

## Written evidence submitted by the Henry Jackson Society

### Introduction

1. The evidence below forms the basis for an ongoing research paper conducted by the Henry Jackson Society, examining the recent developments of the British Army's Ajax vehicle platform. The nature of this paper examines the history of the bidding and procurement process from 2010, and how the Ministry of Defence (MOD) viewed a tracked reconnaissance vehicle as integral to its new Strike brigade concept. This concept evolved over time, ultimately resulting in the US-style Brigade Combat Teams (BCT) which the recent Defence Command Paper sought to restructure the British Army around by the end of this decade. Ajax is integral to this, forming the Deep Reece Strike BCT and supporting the Heavy BCT.<sup>1</sup>
2. However, Ajax is currently four years late, due to have begun service by 2017. So far, only 14 Ares variants have been delivered for trials, and all without turrets.<sup>2</sup> This will have a significant knock-on effect for the British Army's deployability over the coming two to five years, as existing platforms including Warrior begin to be phased out, whilst Ajax and Boxer are yet to enter to service. For an expeditionary army which maintains multiple global commitments, this is a worrying situation for the MOD to find itself in.
3. Furthermore, recent delays to the trials phase of the Ajax are going to add increased time pressures and thus increased costs. The MOD has already spent £3.2bn out of a £5.5bn budget,<sup>3</sup> with only 14 un-turreted variants to show for it. At this rate, four years delayed, the final costs are either likely to far exceed the original £5.5bn budget, or get to point where continuing the programme severely lacks any fiscal sense.
4. The MOD must use this latest pause now in the suspended trials phase to take stock of the situation. After the trials were halted in November 2020, 21 soldiers were recorded as having to receive hearing treatment, with a further 83 receiving in-depth hearing tests. Furthermore, after trials resumed in May 2021, two more soldiers reported hearing loss, with an additional soldier being assessed. There were a further five soldiers who reported to their local medical centres for vibration-related

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<sup>1</sup> Defence in a Competitive Age. *UK Government*. Available at: <https://www.gov.uk/government/publications/defence-in-a-competitive-age> accessed 12 July 2021.

<sup>2</sup> *New £3.2bn Ajax tanks withdrawn again after troops suffer hearing loss*. Brown, L., *The Times*. Available at: <https://www.thetimes.co.uk/article/new-3-2bn-ajax-tanks-grounded-again-after-troops-suffer-hearing-loss-xg0q5g30lly> accessed 12 July 2021.

<sup>3</sup> *British Army's Upcoming Armored Vehicle Is Harming Its Crew*. *Interesting Engineering*. Available at: <https://interestingengineering.com/british-armys-upcoming-armored-vehicle-is-harming-its-crew> accessed 12 July 2021.

symptoms.<sup>4</sup> This means that at least 112 soldiers have been adversely medically affected whilst conducting very limited trials; once resumed in May personnel were limited to only 90 minutes inside the vehicle to mitigate the continued risks.<sup>5</sup>

5. As of 16 June 2021, all Ajax trials across the four defence estates were suspended pending a ministerial review into the ongoing problems, led by Jeremy Quin MP, Minister for Defence Procurement. This review will report back to Parliament in September 2021 with its findings. As part of those findings, it is incumbent on the government to review not only the deeply concerning ongoing problems associated with the Ajax, but also to explore viable and cost-effective alternatives, which are still able to fulfil the role originally intended for a long-range deep recce platform for the British Army.
6. The Henry Jackson Society Ajax research paper, to be released in August 2021, will consider the strategic and operational considerations which Ajax brings to the British Army, and its doctrinal relevance in the wake of the recent defence white paper. In addition, it will list a series of alternative platforms for ministerial consideration. These are listed below.

### Alternative Platforms

7. There are three viable alternatives available to the MOD for consideration if the ongoing and increasing delays to the successful rollout of Ajax is ultimately deemed too costly. This is even if the ongoing problems to the turret, noise, vibration and speed can be effectively rectified within a timely manner.

### The Combat Vehicle 90

8. The Combat Vehicle 90 (CV90) was proposed by BAE as a competitor for the Ajax programme, but lost to General Dynamics in 2010. Designed in the early 1990s, the CV90 is currently used by several NATO members, including the Norwegian armed forces who use the recce variant. A benefit of this is that the CV90 receives multinational funding for research and development. Since 2001 BAE has sold over US\$2.2bn worth of CV90s.

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<sup>4</sup> Parallel Parliament. Lord Vernon Coaker. Available at: <https://parallelparliament.co.uk/lord/vernon-coaker> accessed 12 July 2021.

<sup>5</sup> *New £3.2bn Ajax tanks withdrawn again after troops suffer hearing loss*. Brown, L., *The Times*. Available at: <https://www.thetimes.co.uk/article/new-3-2bn-ajax-tanks-grounded-again-after-troops-suffer-hearing-loss-xg0q5g30l> accessed 12 July 2021.

9. The unit cost can be expected to be between US\$4 and US\$6m, meaning that a fleet of 245 Ajax replacements would cost approximately US\$968 million, or £700m. This is a considerable saving compared to the current £5.5bn budget for Ajax.
10. If kept in the UK, the manufacturing process would take much longer; however, the industrial capacity for the production of the CV90 does exist externally should the MOD be willing to subcontract the vehicles to be manufactured abroad.
11. Throughout its history, the CV90 has been used on operations in Afghanistan and on exercise in Scandinavia, showing its versatility in different terrains and climates. Notably, the CV90 can match the firepower of the CT40mm and with a 40mm cannon that uses a munition programmer. The elevation on the cannon also allows it to be used as an anti-air gun and or engage elevated urban targets.
12. Crucially, the CV90 is fully digitised and has an open digital architecture for future development and applications. The vehicle's ISTAR capabilities also match that of Ajax as well as having an LSAS like 360 view called 360 Battleview.<sup>6</sup> The CV90 weighs up to 37 tonnes, making it lighter and more easily deployable when compared to Ajax that requires dismantling to be flown.

### **The Warrior Capability Sustainment Programme**

13. The recently cancelled Warrior Capability Sustainment Project (WCSP), which began in 2009, also has the potential to replace Ajax. The WCSP had an initial budget of £1.27bn, yet this sum was then run over by an additional £227m. Despite the WCSP's reputation being tainted with overspending and delays the majority of issues stemmed from the MOD, and not Lockheed Martin UK.<sup>7</sup> These included the unavailability of GFX and changes made to the turret specification as late as 2016.
14. The MOD currently holds 759 Warrior vehicles; therefore, upgrading existing stock should in theory, be cheaper than buying an entirely new platform. However, due to the age of the existing stock, parts such as the vehicle hulls may need refabricating.
15. The upgraded Warrior uses the same stabilised cannon as the Ajax, therefore, sharing the ability to fire on the move, conduct smart fires and carry more

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<sup>6</sup> BAE Systems. CV90. Available at: [CV90 | BAE Systems | International](#) accessed 12 July 2021.

<sup>7</sup> Written Evidence submitted by Lockheed Martin UK. Available at: <https://committees.parliament.uk/writtenevidence/12158/pdf/> LMUK Written Evidence Para 11 accessed 12 July 2021.

ammunition. However, this cannon has drawn criticism for being more expensive than other alternatives. Amongst the upgrades was digitisation, a modular armour system and increased situational awareness aids. The new electrical capabilities have meant that the upgraded Warrior does require three times more electrical power than previously.<sup>8</sup> However, by converting the IFV to a recce vehicle, there is room within the vehicle where dismounts would have once sat.

16. The Warrior also benefits from being lighter than the Ajax by over fifteen tonnes. This allows for the quicker transportation of the vehicles without having to dismantle them. This would be beneficial as the British Army looks to become more expeditionary, and particularly within the new Deep Recce Strike BCT which require much more rapid manoeuvrability. Warrior's support variants also exist within the MoD, some of which suitably fill the role of the Ajax platform's Apollo and Argos vehicles.

### **The Boxer Combat Reconnaissance Vehicle**

17. Rheinmetall's Boxer Combat Reconnaissance Vehicle (CRV) is a recce variant of the recently procured Boxer vehicles that are replacing the Warrior IFV. Some ministers have already highlighted Boxer as an Ajax alternative.<sup>9</sup> Britain currently have 508 ordered that are being delivered at a rate of one per week.<sup>10</sup> If the Boxer CRV is chosen, there will be a need to expand the Boxer production capacity of the UK to get these vehicles in a timely manner.
18. The CRV variant is currently used by the Spanish Marines and the Australian Army. Much like the CV90, the Boxer is a tried and tested platform, used in its other variants by key NATO members such as Germany. The multinational use of the vehicle attracts continuous investment and development. Similarly, by using the same vehicle as the Australians, the British Army will become more interoperable with our ally and a potential CANZUK member.
19. Crucial to replacing Ajax, the Boxer CRV has an open electronic architecture for future developments and applications. The vehicle also has many C4ISTAR assets

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<sup>8</sup> Follow-up written evidence submitted by Lockheed Martin UK: Available at: <https://committees.parliament.uk/writtenevidence/14111/pdf/> Follow-up written evidence submitted by LMUK Para 14 accessed 12 July 2021.

<sup>9</sup> Twitter. Tobias Ellwood MP. Available at [https://twitter.com/Tobias\\_Ellwood/status/1410125302785773570](https://twitter.com/Tobias_Ellwood/status/1410125302785773570) accessed 12 July 2021.

<sup>10</sup> House of Commons Defence Committee. Obsolescent and outgunned: the British Army's' armoured vehicle capability. Available at: <https://committees.parliament.uk/publications/5081/documents/50325/default/> Para 58 accessed 12 July 2021.

coupled with a sensor suite making it “akin to a land-based F-35 Joint Strike Fighter”.<sup>11</sup> The Australian Boxer CRV also has a new LANCE turret, however, this only has a 30mm cannon.

20. The Australian Boxer CRV has a new LANCE turret, however, this only has a 30mm cannon. One potential costing to be aware of would be upgrading the turret to the CTA40mm that is used on Ajax and the WCSP.
21. Perhaps one of the most attractive selling points of the Boxer CRV is its survivability. The L-shaped engine, external placement of flammable liquids and hammock-like structure are but some of the aids to reduce the risk of casualties.
22. Unlike Ajax, Boxer is a wheeled vehicle making it faster on road moves. The Boxer CRV does, however, still retain the ability to keep up with tracked armour off-road, which is crucial if supporting British or allied main battle tanks and heavy armoured brigades. Additionally, the Boxer CRV weighs up to 38 tonnes, lighter than the 42 tonne Ajax, making it more deployable.
23. By expanding Boxer’s role within the new Brigade Combat Teams, the British Army can limit the variety of spare parts needed, streamline the production process and procurement process further still, simplifying logistical needs and ultimately enhancing the Brigade’s self-sufficiency. Boxer’s vast number of variants and its modular design also means that replacing Ajax’s support variants is very achievable

## Conclusion

24. Ultimately, the ongoing delays to the Ajax platform are causing serious concern amongst British Army personnel, themselves suffering mild medical injuries and in some instances potentially permanent damage whilst trialling the vehicles. Ajax is currently at least four years delayed, with the full suite of vehicles due to be in frontline service by 2024. It is likely that the trials of only 14 un-turreted vehicles will not be resumed until 2022; only two years until frontline service.
25. The longer these delays are allowed to continue, the more detrimental this will be to the UK’s Global Britain strategy, which seeks to achieve a more permanently deployed military presence across the globe. Ajax, as the focal point of the new Deep Recce Strike BCT, is an integral component to the British Army’s recently updated

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<sup>11</sup> Rheinmetall Defence. CRV Solution Profile. Available at: <https://dtrmagazine.com/wp-content/uploads/2016/06/CRV-Solution-Profile-Boxer-CRV.pdf> Page 5 accessed 12 July 2021.

Strike doctrine. Therefore, a decision must be made before the end of this year whether to press ahead with Ajax, or to develop an alternative strategy or indeed platform.

26. In reaching this decision, the MOD must consider if the problems facing Ajax can be alleviated in a timely manner, and whether the troops themselves have confidence in this equipment which is currently causing injuries to those trialling it. Both the Boxer and the Warrior are well-known and popular by the British Army, with the CV90 also receiving strong support from within defence.
27. If a long-range, fully digitalised tracked recce platform is the preferred option to spearhead the new Deep Recce Strike BCT, then the CV90 and Warrior CSP offer viable alternatives to the MOD. However, the Boxer CRV offers excellent protection, deployability, commonality and impressive C4ISTAR capabilities.
28. All three offer cost-saving measures in comparison to the Ajax, and especially so if the inherent mechanical problems persist when the trials begin after the autumn. However, the longer these delays are allowed to persist by the MOD, the detrimental effect caused to the British Army's combat effectiveness in pioneering a more forward deployed global presence will severely hinder the vision the MOD set out in the recent command paper.

**14<sup>th</sup> July 2021**