fact that this would probably mean getting rid of ICBMs, which become a bit more problematic if you have a no-first-use agreement, because they are relatively vulnerable to a disarming first strike.

As to the announcement several months ago that a nuclear war must never be fought and can never be won, which of course is building on the Gorbachev-Reagan stuff in the 1980s, unfortunately we were in a slightly different world today than when this statement was made. Saying that was probably meant to be a way of preparing for NPT negotiations. I hope and think that it was sincerely held by the people who said it,

⁵ Note from Dr Martin: The international response to its use of chemical weapons led Syria to join the Chemical Weapons Convention in 2013. This entailed the destruction of Syria's declared stockpile of chemical weapons, which was completed in 2016. While Syria continued to make some use of chemical weapons and while there are still outstanding questions about Syria's declaration of its chemical weapons programme to the Organization for the Prohibition of Chemical Weapons, the destruction of its declared stockpile represents a significant decrease in Syria's capability to use chemical weapons.

although what has transpired since, particularly from Russia, casts that into doubt.

One of the things that has been important, but not as conspicuous is the lack of any nuclear threats from the UK, NATO or the US in response to Russia nuclear rhetoric and threats. Saying this sort of stuff is symbolic as well. It is important. It is probably designed to pacify those who are increasingly concerned about lack of progress within the NPT forum. It is also probably there to ameliorate the concerns of TPNW supporters, which is increasingly becoming a part of the global nuclear order. It is no longer just centred on the NPT; it is now increasingly being challenged from other angles as well. Unfortunately, it has been superseded by events in the last few months.

Dr Susan Martin: In some sense, the UK and the other nuclear weapon states are in a tricky position, because they still see nuclear weapons as necessary to guarantee their security, but they want to convince other states that those other states do not need nuclear weapons. That can put you between a rock and a hard place. Declaratory statements about no first use like the one the P5 made are trying to address the security concerns of non-nuclear weapon states, but they can only go so far while the nuclear weapon states continue to believe and act upon their belief that nuclear weapons are necessary for their security.

To some extent, the P5 statement may have been overtaken in that we have seen nuclear threats. On the other hand, I do not think that nuclear war can be won. The more often we say that, the better. It is important to express that to the other nuclear weapon states and to mutually acknowledge that. It is also important to let non-nuclear weapon states know that you do not think that these are useable weapons that will give you victory or guarantee your every interest, but instead that you recognize that nuclear war is horrible and can never be won and should never be fought.

Lord Campbell of Pittenweem: What about the ambition of other countries? It is alleged that the difficulty in creating an agreement on Iran is based to some extent on the ambition of some that they should acquire a nuclear capability. There is also scuttlebutt, or gossip, about the extent to which A. Q. Khan may have given, expressed or in some way communicated what was necessary for the creation of nuclear weapons to a number of countries that have so far not chosen to do so but certainly, it is alleged in some cases, have the plans in the safe and could take them out at any time. What do you think about the whole question of proliferation then, given what we have been talking about?

Professor Andrew Futter: One of the significant things about proliferation in some ways is the proliferation that has not happened. You can put this down to the success of the NPT, but there are a lot of other factors—political, domestic, alliances, and all sorts of other things. If we go back to the 1960s, JFK warned of 25 to 30 nuclear-armed states in the next decade, and there was a real proliferation concern. I am not saying that there is not a proliferation concern. I am just saying that it is

interesting that we have not seen the proliferation that perhaps some had expected.

Susan will probably speak better to A. Q. Khan. But yes, he played a significant role in a number of countries' nuclear programmes: Iraq, Iran, probably Syria, North Korea, Libya and possibly others. That was wrapped up in 2004, I think, but we do not know the extent of that, as far as I am aware.

On future proliferation, some states could in theory move to this position. Japan is a good example, potentially. It is important to separate the technological aspects from the political aspects as well though. "Going nuclear" would be an enormous jump by certain states. Iran is a bit more difficult to call. From my own perspective, we just do not quite know. It seemed to be pursuing a hedging strategy to see where it can get to, how far it can get and wait and see. I reiterate that point that although we should not downplay the possibility of future nuclear proliferation, we have not actually seen as much as we think.

What we may begin to see is states opting for different types of capability. Notwithstanding what Susan said earlier about nothing really replacing the destructive capability of a nuclear weapon, you may find that a range of different non-nuclear capabilities can perform certain deterrence roles, assurance roles or other functions, so states may increasingly turn towards those capabilities to meet their security needs.

Dr Susan Martin: Proliferation decisions by states are incredibly complicated. Success in a nuclear weapons programme is not easy to achieve. One reason why we have not seen more proliferation is that some states, even with the help of A. Q. Khan, were not able to get anywhere; Libya is an example. It managed to acquire lots of material, but it did not have the knowledge or the skills to do anything with it.

Future proliferation for most cases, if we do see it, will continue to be slow and gradual, and there will be opportunities to engage with potential proliferators and try to dissuade them or address their security concerns in other ways. Other states may have it all locked away. Japan is often said to be six months or a year away from nuclear weapons. It is not clear how accurate that particular assessment is, but Japan is a state that could go nuclear very quickly if it chose to do so. However, the decision to do so would be a huge departure and something significant that we would likely all see coming.

Q29 **Baroness Sugg:** Could you give us a bit more detail on the relationship with the US on nuclear? There has been a bit of confusion about the status of the replacement of the warhead. The Integrated Review tried to set out that operational independence, but obviously there remains very close co-operation. You said earlier that Biden has not set out his full position on nuclear, and Lord Campbell raised the issue of no first use. Are there any indications of what that might be and how that might differ from President Trump?

Professor Andrew Futter: On the warhead stuff, as far as I am aware the UK builds its own warheads and looks after its own stockpile, but my guess is that it is linked very closely with designs for US warheads. The warhead we currently use is old and will need replacing. The US has done life extension programmes on the warheads that are used on its own Trident missiles. I do not know whether we have done that on ours; I am not sure.

The UK will need to build a new warhead at somepoint in the near future. It would like it if the US did it at the same time so that we could benefit from cooperation and technology sharing and so on. The US Congress, particularly when it looked at President Trump's budget and increasingly looking forward, does not see the immediate necessity for the US navy to build a W93, so there is that debate. If it does not happen, that puts the UK in a difficult position. There would probably be an answer to that, but I do not know what it is. My guess, particularly with what has happened in Ukraine, is that you may find that some of the plans that looked like they may not have happened, are now expedited.

The broader stuff, again to the best of my knowledge, is that we build our own submarines. We probably share a lot of expertise with the US, and now possibly with Australia under the AUKUS agreement, but these are our submarines. Of course, the missiles, which are probably a slightly different thing, are US missiles. They are Lockheed missiles and we draw from a common pool. As far as I am aware, all the coding is done in the US. I do not know whether we are able to check the coding in the missiles. I do not know how that all works—it is quite rightly secret

Dr Susan Martin: I tried to look into the status of the US's current position on the warhead. I think I saw that there was more favourable congressional action than there had been a couple of years ago, but I could not get confirmation of that, so I am not 100% sure.

Q30 **Lord Anderson of Swansea:** Yesterday in article in the *Financial Times*, the deputy director of RUSI effectively said that Russia would use a nuclear weapon if it thought that it was challenged existentially. More interestingly, as definition he argued that, for Russia, Crimea would be part of that existential threat. Would you like to comment on that?

Professor Andrew Futter: We just do not know what is in President Putin's mind and what he would and would not do. Some of Putin's actions are about posturing and trying to show resolve. Part of it is about trying to demonstrate Russian might to the people at the moment with what has gone on in Ukraine. I suppose it is a reality that if you push any state far enough to certain points you run the risk of a nuclear attack. That is where deterrence is. That is where we go back to the strategic ambiguity stuff that we talked about earlier. We just do not know, and that is deliberate, because they hope that you do not push too far because you do not know, and taking risks with that is obviously dangerous.

Baroness Rawlings: Should Ukraine not have given up its nuclear

weapons?

Dr Susan Martin: Ukraine did not really have nuclear weapons. There were Russian nuclear weapons stationed on Ukrainian territory. Ukraine could have tried to seize them, but it would not have been able to control them. In some sense, that is a non-starter, but it raises the question for other non-nuclear weapon states about whether a nuclear deterrent is useful and might be nice to have if you are facing Russia at this time.

Q31 **The Chair:** My question refers back to earlier answers about the independence of the way in which the UK can use its nuclear capability. Professor Futter, you referred to the development of new delivery systems of weaponry. When this committee published its report back in 2019, hypersonic weapons were very much an idea and the fear was that they might be developed. We are now told that they are not only developed but in use. Does that concern you from the point of view of response times in reacting to delivery of such weapons and that the UK might have sufficient capability to respond in the appropriate way? Are we still in the position where terrible mistakes could happen, despite all the best intentions?

Professor Andrew Futter: Taking hypersonic weapons first, there are a few things that are worth pointing out. What is interesting about so-called hypersonic boost glide and hypersonic cruise missiles is not their speed, because they are not quicker than ballistic missiles—indeed, some ballistic missiles may be quicker—but what they can do. They are more manoeuvrable than some ballistic missiles and they can fly at slightly different trajectories. The newness or the difference posed by them was overinflated. Somebody even wrote about the “hype” of hypersonic missiles, and there is something to that, particularly in what it means for the UK existential deterrence. I do not think it really means anything for UK nuclear deterrence.

The new delivery systems that you mentioned Russia is building are just different ways in which Russia could do the same thing. In my view, it does not change anything. Where hypersonic capability has become really interesting—“interesting” is probably the wrong word; I should say destabilising—is in battlefield or regional scenarios where the ability to hit targets of tactical and possibly even strategic significance very quickly is different from previous cruise missiles. That could have escalatory effects, but we will probably see that the so-called hypersonic or manoeuvrable warheads will have a much more significant impact on battlefield, regional and tactical applications and conventional warfare than directly on nuclear weapons, particularly for the UK.

The Chair: Thank you to both of our witnesses this morning for our session, which has contributed greatly to our understanding of the breadth of the issues that are involved in defence and security but that usually attract the most public attention, not just because of the cost but because of deeply held beliefs. Those beliefs can certainly divide people. As you can hear from the committee, we are not divided on this; we are united in trying to get the best information we can. Thank you very

much.