

Defence Committee

The Global Combat Air Programme

Third Report of Session 2024–25

HC 598

Defence Committee

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Summary

The UK has entered into a partnership with Japan and Italy—the Global Combat Air Programme (GCAP)—to develop a next-generation combat aircraft, due to come into service from 2035. Participation in GCAP promises much: national sovereignty in combat air; a boost for the domestic defence industry; closer relationships with important allies; and economic return via export sales.

Fulfilling this promise will not be easy. To deliver on time and to budget, GCAP will need to avoid the mistakes which have beset previous international combat air programmes such as the Eurofighter Typhoon. The complex web of relationships between governments and industry both across and within the partner nations will need to be carefully navigated: the delivery organisations set up for this purpose must be sufficiently empowered; and workshare arrangements will need to accommodate flexibility within a clearly defined framework. Any inclusion of additional international partners cannot be allowed to derail the crucial 2035 target date.

GCAP will take up a significant share of the defence budget in the coming years and as costs become more clearly defined they must be made transparent to enable meaningful Parliamentary scrutiny. Multi-year funding arrangements would provide certainty and inspire confidence from international partners. Exportability of the platform has been recognised as crucial by all three nations, and the disputes over exports seen on the Typhoon programme must be avoided.

Future-proofing will be required to ensure that the opportunity presented by Artificial Intelligence can be harnessed as the programme progresses and that integration with future uncrewed systems can be achieved. Training requirements will not be met by the existing Hawk T2 advanced jet training aircraft, and with Hawk production lines now closed the chance to capitalise on its success looks to have been lost.

As with all defence programmes, GCAP's success will ultimately come down to those who deliver it. Recruitment and retention will be a major challenge for a programme of this scale and transitioning the existing Typhoon workforce will be critical; securing further Typhoon export orders will be key to achieving this goal.

Progress on GCAP to date has been positive, but previous multilateral defence programmes have frequently seen costs spiral and delays pile up. GCAP will need to break the mould if it is to achieve its ambitious target date.

1 Introduction

1. This report is based on evidence taken by our predecessor Committee as part of their inquiry into “Future Aviation Capabilities”. That inquiry was interrupted by the 2024 general election before a report could be produced. In November 2024, we agreed to complete the inquiry and publish its findings, accounting for significant developments in the interim.
2. We have centred this report on the Global Combat Air Programme, which was the primary focus of the previous Committee’s work.
3. The Committee received 23 submissions of written evidence and held three oral evidence sessions. A full list of witnesses and published written evidence can be found at the end of this report.
4. The Committee visited Italy (in February 2024) and Japan (March 2024), the UK’s partners on GCAP, where they held meetings with Government Ministers, military leaders, industry representatives and experts to find out more about their perspectives on the programme. Some of the Members who took part in those visits were reappointed to this Committee in the new Parliament.
5. The Special Advisor for this inquiry was Douglas Barrie, Senior Fellow for Military Aerospace at the International Institute for Strategic Studies. We are grateful for his assistance to the Committee, and we take this opportunity to thank him and all those who contributed to this inquiry.

2 The Global Combat Air Programme: background

6. The UK is partnering with Japan and Italy on the Global Combat Air Programme (GCAP), a multinational effort to develop a next-generation combat aircraft. GCAP is still at an early stage of development, but it has the potential to be one of the most significant defence programmes for the UK over the coming decades both in terms of military capability and economic contribution.

History

7. In 2018 the Government published its Combat Air Strategy, in which it set out an ambition to develop a replacement for the Eurofighter Typhoon. Typhoon is a multi-role combat aircraft which forms the backbone of the existing combat air fleet; it is expected to begin to leave service in the mid-2030s and be retired by the early to mid-2040s.¹
8. As with Typhoon, it was envisaged that the UK would work with international partners to design and deliver the new aircraft, now known in the UK as “Tempest”. Both Japan and Italy signalled an interest in partnering with the UK, with the timelines dovetailing neatly with their own requirements for a next-generation fighter to replace Typhoon for the Italians and the Mitsubishi F-2 for the Japanese. In September 2019 Italy signed a statement of intent with the UK,² and in December 2022 they were joined by Japan, with an agreement signed by the leaders of all three countries bringing the Global Combat Air Programme (GCAP) into existence.³ The three countries have never before worked on a combat air programme together, although Italy and the UK have collaborated in the past on both the Eurofighter Typhoon (with Germany and Spain) and the Tornado (with Germany).

1 Douglas Barrie, Karl Dewey & Fenella McGerty, [Tempest: Build, buy, or good-bye?](#), International Institute for Strategic Studies, September 2024, p4

2 Ministry of Defence press release, [Italy partners with the UK on Tempest](#), 11 September 2019

3 Prime Minister’s Office, [Joint Leaders’ Statement: UK-Italy-Japan](#), 9 December 2022

The GCAP Treaty

9. On 14 December 2023 the Defence Ministers of Japan, Italy and the UK signed an international Treaty: the “Convention on the Establishment of the ‘Global Combat Air Programme–GCAP International Government Organisation’”.⁴ It was announced that that both the government and industry headquarters would be based in the UK; that the first CEO of the programme’s governmental delivery organisation will be from Japan, and the lead for the equivalent industry construct from Italy.⁵ The Treaty has since been ratified by all three nations.
10. The joint ministerial statement released at the time of the Treaty’s signature made specific reference to the 2035 in-service date for the new aircraft.⁶ This is a challenging target: BAE Systems observed that meeting it will require developing the core platform in half the time of comparable programmes such as F-35 and Typhoon.⁷ The MOD has acknowledged that “pace of delivery is critical to programme success.”⁸

Sovereign capability

11. The Combat Air Strategy underlined the importance of the UK combat air sector from the perspective of national sovereignty. In the Ministerial Foreword, the then Defence Secretary argued that

A strong national Combat Air sector gives the UK the military capability we need to defend the country and our national interests, and choice in how we provide that capability without relying on others—the very essence of sovereignty.⁹
12. In evidence, both the Minister for Defence Procurement and the Chief of the Air Staff referred to GCAP as a “national endeavour”, with the Minister saying that sovereignty “is what this is about for us” and noting that a sovereign capability would ensure that “in a situation of heightened military

4 Ministry of Defence, [Convention on the establishment of the ‘Global Combat Air Programme \(GCAP\) - International Government Organisation’](#), 14 December 2023

5 Ministry of Defence, [GCAP trilateral defence ministerial joint statement](#), 14 December 2023

6 Ministry of Defence, [GCAP trilateral defence ministerial joint statement](#), 14 December 2023

7 BAE Systems ([FAVC0009](#))

8 Ministry of Defence ([FAVC0018](#)) para 8

9 Ministry of Defence, [Combat Air Strategy: An ambitious vision for the future](#), 16 July 2018, p4

strife we would retain the ability to service and support whatever aircraft we had available at the time.”¹⁰ According to Unite the Union, delivering on GCAP will allow the UK “to retain control of its own destiny”.¹¹

13.

CONCLUSION

We welcome the establishment of the Global Combat Air Programme (GCAP), which will be one of the UK’s most significant defence programmes over the next decade and beyond. If delivered as planned, GCAP will enable the UK to retain national sovereignty in combat air, providing a vital military capability in an increasingly volatile world. We also recognise the opportunities the programme brings to deepen the UK’s relationships with its allies and to shore up defence industrial capacity.

10 [Qq141-143](#)

11 Unite the Union ([FAVC0004](#))

3 Structures and partnerships

International partners

14. The UK and Italy have experience of working together on combat air,¹² but this is the first time that either nation has worked on a defence programme of this scale alongside Japan, whose involvement is notable given that its previous defence industrial partnerships have almost exclusively involved the United States.¹³ Richard Berthon, Director Future Combat Air at the Ministry of Defence (MOD), told the Committee that the partnership was working well, noting that both Italy and Japan had “a credible sovereign industrial base and technology” and had invested heavily in their combat air capabilities, bringing “relevant and important” capabilities to the table.¹⁴

15. **CONCLUSION**
The Committee’s visits to Japan and Italy inspired great confidence in the commitment and capabilities of both our international partners. In particular, recognising that involvement in GCAP entails a significant step both politically and militarily for Japan, the Committee was impressed by the depth of the Japanese offer and the technical progress they have made to date.

16. There has been speculation that other countries may seek involvement with the programme. Before the existing trilateral partnership was formalised, Sweden was seen as a possible partner for the UK: the two countries signed a Memorandum of Understanding to work together on developing future combat aviation capabilities in 2019,¹⁵ and Saab invested £50m in the UK in

12 See paragraph 8.

13 The Diplomat, [Why Japan Chose Britain and Italy for Its F-X Fighter Program](#), 9 December 2022

14 [Qq146–147](#)

15 Ministry of Defence press release, [UK and Sweden partner on future combat air](#), 19 July 2019

connection with this work.¹⁶ However, no formal partnership was entered into. Sweden is now carrying out concept development work to inform its future decisions around next-generation fighter procurement.¹⁷

17. In 2023 there were reports that Germany could depart the Franco-German-Spanish future combat aircraft programme (Système de combat aérien du futur: SCAF) in favour of GCAP, although this was subsequently denied by the German Defence Ministry,¹⁸ and Trevor Taylor of RUSI felt that, for now, the “ship had sailed”.¹⁹ There has also been repeated speculation that Saudi Arabia could join the programme.²⁰ In March 2023 the UK and Saudi Arabia signed a separate Statement of Intent on co-operation on combat aircraft capabilities,²¹ and in December 2024 it was announced that the two countries would further enhance their defence partnership, specifically citing combat air.²²
18. The Committee heard that the UK was open in principle to the possibility of additional partners joining the programme.²³ An expanded partnership could bring benefits including burden-sharing of costs,²⁴ access to additional markets, and technical expertise.²⁵
19. It would also, however, expose GCAP to associated risks. With a challenging timescale, any reopening of negotiations over requirements and workshare to accommodate a new partner could threaten to derail the programme, putting in jeopardy the 2035 in-service target. This date has been agreed by all three partners and reflects the date when existing combat aircraft (the Eurofighter Typhoon for Italy and the UK, and the Mitsubishi F-2 for Japan) are expected to begin to leave service. The Minister for Defence Procurement described 2035 as “militarily crucial”, citing the threat faced by Japan in particular.²⁶ In response to a question about the implications

16 The Financial Times, [UK’s Tempest air defence project set for £50m Saab investment](#), 20 July 2020

17 Janes, [Sweden contracts Saab, GKN to chart next-generation fighter development](#), 22 March 2024

18 The Telegraph, [Germany denies plan to quit £87bn fighter jet project with France in favour of UK deal](#), 2 November 2023

19 [Q12](#)

20 See for example: [The Financial Times, Saudi Arabia pushes to join fighter jet project with UK, Italy and Japan](#), 11 August 2023; [The Telegraph, Britain considering allowing Saudi Arabia to join major fighter jet building programme](#), 11 August 2023

21 Ministry of Defence press release, [UK and Saudi Arabia sign new agreement during defence minister’s visit](#), 2 March 2023

22 Prime Minister’s Office press release, [Stability in the Middle East vital to delivery at home, Prime Minister says](#), 9 December 2024

23 [Q48](#)

24 [Q43](#) (Tim Rowntree)

25 Trevor Taylor with Isabella Antinozzi, [The Tempest Programme: Assessing Advances and Risks Across Multiple Fronts](#), Royal United Services Institute, November 2022, p19

26 [Q146](#)

of bringing new partners on board, he told the Committee that this would require the approval of all three nations in the existing agreement, stressing that

... it is all about achieving that date. We as a country, and I know for a fact that this is true for Italy and Japan, would not want any variation to occur in structure or approach that puts that at risk, just to be absolutely clear.²⁷

20. The Committee heard that timing would be an important factor for any introduction of additional partners. Brian Phillipson, a former CEO of Eurofighter GmbH, said that doing so during the development stage once work has been launched would be “extremely disruptive” but that during the later production or downstream support phases it could be manageable.²⁸

21. **RECOMMENDATION**

An open-minded but cautious approach should be taken to including new international partners within GCAP. The potential benefits will need to be weighed carefully against the risks, with any proposed partnering opportunity carefully assessed on its own merits. Any additional partnering arrangements that could jeopardise the 2035 in-service date should not be contemplated.

Delivery organisations

22. GCAP will be a complex programme to manage. As well as the trilateral partnership between the three governments, there will also be a web of industry relationships to navigate across and within the partner nations. Almost 600 organisations, extending from large companies to SMEs and academia, are involved in the UK supply chain alone. BAE Systems is the national “lead systems integrator” (LSI) and works alongside the MOD with other key industry partners on GCAP in a consortium known as “Team Tempest”.²⁹ Comparable structures exist in Italy (where Leonardo S.p.A. is the LSI) and Japan (Mitsubishi Heavy Industries).³⁰
23. To manage this complexity, delivery organisations will provide a framework for decision-making at both the Governmental and industrial levels, acting as a centralised customer and supplier for the new aircraft. The GCAP

27 [Q144](#). The requirement for existing partners to unanimously agree on the addition of new partners is at Article 48 of the GCAP Treaty.

28 [Q37](#)

29 Within Team Tempest Rolls Royce lead on power and propulsion; Leonardo UK on sensors, electronics and avionics; and MBDA UK on advanced weapons systems.

30 House of Commons Library, [What is the Global Combat Air Programme \(GCAP\)?](#), Research Briefing 10143, 14 November 2024, p3

Treaty provided for the establishment of the governmental delivery structure (the GCAP International Governmental Organisation, or GIGO), and in December 2024 it was announced that agreement had been reached on the establishment of its industry equivalent, a business joint venture between BAE Systems, Leonardo S.p.A. and Japan Aircraft Industrial Enhancement Co Ltd (JAIEC), subject to regulatory approvals.³¹

24. The Committee heard that GCAP’s success, and in particular the ability to meet the challenging 2035 target date, would largely depend on the efficient operation of these delivery organisations. Trevor Taylor told the Committee that “organisational arrangements for its delivery will be crucial and at the top of the current agenda for the governments involved.”³²

25. The MOD has said that the GIGO will be an independent legal entity, allowing it

to act on behalf of multiple governments and place contracts with industry. It enables us to deliver GCAP in a truly collaborative way, avoiding lead-nation contracting or trying to coordinate three separate national contracts onto a single international commercial entity (or even worse coordinating three separate national contracts through each nation’s prime contractor), either of which would decrease the efficiency required for the programme.³³

26. The Committee took evidence from Herman Claesen, Managing Director Future Combat Air Systems at BAE Systems (but representing Team Tempest before the Committee). Speaking in January 2024, whilst negotiations on the establishment of the industry delivery organisation were ongoing, he said that he expected it to be “a single entity” that would be authorised to act on behalf of the three lead systems integrators. He explained that this would be done through a governance construct which would be

a significant evolution of the Eurofighter GmbH scenario where... accountability was diluted. We are looking at giving more authority to that single entity, with more people inside that delivery organisation instead of being part of the individual three companies.³⁴

31 BAE Systems press release, [Global Combat Air Programme industry partners reach landmark agreement to deliver next generation combat aircraft](#), 13 December 2024

32 Trevor Taylor ([FAVC0016](#))

33 Written evidence from the Ministry of Defence to the House of Lords International Agreements Committee regarding [Scrutiny of international agreements: Convention on establishment of the ‘GCAP International Government “ Organisation](#), published 28 March 2024

34 [Q47](#)

27. Mr Claesen’s reference to Eurofighter GmbH reflects other evidence we heard that delivery structures for Typhoon were seriously flawed and contributed to significant delays on that programme. According to Brian Phillipson:

I think the biggest single issue was the lack of real control from the shared organisations ... The empowerment on the Eurofighter programme was weak. That resulted in lots of individual changes and delays For example... there were areas in which industry had responsibility for doing things and taking decisions, but those decisions had to be ratified by all four nations—not by the international agency but by the individual nations. This provided an ideal opportunity for individuals in nations to leverage the programme, often for quite unrelated issues.³⁵

These delays came with associated costs: he said that a resulting pause in production of Tranche 2 Typhoons was responsible for “a huge bill”.³⁶

28. The MOD has acknowledged that the delivery structures established for GCAP must be suitably empowered if they are to avoid a repeat of these issues. Richard Berthon described this as possibly the most important lesson to be taken from previous programmes.³⁷

29. **CONCLUSION**

Given the ambitious timescales for GCAP, its delivery structures at the Governmental and industrial levels will need to be sufficiently empowered to take timely and binding decisions as the programme progresses. A repeat of the structural failings which contributed to unnecessary delay and cost on the Eurofighter Typhoon would place the programme in jeopardy. We are encouraged that this imperative has been recognised by both the MOD and industry. It was clear from our visit to Italy that they, having also experienced the delays that had been caused on Typhoon, had drawn the same conclusions—and meeting the 2035 target date is critical for Japan. This early commitment to empowering GCAP’s delivery organisations must be sustained throughout the programme’s development if it is to succeed.

35 [Q31](#)

36 [Q31](#)

37 [Q146](#)

Workshare

30. The principles underpinning the workshare split between the three partner nations will require careful consideration. Political realism dictates that each country will be keen to secure workshare arrangements that maximise the benefits to their own domestic industrial base: the challenge will be in balancing this desire against the necessity to maximise programme efficiency. During the Committee’s visit to Italy they heard that the underlying principle of equal workshare between the partner nations was an imperative for the Italians.
31. Lucia Retter of RAND Europe explained two contrasting approaches that could be taken to workshare: “the principle of juste retour which is this idea that you give the industries in a contributing country involvement proportionate to the money being contributed by the country” or, alternatively, “the ‘best athlete’ approach, in which you just give money to the best firm or company involved”.³⁸
32. She favoured a best athlete approach, based on robust evidence and data, which she said would help to reduce inefficiencies and control costs and schedule; but she recognised that it would be “naïve” not to recognise that political considerations would play a part.³⁹ Trevor Taylor noted that, in contrast to previous multilateral combat air programmes, all three partner nations on GCAP started from a technologically capable position which could make workshare division more straightforward.⁴⁰
33. The MOD told us that the intention was to adopt a flexible approach to workshare as the programme progresses, in contrast to Typhoon, where workshare was allocated at a very early stage.⁴¹ At present there is little detail on what this would mean in practice, but the Committee heard from witnesses about possible approaches.
34. Tim Rowntree, former Director of the Organisation Conjointe de Coopération en matière d’Armement (OCCAR—an international organisation which manages complex multilateral defence programmes) explained that OCCAR took a “global balance” approach to workshare which could have relevance for GCAP. Combining elements of both the best athlete and juste retour approach, global balance entailed looking for the “best, most competitive provider” for each piece of equipment and considering the overall workshare balance at a national level “over many years and all programmes”.⁴²

38 [Q5](#)

39 [Q8](#)

40 [Qq8-9](#)

41 [Q147](#)

42 [Q33](#)

35. Similarly, Lucia Retter suggested that a mechanism could be put in place to assess each contributor's capabilities over time and allow precise workshare arrangements to evolve as the programme progressed.⁴³

36.

CONCLUSION

We support an element of flexibility in workshare arrangements for GCAP, whilst also recognising the need for all three nations involved to be, and be seen to be, equal partners over the course of the programme.

37.

RECOMMENDATION

Care must be taken to ensure that any flexibility around workshare is exercised within a clearly defined framework to avoid unnecessarily reopening negotiations and introducing delay.

4 Affordability

Funding

38. The MOD has committed over £2 billion to Tempest/GCAP since 2021 and has budgeted over £12 billion for the programme over the next 10 years.⁴⁴ An additional £600 million has already been invested by industry.⁴⁵ Overall costs for the programme have not yet been outlined; the MOD said that they would depend on “the solutions proposed, how efficient the international delivery model is, and our ability to deliver at pace”.⁴⁶
39. Trevor Taylor felt that the limited detail around costs was not a matter for concern, saying that it was “quite unrealistic to expect a precise estimate” at this stage of the programme.⁴⁷ Lucia Retter concurred, saying that it would be “very difficult” to estimate costs for a programme of GCAP’s magnitude at this stage.⁴⁸

Multi-annual funding

40. We heard calls for GCAP to be funded on a multi-annual basis to allow spending to be allocated across more than one financial year. Rolls Royce and Herman Claesen both described this as “essential”: Rolls Royce said that it would “support critical programme milestones”, enable work to progress at pace and avoid unnecessary costs; whilst Herman Claesen noted that Japan and Italy were already proceeding on this basis.⁴⁹
41. Lucia Retter and Trevor Taylor agreed that this approach would bring clear benefits, with Lucia Retter warning that under the alternative, an annualised funding model, targets and milestones could be revisited simply to maintain in-year affordability, potentially preventing long-term investment.⁵⁰

44 Ministry of Defence ([FAVC0018](#)), para 7

45 Ministry of Defence press release, [UK, Japan, and Italy sign international stealth fighter jet programme treaty](#), 14 December 2023

46 Ministry of Defence ([FAVC0018](#)), para 7

47 [Q2](#)

48 [Q3](#)

49 Rolls Royce ([FAVC0015](#)); [Q50](#)

50 [Q3](#)

Cost control

42. Although precise costs may not yet be available, it is clear that GCAP will take up a significant share of the defence budget over the next decade and beyond. The Combat Air Strategy acknowledged that combat air systems have successively cost more than their predecessors, a trend which it said needed to be addressed urgently.⁵¹ GCAP will also need to break from what our predecessor Committee described as an MOD culture of “misplaced optimism when assessing project cost and schedule”.⁵² The National Audit Office has previously found that over-optimistic cost estimates at the beginning of the Eurofighter Typhoon programme were a contributing factor to subsequent cost increases.⁵³
43. GCAP will therefore, rightly, be subject to intense public and political scrutiny, and its success will rely on continuing public and political support over several Parliamentary cycles as it progresses.
44. As Trevor Taylor observed, that support is ultimately likely to come down to the project delivering on time and to budget.⁵⁴ However, the Committee heard further reflections on how GCAP might weather political change and retain public confidence. Tim Rowntree felt that its Treaty status would afford it some political protection, arguing that “a nation finds it very difficult on a change of Government at a general election or a change of policy to back away from an international treaty obligation.” He contrasted this with the experience of Eurofighter, which was not underpinned by a Treaty, observing that “every time one of the four nations had a new Government—that means more than one a year if you think about an average Government tenure of three years—we were always blocked to some extent by a change of Government or political turmoil.”⁵⁵
45. Thales argued that GCAP should be presented to the public in a similar way to AUKUS: “as a critical agreement with important allies”. They also emphasised the importance of highlighting its contribution to economic prosperity, a view that was shared by Unite the Union.⁵⁶
46. The MOD told us that alongside its industrial and international partners it was “energetically highlighting the military and strategic need for a next generation aircraft, as well as its international, economic and industrial

51 Ministry of Defence, [Combat Air Strategy: An ambitious vision for the future](#), 16 July 2018, p16

52 Defence Committee, Ninth Report of Session 2022–23, It is broke - and it’s time to fix it: The UK’s defence procurement system, [HC 1099](#), para 90

53 National Audit Office, [Management of the Typhoon Project](#), 2 March 2011, p24

54 Trevor Taylor ([FAVC0016](#))

55 [Q34](#)

56 Thales ([FAVC0014](#)); Unite the Union ([FAVC0004](#))

importance”.⁵⁷ They noted that recent MOD strategic policy documents such as the 2023 Integrated Review Refresh had underlined the role that GCAP would play in strengthening relationships with allies and countering the threat the UK faced from its adversaries in an increasingly volatile international security climate.⁵⁸

47. RECOMMENDATION

With the defence budget under increasing pressure, it is incumbent on both Government and industry to keep tight control of costs as GCAP progresses. As more detailed information on programme costs becomes available, it must be made available to Parliament and the public in a timely and transparent manner to enable effective scrutiny. The Government should consider providing a multi-year funding arrangement to put the programme on a secure footing and provide international partners with confidence in the UK’s ongoing commitment.

48. RECOMMENDATION

If political and public support for GCAP is to be maintained, it is essential that the Government not only makes the case for its necessity as a military capability, but also promotes the broader economic benefits that it will bring.

Exports

- 49.** Exportability of the new aircraft has been identified as key to GCAP’s success.⁵⁹ The MOD told the Committee that exportability has been built into the programme from the outset, with the Minister for Defence Procurement describing it as a priority for the three partner nations.⁶⁰ Securing export orders would help to keep down the aircraft’s unit cost due to economies of scale and would also offer what Brian Phillipson described as a potentially “huge” contribution to offsetting acquisition costs:

If we look back over things like Harrier and Hawk, the UK effectively acquired its aeroplanes for nothing, because the total export revenues to the exchequer were greater than the original development and acquisition costs.⁶¹

57 Ministry of Defence ([FAVC0018](#)), para 24

58 Ministry of Defence ([FAVC0018](#)), para 21

59 Simon Chelton and Dr Philip Shetler-Jones, [The Global Combat Air Programme: The First Round of Hard Choices?](#), Royal United Services Institute, 13 September 2023

60 [Q160](#)

61 [Q43](#)

50. Export benefits are not merely purely financial: Trevor Taylor noted their importance in maintaining industrial capability, and Lucia Retter spoke of the role of exports in building strategic international partnerships.⁶²
51. The UK has a strong track record in combat air exports. Between 2019 and 2023 defence aerospace made up 56% of the £48 billion total defence exports and the 2021 Defence and Security Industrial Strategy noted that the UK's defence sector was "extremely reliant" on the export of air platforms to the Middle East in particular.⁶³
52. UK Typhoon exports have encountered obstacles in recent years. In 2018 the UK government signed a Memorandum of Intent with Saudi Arabia aiming to finalise an order of 48 Typhoons, but the sale did not proceed after Germany, one of the UK's partners on Typhoon, exercised its right of veto regarding the exports citing Saudi human rights abuses. That veto was lifted in early 2024.⁶⁴

The Japanese approach to exports

53. Japan has traditionally taken a highly restrictive approach to defence exports, reflecting a cultural antimilitarism stemming from the outcome of the Second World War.⁶⁵ However, as the Committee discovered on their visit to Japan, there has been a recent shift in Japanese public opinion and a profound change in its defence posture in response to the increased strategic threat from China in the Indo-Pacific and Russia's full-scale invasion of Ukraine. In December 2022 the then Prime Minister Fumio Kishida published a new National Security Strategy and announced that Japan would double its defence budget to reach 2% of GDP by 2027.⁶⁶
54. It was against this backdrop that in March 2024, in what the Japan Times described as "a significant shift" in Japan's defence policy, the Japanese government approved a relaxing of export controls to allow GCAP-related exports to 15 countries which had signed defence equipment transfers with Japan.⁶⁷ Prime Minister Kishida said that the changes were in Japan's

62 [Q13, Q17](#)

63 UK Defence and Security Exports, [UK defence export statistics 2023](#), 17 December 2024; Ministry of Defence, [Defence and Security Industrial Strategy: A strategic approach to the UK's defence and security sector](#), CP 410, March 2021, p75

64 The Financial Times, [Germany lifts objection to sending Eurofighter jets to Saudi Arabia](#), 8 January 2024

65 The Diplomat, [Proactive Pacifism, Arms Exports, and Japan's Quest to Be 'One of the Good Guys'](#), 27 March 2024

66 BBC News, [Japan defence: China threat prompts plan to double military spending](#), 16 December 2022

67 The Japan Times, [Japan's eased defence export rules open door to more changes](#), 18 March 2024; The Financial Times, [Japan relaxes defence export rules to allow sales of new fighter jet](#), 26 March 2024

national interest and would allow it to contribute to GCAP on an equal footing to the UK and Italy.⁶⁸ With recent difficulties on Typhoon having highlighted the importance of agreement between partners regarding exports, the Committee were reassured to hear the Japanese commitment to ensuring export success for GCAP at first-hand on their visit to Japan.

55. Richard Berthon told the Committee that he was “very comfortable with the direction of travel” on exports across the three partner nations, and that “although they have very limited experience of this, the Japanese Government have moved incredibly fast and come an incredibly long way”.⁶⁹

56. **RECOMMENDATION**

The Committee was greatly encouraged by Japan’s recognition of the importance of exports to their GCAP partners. Nonetheless, Japan’s inexperience as a defence exporter is likely to present unique challenges for GCAP which were not in evidence for Typhoon. The UK government must continue to support and encourage Japan in making the necessary legislative and industrial progress to ensure that the new GCAP fighter can be successfully exported.

57. It will be important for GCAP to avoid the disputes over exports which have plagued the Typhoon programme, where Germany’s effective veto has hampered UK export opportunities in recent years and has had a significant impact on the sustainability of the domestic combat air sector. With that veto now lifted, export orders for Typhoon are a nearer-term priority, addressed in the recommendation at paragraph 92 below.

68 Janes, [Japan considers additional defence export reforms to support GCAP](#), 7 March 2024

69 [Q162](#)

5 Capability

58. At this early stage of the programme, the precise capabilities of the new aircraft remain to be determined. Richard Berthon told the Committee that the partner nations had reached agreement on system requirements, noting that a “mismatch” on requirements “tends to be the things that undermines international partnerships as they play out”.⁷⁰ The Chief of the Air Staff set out some of the key requirements for the new aircraft, which would dictate its design:

- Longer range;
- Greater payload, enabling a larger, longer-range air-to-air missile to be carried;
- Improved stealth;
- Fusing and integrating of “the vast amount of information that will be available” in the battle space. This requirement would, he said, be the key difference which would set Tempest apart from previous generations of combat aircraft.⁷¹

59. A concept demonstrator is expected to fly in 2027.⁷² Richard Berthon told the Committee that this would not be a prototype but would be “a reasonably good representation of some of the characteristics that will play through into the GCAP platform itself”.⁷³

60. This report does not seek to make recommendations about the new aircraft’s specific capabilities. However, we note the Royal Aeronautical Society’s caution that:

The one certainty is that what we need in 2035 is not what we think we need today—the programme needs to be able to be conducted in a way that allows each element to be evolved and adapt very quickly so that it is not obsolete by the time it is delivered, both in terms of technology and military capability.⁷⁴

70 [Q146](#)

71 [Q163](#)

72 Ministry of Defence press release, [UK builds momentum on combat air programme with demonstrator set to fly within five years](#), 18 July 2022

73 [Q163](#)

74 The Royal Aeronautical Society ([FAVC0003](#)), para 1.3

61. With this in mind, the Committee considered the implications of two specific and interlinked areas where rapid technological advances and the changing nature of warfare are likely to have significant implications for GCAP: the use of Artificial Intelligence (AI) and Autonomous Collaborative Platforms (ACPs).

Artificial Intelligence

62. The Committee heard that the collection and analysis of huge amounts of data would be integral to Tempest, providing an “information advantage” over adversaries. BAE Systems described Tempest and the Future Combat Air System in which it will sit as “a flying network of supercomputers” which would integrate with other networks across both air and other military domains.⁷⁵
63. Thales said that successfully addressing this “data challenge” would be critical to the success of GCAP, noting that the RAF recognised its “ever-increasing dependency” on data but also the force multiplication effects that could be achieved from fully exploiting it.⁷⁶
64. With data at the heart of GCAP, there is a clear opportunity for Artificial Intelligence to play a role in its assimilation and analysis. Leonardo UK, the UK lead on sensors for GCAP, has explored how AI could be harnessed within the programme via their “Combat Air AI Challenge”.⁷⁷
65. Richard Berthon told the Committee that AI brought “greater opportunity” but that “the environment we are talking about this capability operating in, which is likely to be hugely contested... requires the use of humans in order to allow the use of kinetic force in particular.”⁷⁸
66. Giving evidence to the Committee’s separate inquiry into AI in defence, the Minister for Defence Procurement expanded on the ethical considerations posed by the use of AI within autonomous platforms:

while we are 100% confident that we will always work within the realms of international law and that our systems, when they have autonomous elements, will comply with international law, we have to consider the other side of this, which is that our adversaries will potentially not pay such attention to such norms, and we have to be able to out-compete them. That is not to say that we should act

75 BAE Systems ([FAVC0009](#))

76 Thales ([FAVC0014](#))

77 Leonardo press release, [Leonardo Combat Air AI Challenge](#), 30 March 2023

78 [Q152](#)

outside international law, but we should be wary of overly restraining our development efforts, because we need to have competitive capabilities. There is a balance to be struck.⁷⁹

67. RECOMMENDATION

Our recent report on Developing AI Expertise and Capacity in UK Defence examined some of the challenges and opportunities presented by the use of artificial intelligence in defence. These are not exclusive to the air domain, but they will need to be carefully managed as GCAP progresses. The Government must ensure that GCAP is future proofed so that it can not only accommodate advances in our own AI capabilities, but also counter those of our adversaries.

Autonomous Collaborative Platforms

- 68.** The Chief of the Air Staff told the Committee that Tempest would enter service in 2035 as a crewed aircraft, although he said that it was “absolutely” possible that an uncrewed version of the platform could evolve in the longer term.⁸⁰ Whilst the focus of the Global Combat Air Programme is on the development of that crewed aircraft, Tempest is expected to operate alongside uncrewed aircraft—referred to as Autonomous Collaborative Platforms or ACPs.
- 69.** A £30 million technology demonstrator programme, Project Mosquito, was launched in 2021 with the aim of developing an uncrewed fighter aircraft to fly alongside the existing crewed combat fleet and, eventually, Tempest. Led by the RAF Rapid Capabilities Office, with Spirit Aerosystems as the industry lead, Mosquito was expected to explore technologies for the UK’s first uncrewed platforms able to target and shoot down enemy aircraft and survive against surface to air missiles.⁸¹ However, the project was cancelled less than 18 months later, with the MOD saying at the time that “more beneficial capability and cost-effectiveness appears achievable through exploration of smaller, less costly, but still highly capable additive capabilities.”⁸²

79 Oral evidence taken by the Defence sub-committee on 19 March 2024, [Q105](#)

80 [Q157](#)

81 MOD press release, [£30-million injection for UK’s first uncrewed fighter aircraft](#), 25 January 2021

82 MOD press release, [Royal Air Force Rapid Capabilities Office announce review of Project Mosquito](#), 24 June 2022

70. Nick Laird, Managing Director for European Space and Defence at Spirit AeroSystems, told the Committee that despite the cancellation he considered Mosquito a success, as it enabled the identification of methods to reduce cost and time in the development of platforms which the MOD could exploit in future.⁸³
71. In March 2024 the RAF published its Autonomous Collaborative Platforms Strategy, which set out the vision and objectives underpinning its development of ACP capability.⁸⁴ The Strategy envisaged that ACPs would be an integral part of the force structure and routinely deployed alongside crewed platforms by 2030; the Chief of the Air Staff told the Committee in February 2024 that he expected cheap, “completely disposable” ACPs to operate alongside the existing combat air fleet within a year.⁸⁵ He said that development of these “tier-one” ACPs was the initial focus. Work on more complex and expensive tier two and three ACPs would be subject to further analysis.⁸⁶
72. Thales told the Committee that there were questions about the blend of crewed vs uncrewed platforms which would need to be addressed so that decisions around the procurement of new crewed assets were not made in isolation, but with a consideration of how they would interact with uncrewed assets and across domains.⁸⁷
73. According to Nick Laird, “the managing and interlinking of assets—where they are and how they are operating, either by themselves, independently, or in co-operation with manned platforms—is something that the Tempest team very much have at the forefront.”⁸⁸

74. **RECOMMENDATION**

There are many unresolved questions about how best to harness Autonomous Collaborative Platforms (ACPs) alongside the existing and future combat fleet, with the development of advanced uncrewed platforms in particular requiring significant further work. Given these uncertainties it is essential that sufficient flexibility is built into GCAP to allow for the main aircraft to operate alongside a range of future uncrewed solutions.

83 [Qq80–81](#)

84 MOD, [RAF Autonomous Collaborative Platforms Strategy](#), 27 March 2024

85 [Q153](#)

86 [Q153](#)

87 Thales ([FAVC0014](#))

88 [Q83](#)

6 Training

Hawk T2 advanced jet trainer

75. Military flying training for pilots in the UK has three phases. Phase one involves initial recruitment and selection and basic military training and is carried out within individual service commands. Phase two is the Military Flying Training System (MFTS), run by Ascent Flight Training Management Ltd, which takes pilots from introductory instruction through into specialised streams such as fast jet or rotary; and phase three sees pilots training on specific frontline aircraft such as Typhoon or F-35 within an Operational Conversion Unit (OCU). The Hawk T2 advanced jet training aircraft is flown by fast jet pilots in the final stage of the MFTS before they move on to an OCU.⁸⁹
76. There have been well-documented recent issues with the availability of the Hawk T2 which have impacted pilot training; the previous Committee examined these problems in their 2023 report, *Aviation Procurement: Winging it?*⁹⁰ The Chief of the Air Staff told the Committee during this inquiry that the problems persisted and there was likely to be a continued need for pilots to train overseas “for the next few years”.⁹¹
77. Despite these recent issues, Hawk has been an undeniable success story for the British defence industry over the 50 years since it was first flown. BAE described it as “the most ubiquitous and successful training aircraft in history”, noting that with more than 1,000 aircraft delivered to 18 countries the programme had delivered an economic return of more than ten times the initial £900 million invested by the UK Government.⁹²

89 A more detailed overview of the UK’s flying training model can be found in the previous Defence Committee’s Tenth Report of Session 2022–23, [Aviation Procurement: Winging it?](#), HC 178, Chapter 6

90 Defence Committee, Tenth Report of Session 2022–23, [Aviation Procurement: Winging it?](#), HC 178, Chapter 6

91 [Q167](#)

92 BAE Systems ([FAVC0009](#))

78. BAE’s Hawk production line at Brough closed in 2020.⁹³ The Committee questioned BAE on their plans for a successor: they said that they had not yet taken a decision on whether they would develop a new aircraft to replace Hawk.⁹⁴

Future training requirements

79. The Chief of the Air Staff told the Committee that it was “pretty clear” that Hawk would not meet the training requirements for GCAP. He said that a capability investigation was underway to assess requirements for a replacement trainer, noting that with Hawk due to leave service in 2040 and no funds currently allocated to its replacement, the case for a new programme would need to be aligned with the next defence review.⁹⁵
80. Synthetic, or simulator, training has become an increasingly important element of flying training. Simon Barnes, Group Managing Director Air at BAE Systems, told the Committee that there had been a “complete transformation in flying training in terms of the balance between live and synthetic”.⁹⁶ The Chief of the Air Staff was clear that live flying would always have a place in training, noting the importance of pilots experiencing the physiological effects and realistic context; but he also made the case for the benefits of synthetic training, namely the lower cost and the ability to exercise tactics and capabilities without risking their exposure to adversaries in the live environment.⁹⁷
81. The Committee took evidence from Tristan Crawford, CEO of Aeralis, a UK start-up firm which has been developing a modular aircraft system which could be used for training alongside other functions.⁹⁸ Aeralis has been provided with funding from the RAF Rapid Capabilities Office, with the Chief of the Air Staff describing the company’s approach as something the RAF was “very interested in”.⁹⁹ Tristan Crawford argued that given the similarity in aircraft requirements across a number of roles, including fast-jet training, Intelligence Surveillance and Reconnaissance (ISR) and tactical refuelling, a modular approach could reduce costs and provide increased flexibility, something he described as offering “a huge scale of opportunity”.¹⁰⁰

93 BBC News, [BAE Brough: Aircraft manufacturing ends after 104 years](#), 24 December 2020

94 [Qq61-70](#)

95 [Q165](#)

96 [Q61](#)

97 [Q166](#)

98 The concept involves a “Common Core Fuselage” into which an array of modular parts can be fitted.

99 [Q165](#)

100 [Q92](#)

82.

CONCLUSION

The Hawk trainer aircraft has been a UK defence export success story, but with domestic production lines closing four years ago the skills and manufacturing capacity which had built up over decades will prove challenging and costly to regenerate. We recognise that innovative training solutions, including modular aircraft and synthetics, may offer new opportunities for industry; but we find the failure to capitalise on the success of Hawk remarkably short-sighted and deeply regrettable.

7 Workforce and industrial capacity

83. The then-Government’s 2018 Combat Air Strategy came at an inflexion point for the UK’s combat air industrial base. At the time of the strategy’s publication, the sector had an annual turnover of £6 billion and directly employed over 18,000 workers, with a further 28,000 in associated supply chains.¹⁰¹ However, with Typhoon’s major design and production phases complete, and the decision taken in the 2015 Strategic Defence and Security Review to extend the aircraft in service, there was concern that the industrial capacity to design and manufacture combat aircraft within the UK was at risk. The Chief of the Air Staff (CAS) told us that there had been a recognition that the necessary skills were “dying”.¹⁰²
84. With the resource-intensive design and development phase of GCAP expected to begin in 2025, recruiting and retaining a suitably sized and skilled workforce was described by CAS as the programme’s “biggest challenge”.¹⁰³ However, he believed that investment in the sector via the Future Combat Air System Technology Initiative, a research and development programme stemming from the 2015 Strategic Defence and Security Review, meant that they were in a “positive position”.¹⁰⁴

Recruitment

85. Over 3,000 people are currently working on GCAP within the UK and Richard Berthon told the Committee that job opportunities on the programme were oversubscribed by a factor of ten. He pointed to the engineering challenges involved, the long-term nature of the programme, and the international aspect as factors making it “an attractive product” for prospective employees.¹⁰⁵ According to BAE Systems, 1,000 apprentices and graduates have been recruited across Team Tempest partners since 2018.¹⁰⁶

101 Ministry of Defence, [Combat Air Strategy: An ambitious vision for the future](#), 16 July 2018, p13

102 [Q164](#)

103 [Q164](#)

104 [Q164](#)

105 [Q164](#)

106 BAE Systems, [Impact of Tempest](#), accessed 19 December 2024

86. However, the Trade Unions warned that GCAP faced serious workforce challenges in a tight labour market. Ian Waddell, General Secretary of the Confederation of Shipbuilding and Engineering Unions, told the Committee that

Aerospace is the same as every other advanced manufacturing industry in the UK: there are just not enough people at the moment, and we are struggling to find the right calibre of people to recruit.¹⁰⁷

87. The Committee heard concerns that the apprenticeship model was not operating efficiently. Rhys McCarthy, National Officer for Aerospace and Shipbuilding at Unite the Union, acknowledged that the apprenticeships offered by some UK defence primes were “best-in-class”, but both he and Ian Waddell said that more needed to be done to streamline and cohere apprenticeships across industry. They argued that greater efforts should be made to ensure that well-qualified applicants who lost out on securing highly competitive apprenticeships within industry primes were able to find employment elsewhere within the supply chain.¹⁰⁸ Ian Waddell criticised requirements for apprentices to obtain academic qualifications, saying that the existing rules were “needlessly tying our arms behind our backs”;¹⁰⁹ and industry group ADS called for more flexibility in the rules surrounding the use of funds provided by the existing Apprenticeship Levy, including allowing larger companies to “flow” unused levy to SMEs in their supply chains.¹¹⁰

Retention

88. The Committee also heard that the workforce challenge could not be solved solely by recruiting new entrants. According to Ian Waddell, “transitioning the existing workforce—upskilling the people that are already in work and transitioning them into the new programme—is absolutely critical”; Rhys McCarthy said that failure to do so would be “a disaster”.¹¹¹
89. With full-scale production of Tempest not expected to begin until the 2030s, retaining the existing Typhoon workforce (which Rhys McCarthy put at 6,500 within the primes and a further 14,000 in the supply chain)¹¹² will be a significant challenge and will be made more difficult by the dwindling of the UK Typhoon production line at BAE Systems’ site in Warton. Union representatives at the site wrote to us in November 2024 to warn that “there are currently no Typhoons being final assembled at Warton site and no

107 [Q110](#)

108 [Q110](#), [Q113](#)

109 [Q110](#)

110 [ADS \(FAVCO011\)](#)

111 [Q110](#), [Q105](#)

112 [Q105](#)

orders for any future aircraft, essentially production has stopped for British built Typhoon aircraft.” They called for the UK Government to place a further order for 24 aircraft, arguing that this would fulfil a military requirement, maintain industrial capacity, and also encourage export orders from other nations.¹¹³

90. In the absence of a further UK order of Typhoon, the Committee was told that securing further export orders would be critical to keeping production lines running.¹¹⁴

91. **CONCLUSION**

Building and maintaining a skilled workforce will be crucial to GCAP’s success. With the defence industry facing fierce competition from other sectors for skilled workers, it is essential that a holistic approach is taken to recruitment and retention. GCAP offers a welcome opportunity to attract new talent into the UK’s combat air industry, but the focus cannot just be on the recruitment of new apprentices into industry primes.

92. **RECOMMENDATION**

Retention of the existing Typhoon manufacturing workforce, made more challenging by dwindling production runs and the gap until full-scale production of Tempest is underway, must be a priority; and securing further Typhoon export orders to ensure a consistent pipeline of production will be critical to achieving this goal.

113 Letter from Steve McGuinness to the Chair regarding production of Typhoon aircraft at BAE Warton, [4 November 2024](#)

114 [Q107](#)

8 Conclusion

93. GCAP is a global programme, but it is also a national endeavour which offers great opportunity for the UK's security and prosperity. Inevitably at this early stage, there are a range of important issues which cannot yet be addressed. These include the programme's likely resilience and capability against emerging threats such as hypersonic and directed energy weapons, advanced electronic warfare, and autonomous systems; its integration with existing and future assets, including drones, satellites, and surface assets; and its flexibility and adaptability to technological advances and changing operational requirements over its expected lifespan. All these issues will remain of considerable interest to the Committee, and to Parliament.

94. **CONCLUSION**

Whilst progress to date has been positive, previous multilateral defence programmes have frequently seen costs spiral and delays pile up and GCAP will have to break the mould if it is to achieve its ambitious target date. Decisions made at this early stage around partnerships, delivery structures and workshare by both Government and industry will be key to ensuring the aircraft arrives on time and to budget; and the importance of recruiting and retaining a suitably skilled workforce cannot be understated. The recommendations in this report are intended to help ensure that GCAP's potential is fully realised. We will continue to provide robust scrutiny of the programme as it proceeds.

Conclusions and recommendations

The Global Combat Air Programme: background

1. We welcome the establishment of the Global Combat Air Programme (GCAP), which will be one of the UK's most significant defence programmes over the next decade and beyond. If delivered as planned, GCAP will enable the UK to retain national sovereignty in combat air, providing a vital military capability in an increasingly volatile world. We also recognise the opportunities the programme brings to deepen the UK's relationships with its allies and to shore up defence industrial capacity. (Conclusion, Paragraph 13)

Structures and partnerships

2. The Committee's visits to Japan and Italy inspired great confidence in the commitment and capabilities of both our international partners. In particular, recognising that involvement in GCAP entails a significant step both politically and militarily for Japan, the Committee was impressed by the depth of the Japanese offer and the technical progress they have made to date. (Conclusion, Paragraph 15)
3. An open-minded but cautious approach should be taken to including new international partners within GCAP. The potential benefits will need to be weighed carefully against the risks, with any proposed partnering opportunity carefully assessed on its own merits. Any additional partnering arrangements that could jeopardise the 2035 in-service date should not be contemplated. (Recommendation, Paragraph 21)
4. Given the ambitious timescales for GCAP, its delivery structures at the Governmental and industrial levels will need to be sufficiently empowered to take timely and binding decisions as the programme progresses. A repeat of the structural failings which contributed to unnecessary delay and cost on the Eurofighter Typhoon would place the programme in jeopardy. We are encouraged that this imperative has been recognised by both the MOD and industry. It was clear from our visit to Italy that they, having also

experienced the delays that had been caused on Typhoon, had drawn the same conclusions—and meeting the 2035 target date is critical for Japan. This early commitment to empowering GCAP’s delivery organisations must be sustained throughout the programme’s development if it is to succeed. (Conclusion, Paragraph 29)

5. We support an element of flexibility in workshare arrangements for GCAP, whilst also recognising the need for all three nations involved to be, and be seen to be, equal partners over the course of the programme. (Conclusion, Paragraph 36)
6. Care must be taken to ensure that any flexibility around workshare is exercised within a clearly defined framework to avoid unnecessarily reopening negotiations and introducing delay. (Recommendation, Paragraph 37)

Affordability

7. With the defence budget under increasing pressure, it is incumbent on both Government and industry to keep tight control of costs as GCAP progresses. As more detailed information on programme costs becomes available, it must be made available to Parliament and the public in a timely and transparent manner to enable effective scrutiny. The Government should consider providing a multi-year funding arrangement to put the programme on a secure footing and provide international partners with confidence in the UK’s ongoing commitment. (Recommendation, Paragraph 47)
8. If political and public support for GCAP is to be maintained, it is essential that the Government not only makes the case for its necessity as a military capability, but also promotes the broader economic benefits that it will bring. (Recommendation, Paragraph 48)
9. The Committee was greatly encouraged by Japan’s recognition of the importance of exports to their GCAP partners. Nonetheless, Japan’s inexperience as a defence exporter is likely to present unique challenges for GCAP which were not in evidence for Typhoon. The UK government must continue to support and encourage Japan in making the necessary legislative and industrial progress to ensure that the new GCAP fighter can be successfully exported. (Recommendation, Paragraph 56)

Capability

10. Our recent report on Developing AI Expertise and Capacity in UK Defence examined some of the challenges and opportunities presented by the use of artificial intelligence in defence. These are not exclusive to the air domain,

but they will need to be carefully managed as GCAP progresses. The Government must ensure that GCAP is future proofed so that it can not only accommodate advances in our own AI capabilities, but also counter those of our adversaries. (Recommendation, Paragraph 67)

11. There are many unresolved questions about how best to harness Autonomous Collaborative Platforms (ACPs) alongside the existing and future combat fleet, with the development of advanced uncrewed platforms in particular requiring significant further work. Given these uncertainties it is essential that sufficient flexibility is built into GCAP to allow for the main aircraft to operate alongside a range of future uncrewed solutions. (Recommendation, Paragraph 74)

Training

12. The Hawk trainer aircraft has been a UK defence export success story, but with domestic production lines closing four years ago the skills and manufacturing capacity which had built up over decades will prove challenging and costly to regenerate. We recognise that innovative training solutions, including modular aircraft and synthetics, may offer new opportunities for industry; but we find the failure to capitalise on the success of Hawk remarkably short-sighted and deeply regrettable. (Conclusion, Paragraph 82)

Workforce and industrial capacity

13. Building and maintaining a skilled workforce will be crucial to GCAP's success. With the defence industry facing fierce competition from other sectors for skilled workers, it is essential that a holistic approach is taken to recruitment and retention. GCAP offers a welcome opportunity to attract new talent into the UK's combat air industry, but the focus cannot just be on the recruitment of new apprentices into industry primes. (Conclusion, Paragraph 91)
14. Retention of the existing Typhoon manufacturing workforce, made more challenging by dwindling production runs and the gap until full-scale production of Tempest is underway, must be a priority; and securing further Typhoon export orders to ensure a consistent pipeline of production will be critical to achieving this goal. (Recommendation, Paragraph 92)

Conclusion

15. Whilst progress to date has been positive, previous multilateral defence programmes have frequently seen costs spiral and delays pile up and GCAP will have to break the mould if it is to achieve its ambitious target date. Decisions made at this early stage around partnerships, delivery structures and workshare by both Government and industry will be key to ensuring the aircraft arrives on time and to budget; and the importance of recruiting and retaining a suitably skilled workforce cannot be understated. The recommendations in this report are intended to help ensure that GCAP's potential is fully realised. We will continue to provide robust scrutiny of the programme as it proceeds. (Conclusion, Paragraph 94)

Formal Minutes

Tuesday 7 January 2025

Members present

Mr Tanmanjeet Singh Dhesi, in the Chair

Mr Calvin Bailey

Alex Baker

Lincoln Jopp

Mrs Emma Lewell-Buck

Mike Martin

Ian Roome

Michelle Scrogham

Derek Twigg

The Global Combat Air Programme

Draft Report (*The Global Combat Air Programme*), proposed by The Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 94 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Third Report of the Committee to the House.

Ordered, That The Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available (Standing Order No. 134)

Adjournment

Adjourned till Tuesday 14 January 2025 at 10.00am.

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the [inquiry publications page](#) of the Committee's website.

Tuesday 9 January 2024

Lucia Retter, Research Leader, RAND Europe; **Professor Trevor Taylor**, Director of the Defence, Industries & Society Programme, RUSI [Q1-29](#)

Tim Rowntree, Former Director, OCCAR; **Brian Phillipson**, Former CEO/COO, Eurofighter GmbH [Q30-44](#)

Wednesday 24 January 2024

Simon Barnes, Group Managing Director Air, BAE Systems; **Herman Claesen**, Managing Director Future Combat Air Systems, BAE Systems [Q45-78](#)

Tristan Crawford, CEO, AERALIS; **Nick Laird CBE**, Managing Director of European Space and Defence, Spirit AeroSystems [Q79-102](#)

Ian Waddell, General Secretary, The Confederation of Shipbuilding and Engineering Unions (CSEU); **Rhys McCarthy**, National Officer for Aerospace and Shipbuilding, Unite the Union [Q103-120](#)

Wednesday 21 February 2024

James Cartlidge MP, Minister for Defence Procurement, Ministry of Defence; **Air Chief Marshal Sir Richard Knighton KCB**, Chief of the Air Staff, Ministry of Defence; **Lieutenant General Sir Rob Magowan CB CBE**, Deputy Chief of the Defence Staff (Financial and Military Capability), Ministry of Defence; **Richard Berthon OBE**, Director Future Combat Air, Ministry of Defence [Q121-213](#)

Published written evidence

The following written evidence was received and can be viewed on the [inquiry publications page](#) of the Committee's website.

FAVC numbers are generated by the evidence processing system and so may not be complete.

1	ADS	FAVC0011
2	AERALIS	FAVC0007
3	AERALIS	FAVC0021
4	Airbus	FAVC0013
5	Ascalon Defence Consultancy	FAVC0001
6	Ascent Flight Training Ltd	FAVC0008
7	BAE Systems	FAVC0009
8	BAE Systems plc	FAVC0022
9	Boeing	FAVC0017
10	GE Aerospace	FAVC0006
11	Lockheed Martin UK	FAVC0010
12	Ministry of Defence	FAVC0023
13	Ministry of Defence	FAVC0018
14	Northrop Grumman	FAVC0012
15	Patel, Jag	FAVC0002
16	Phillipson, Brian	FAVC0019
17	RUSI	FAVC0020
18	Rolls Royce	FAVC0015
19	Spirit AeroSystems	FAVC0005
20	Taylor, Trevor (Director of the Defence, Industries and Society Programme, RUSI)	FAVC0016
21	Thales	FAVC0014
22	The Royal Aeronautical Society	FAVC0003
23	Unite the Union	FAVC0004

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the [publications page](#) of the Committee's website.

Session 2024–25

Number	Title	Reference
1st	Service Accommodation	HC 406
2nd	Developing AI capacity and expertise in UK defence	HC 590