



International Relations and Defence Committee

Corrected oral evidence: The Global Combat Air Programme

Wednesday 6 March 2024

11.30 am

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Members present: Lord Ashton of Hyde (The Chair); Lord Alderdice; Lord Bruce of Bennachie; Baroness Coussins; Baroness Crawley; Baroness Fraser of Craigsmaddie; Lord Houghton of Richmond; Baroness Morris of Bolton; Lord Robertson of Port Ellen; Lord Soames of Fletching; Lord Wood of Anfield.

Also present: Lord Anderson of Swansea; Lord Howell of Guildford; Lord Hannay of Chiswick.

Evidence Session No. 2

Heard in Public

Questions 12 - 22

Witnesses

I: Professor Trevor Taylor, Professorial Research Fellow, Royal United Services Institute; Lucia Retter, Research Leader, RAND Europe.

Examination of witnesses

Professor Trevor Taylor and Lucia Retter.

Q12 **The Chair:** Good morning, and thank you very much for coming. We are meeting to discuss the UK's Global Combat Air Programme. This is a public session, streamed live on the parliament website. A transcript will be taken and we will send you a copy afterwards to make sure that there are no errors of fact.

I remind members to give any interests pertinent to the inquiry. In doing so, I should say that my wife is a shareholder in BAE Systems.

Could the witnesses be so kind as to give a very brief introduction to themselves when they answer their first question? That would be great. We have quite a lot to get through, so we are going to ask brief questions—but to the point. If you could try to keep your answers relatively brief, it would be tremendous. We will also have some follow-ups.

There are three members from the International Agreements Committee here as well, who will be looking at the treaty for this programme.

This is an international collaboration, as we all know, between the UK, Japan and Italy. We hope that there are cost-sharing advantages from that, but what are the main challenges that you see from having an international problem like this and how can they best be managed?

Lucia Retter: Good Morning. I am assistant director at the defence and security research group at RAND Europe. I also direct our Centre for Defence Economics and Acquisition.

Thank you very much for your question. In fact, when the Ministry of Defence was drafting its Combat Air Strategy in 2018, it asked RAND Europe to produce a number of different analyses particularly to support an understanding of what makes international collaborations work better and what the main challenges are. I would observe that, although cost-sharing is one of the important factors that drive international collaborative programmes such as GCAP, countries seek to derive many other benefits—for example, deepening strategic relationships or accessing technology that other partners might have developed.

As you rightly hinted in your question, these collaborative partnerships are not easy and we have identified many challenges from both academic evidence and some previous RAND analyses of a range of different collaborative programmes. They can be grouped into three buckets: the intergovernmental challenges; interfirm challenges; and challenges related to work share.

To be specific, many of the intergovernmental challenges in the first bucket stem from the difficulties in agreeing the core system requirements: what exactly do the different Governments want from that collaborative programme, in terms of military capability? I observe that we are in a fairly good position in GCAP, because the system requirement

document has been finalised. That is positive news. However, as the programme evolves, these requirements may also evolve. The challenges that we have seen in the past are from when discussions have perhaps delayed programmes, because different nations want to adjust capabilities and introduce changes, which can open up contracts and create new contract negotiations, which lead to further delay.

On the firm level, so the second bucket, we have identified a number of challenges relating to agreement on intellectual property rights. That is a very important question for the different industries involved. Then there are challenges in navigating the partner-competitor dynamics. There are industries involved in those collaborative programmes that are supposed to collaborate together and be partners whereas, in other segments of the market, they may be competitors. Navigating how industries do that can be challenging and affect the programme performance.

I guess that there will be some additional challenges in GCAP with companies such as Leonardo, which is a prime contractor in Italy—the Leonardo group—whereas, in the UK, Leonardo UK leads the subsystem integration. One can imagine that the companies will have to navigate some different dynamics, which can present challenges and risks.

There are separate challenges related to work share. There are clearly some difficult negotiations to be had around exactly who will be doing what, at which stage of the programme. Such negotiations can truly delay programmes, as we saw with Eurofighter, for example, where even fairly minor adjustments to work share could really extend the programme's delivery schedule.

Finally, there are cross-cutting challenges, for example with lack of trust, cultural challenges and the need for solid leadership to drive the pace of the programme's delivery. There is a range of different things to watch out for, but we have certainly seen some positive signs from GCAP so far.

Professor Trevor Taylor: First, we have done lots of collaborative projects and we should not forget that. The advantages are pretty clear and the difficulties are well understood. In many respects, collaborative approaches to major projects have become settled as the least bad alternative to simply being externally reliant.

On this, I would emphasise that the discussions did not start with this treaty. Discussions between the companies have been going on for some years. One of the reasons why it has proceeded as quickly as it has is that the companies reported to us that discussions with their Japanese equivalents have been very positive. That is an encouraging start. I think that we will also see a more collaborative approach to the subsystems from this, as is already the case for the radar and sensors.

Such partnerships are difficult and have lots of issues, but this treaty arrives after an encouraging period. The UK has been looking at Japan since 2013, although it was having other discussions.

I should have said, by way of introduction, that I handle the defence industrial and procurement side at RUSI. I was listening to my colleague, Justin, and our division of labour is that Justin focuses on the operational side while I focus on the supply chain. Sometimes we disagree, but quite often we agree. That is the distinction between us.

Q13 Lord Hannay of Chiswick: There are two governance issues that you have not mentioned and which could be extraordinarily tricky—perhaps even existentially tricky. First, we are talking about three countries that are democracies—they regularly have elections that produce new governments—and whose defence spending on other matters will be constrained by this programme going ahead. What provisions are there, and what would happen, if one of the parties simply had an election and announced that it could not go on? What would be the negative consequences for a country that withdrew? This situation arose over Concorde, of course.

The second issue concerns export policy. There are examples of internationally collaborative ventures where this has been extremely fraught. Indeed, the most obvious one is about the Germans' attitude to exporting to Saudi Arabia. Clearly, this project could suffer from the same thing. What are the provisions in the treaty that would avoid this happening—or perhaps there are none?

Professor Trevor Taylor: The treaty indicates that exports will be addressed on a collaborative, collective basis rather than—

Lord Hannay of Chiswick: So everyone has a veto.

Professor Trevor Taylor: There is a nuanced change. This is a treaty, but most collaborative projects are also founded on a memorandum of understanding, because that is classified and does not need the same kind of ratification process. We have a treaty for this because the managing organisations and governments need to be able to sign contracts, pay salaries and so on. This is only part of the understanding about how it will work, if you like.

My understanding is that memoranda of understanding normally make it difficult for parties to withdraw because, basically, the requirement on them—I am looking across at one of your members, who will know about this perfectly well—says, "If you withdraw, you have to enable the other parties to continue with the project". This can imply the transfer of technology and expertise. When we withdrew from Boxer, the UK had to pay tens of millions to take that step. So it is quite unusual. One of the advantages of collaborative projects, from a national or service point of view, is that they are harder to cancel because of these kinds of provisions.

So yes, there is a possibility, but we would have to see the detail of the MoU, which is classified, to understand just what they are. Basically, I am confident that they make it difficult and expensive for anybody to withdraw—as well as the political consequences that Justin referred to.

Lord Hannay of Chiswick: What about export policy?

Professor Trevor Taylor: Export policy is dynamic in terms of Japan. Historically, Japan took the view that it would not export its defence equipment. It has moved away from that over a period of at least a decade. What the treaty says, and what the Japanese have said, is that their three principles, which make it more difficult for them, would not apply to this programme. Japan is looking at separating this off but, actually, it is now being quite active in trying to export things. It tried to sell submarines to Australia, for instance, so its policies are evolving.

The treaty refers to this, but it talks about deciding on a collaborative basis rather than the national veto, which is what Germany raised. Interestingly, the Netherlands have just done this. It has said that no F-35 parts should go to Israel from the Netherlands. Obviously Israel has other sources, but that is a national act that the Netherlands has taken. It is going to be an issue. The question of Saudi Arabia will also be in this programme.

This is an identified problem for governments to address. The dangers are not so much from identified problems, because you can set out a plan and discuss it; the things that we worry about are the things that we did not expect and had not identified.

Lord Howell of Guildford: I just want to add something. Also, I should have said earlier that I have an interest here: I advise Mitsubishi Electric, which has advised me that it will be involved in the supply chain and has already been involved in discussions on this.

The treaty says: "The Treaty may be amended in accordance with Article 62. Any Party may seek to undertake a review of this Treaty as well as to amend it at any time". Is that what you understand about it?

Professor Trevor Taylor: Yes, but I think that those terms—that you or the parties who sign the treaty can change it—are fairly standard for a treaty. It is a term that gives flexibility and opens doors. It stops the treaty being a piece of concrete, as it were. I do not see it as particularly significant.

Q14 **Lord Robertson of Port Ellen:** I have an interest to declare: I am a senior counsellor with the Cohen Group in Washington. I have some bitter experience of the Eurofighter Typhoon, which I inherited in 1997. It had been on the desk of Fred Mulley 18 years before, so there were 18 years of development and it was not even delivered until two or three years after I was in the Ministry of Defence. This treaty has produced a new mechanism: a new international government organisation that is supposed to deal with the problems that we saw with the Eurofighter. My first question is: is it unprecedented? Can you think of any other precedent that would allow that kind of model to work and to be produced both on time and on budget?

My second question is a broader one. If everybody is going to have their own sovereign capability and produce their own aeroplane in this

advanced way, what does that say about general European defence expenditure and capability in future?

Lucia Retter: Let me comment on your first question. It is indeed quite a novel approach in the sense that it consciously tries to learn the lessons from NETMA, the NATO Eurofighter and Tornado Management Agency, particularly in relation to vesting the authority for co-ordinating the requirements across the different partner nations in one place—basically, having a single customer organisation that can decide which requirements go ahead and can therefore liaise with a single industrial construct on the other side as to how those requirements can be delivered.

I suppose that there might be some parallels with OCCAR—the Organisation for Joint Armament Cooperation, which the UK is part of—in terms of having a bespoke multilateral treaty in place. I am not a legal expert so I cannot necessarily comment on a direct comparison of what those treaties look like and what exactly may be translatable to GCAP, but the set-up is a bespoke multilateral treaty that vests some authority in OCCAR for the programmes that are run through it.

I will just make a small comment on the export dimension that Professor Taylor talked about. There is a comment in the treaty specifying that there will be a separate arrangement to explain exactly how disagreements between the different parties might be handled. That is certainly one to watch because it is there, I hope, where the parties will specify exactly how they want to negotiate around potential exports to non-parties to the treaty. What we can read in the treaty at the moment is just that the parties will try to negotiate expediently, as quickly as possible and openly. There is a provision saying that there will be specific arrangements in a separate document to understand what that will really look like.

Professor Trevor Taylor: The novelty of this is much more in the expected powers of the joint organisation and the companies, as Lucia says. Most collaborative projects are managed by some kind of international body, although Meteor is run through Defence Equipment & Support (DE&S). Most of them have also been parked, if I can use that expression, or located within NATO, so NATO becomes, if you like, the legal entity that can sign contracts and so on. Typhoon went through NETMA in 1996, I think. I did not see the novelty. It is a separate project; obviously, because of Japan, it could not be given a NATO helmet.

The intention, as Lucia says, is to have a much more empowered central body rather than the way Typhoon tended to work, which you will have experience of: when anybody asked a question on the industrial side, they had to ask all the other industrial partners, then when they got an agreement they would ask the other side of the management body, then they would ask all the nations, then they would come back—it was a very ponderous process. The idea with OCCAR and with this is to put more decision-making power into this international governmental body. We will see how it works out, but that is the intention.

Lucia Retter: Just to add to what Professor Taylor said, it is fundamental that the delivery structures are as efficient as possible because the timelines for this project are extremely ambitious to deliver capability by the 2035 in-service date. It is a very rapid timeline. There is a full recognition, or at least it seems so from the public sources, that the delivery structures will have to work differently from Typhoon because the time is just not there.

Lord Robertson of Port Ellen: Our staff notes say: "By establishing GIGO through international treaty, the parties aim to insulate the design authority from political interference and the political cycle", and I wrote, "Ho ho", beside it. What would you write beside it?

Professor Trevor Taylor: This is not a risk-free enterprise; we have to recognise that. That is why, if it comes off, enormous kudos and benefits will be associated with it. But I take some comfort in the preparations that have been made so far, and the understanding that the parties have of what they need to do and the pressures under which they are going to come.

One of the more interesting comments that I have heard from Japan is about cost. The Japanese said, "We're not too worried about cost because"—this is the interesting bit—"if we do it quickly, the costs will be bearable. What adds to the cost are delays and a long time". So that focus on this 2035 target has wider implications. That is a consideration that is in the debate. My stance on this is very much that I am optimistic but there is nothing certain; it is a risky endeavour.

On the political part, significantly, a function that all the major countries that are taking part in this and that do defence procurement is that they all want multiple benefits from their defence spend. They want economic prosperity, levelling up, to increase their technological capability and to protect their balance of trade. They want not only to have ownership of systems but to be able to control them. There are often differences of opinion when you pursue multiple objectives; we just have to recognise that.

Q15 **Baroness Coussins:** The treaty, as you said, establishes the GIGO as a mechanism intended to mitigate some of the risks and management challenges that you have identified, and it will be based in the UK. Do you see that as a potentially positive opportunity for the UK to demonstrate leadership, or is it a poisoned chalice?

Lucia Retter: I suppose that, from a practical perspective, there is a real benefit in having an international organisation such as this in the UK, in the sense that it can perhaps enable better face-to-face interaction with government and with the industrial construct, which, importantly, will also be set in the UK. The hope is that having physical proximity in one country and in one time zone might enable a more collaborative and constructive dynamic in this relationship.

Clearly, there will also be some costs, because of the host nation having to provide certain facilities and enablers, but practically speaking, it could be quite beneficial also to attract jobs. For example, when we look at the industrial construct element of it in particular, what we saw in Eurofighter was that a lot of the really senior engineering management jobs tended, over time, to congregate around Munich, where the consortium was registered. Perhaps that could happen in the UK as well to support really niche or specialised jobs, both in the GIGO—the government organisation—and on the industrial side. I guess we will see, but it could bring some benefits.

Professor Trevor Taylor: There will be subunits of the GIGO in other countries to give some kind of balance. The UK was simply the most sensible place to locate it from the point of view that it is close to Italy, it is the major player, the location that is understood to have been chosen is near Heathrow, and there is a good air service between Japan and the UK. The language of the programme will be English, which obviously is a major challenge for the Japanese but we have had a lot of contact with Japanese industry across the piece. I think it was simply the most sensible place to do it. It is not going to Farnborough, as I understand it, but it will be somewhere on the Great Western Railway line.

Q16 **Lord Soames of Fletching:** Noting the points you made about Japan and others, from what you know of the programme to date, how well is GCAP progressing as it goes along? Given the astonishing claims that are made for it in terms of cutting-edge and innovative technology, how realistic is the timeline for delivery?

Professor Trevor Taylor: Everybody understands it; I do not think anybody is being blindly optimistic. The next three to four years will be highly central. We need to get through the next three to four years with tangible areas of progress. Lots of areas need to be addressed and are understood as difficulties, but if it goes well in the next three to four years, that will augur very well. We will see; there are lots of tasks to do. But currently, I have seen the professionals who are involved, and I have been to the factories and seen some of the demonstrations that they have put on, and there are grounds for optimism. The managerial, political and technological challenges are obvious, but so is the ambition.

One of the things that will be significant is how digital engineering is exploited with this project. I have a non-technical understanding of digital engineering, but it has the possibility to accelerate things and to reduce costs in a way that other programmes have not been able to do. There was an argument a few years ago about what the Ministry of Defence called research and development, because somebody discovered that, in terms of the wider picture, it was not being done according to the Frascati rules that govern it. The proportion of development costs for an aircraft that are devoted to taking the aircraft and test flights is huge; it is a massive element of development costs. If you can use digital engineering to cut down the number of test flights, and you can do more things on a 24-hour basis on a computer, there would be real

advantages. The whole digital engineering piece is challenging, but if it looks good in the next three to four years, that will be very encouraging.

Lucia Retter: We have seen some encouraging progress to date. It is fair to say that, before the publication of the 2018 Combat Air Strategy, there were lots of different options on the table for how the UK might acquire combat air capability. We moved from that to December 2022, when those options were significantly narrowed to a trilateral programme with Japan and Italy and, only a year after, to signing a treaty to establish the governance organisation. Progress has been quite significant.

I agree with Professor Taylor that there seems to be conscious recognition of all the challenges—for example, from the innovative technologies that are progressing extremely fast. As you probably would have heard from the previous panel, the idea is to have a capability that is upgradeable incrementally, so that the 2035 solution is not 100% but is good enough to meet the three countries' systems requirement. It should be designed with open architecture, such that these upgrades or spiral developments can be made over time. That gives us some hope that the drive is not towards an exquisite platform by 2035 but towards one that can evolve in responding to innovative technologies and the evolving threat environment. In 2035, this will also probably look very different from how it looks now.

Professor Trevor Taylor: I sat in on the previous discussion, and I always say that "open systems" is very easy to say and quite hard to do. Some of the attributes of an open system such as this are easy for non-technical people to understand, such as the strength of the airframe and its size, and electricity. This does not apply just to aircraft but it certainly applies to this one. This core aircraft will have a capacity to generate a lot more electricity than it immediately needs. If somebody from the Treasury says, "Why do you need that?" the answer would be, "I don't know, but I know I will".

To give an example, the other day the Secretary of State said—I will correct this number later, if I can—that the radar will generate 10,000 times the amount of data than a previous radar did. That mass of data has to go into compute facilities, which, as we all know, need electricity. There are certain core features of this aircraft that will enable modularity and are not to do with the flight control systems and all the software.

Q17 **Lord Alderdice:** We have been talking about timescales and development, but full-scale production of the new aircraft is not expected to get under way until the 2030s. How can the MoD and industry ensure that an appropriately trained and skilled workforce is retained and, as far as necessary, developed over that period?

Professor Trevor Taylor: I would very much place the emphasis on "developed". The manufacturing technology and the whole digital piece will be different. If you go to Warton, you will see how conscious people there are of the need to recruit and develop the new generation of people

and give them the skills that will be needed. It is a very striking feature that also applies to the other companies.

Baroness Crawley: I am sorry; did you say Horton?

Professor Trevor Taylor: Warton—the main site for aircraft manufacture in the UK.

There is huge awareness of this and a continuity of work issue, which significantly hinges on Typhoon and, one way or another, on Saudi Arabia. As part of their pressure to have some kind of role in GCAP, the Saudis understandably see that, if they get that, they will go ahead and buy more Typhoons, which will enable the continuity of work. We pay diplomats to sort those things out, but in terms of developing new skills, everybody has it gripped.

Lucia Retter: I will add just a little more detail. These complex defence capability programmes require a range of different specialised skills. In fact, the Ministry of Defence has been doing analyses of these industrial skills requirements since 2010 and RAND supported a number of them, so we have a fairly detailed picture. We often identified challenges in ensuring the design and development skills are retained, because they are fundamental to designing the system in the first place.

Manufacturing skills, at least to date, have not necessarily been in such a challenging situation, mostly because of the exports of and domestic demand for Typhoon, which has been at a sustained drumbeat. As Professor Taylor said, whether that drumbeat is truly sustained very much depends on how this develops over the next few years.

Again, I support what Professor Taylor said about the new skills that might be required to support the manufacture. These Industry 4.0 technologies—as we refer to them—such as automation and robotics. We will need more programmers and data scientists, in addition to the more traditional manufacturing skills. We are looking at both the volume of skills and the different type of skills that will be required for the manufacturing of GCAP.

Q18 **Lord Houghton of Richmond:** I will just quickly re-ask the question that I asked in the first session. It is about the degree to which this programme, in combination with the likes of AUKUS, will so dominate the defence budget and—dare I say it?—political manoeuvre room to rationalise defence policy, foreign policy and affordability such that there is an element of lunacy to embarking on it until we better understand the affordability of all this, in programmatic terms, over 20 to 30 years. What are the ways in which we can maintain flexibility and limit the fact that these two programmes, if you also include AUKUS, will, along with the nuclear programme, dominate the defence budget to any of the likely levels of affordability that we might see?

Professor Trevor Taylor: In my work looking at acquisition and industrial issues, one of the questions that we ask is how the project fits in with wider government policy. This programme is highly compatible; it

ticks pretty much all the boxes of policy that the Government have put in place. The question then is how to do it as effectively as possible.

I am not sure that AUKUS is much of a financial challenge from the submarine part. There is an industrial challenge on Rolls-Royce to expand its production capability. What AUKUS does, in essence, is for Rolls-Royce to provide the reactors for the Australian submarines. This, crudely, is a business opportunity. The deterrent is a cost and this has long been an argument. It is not and will not be getting any cheaper, because the effort to make submarines more traceable is increasing, as is the feasibility of that. That is a separate issue about how to stay an independent nuclear power.

The Government have talked about £10 billion over the next eight years. In the last three years, we sent £6 billion to Ukraine. Those are the numbers. What is affordable, to a certain extent, is a matter of will. There have been costs estimates in the numbers quoted so far, but they are hidden. I do not think these sorts of figures are mind-blowing. When you add them up over a period of years, they get big, but when you do it on an annual basis you get a different number.

I feel that, with the current estimates that are available in the public domain, this will not distort the defence budget drastically—not nearly so much as some other programmes that sit in the ministry, of which the nuclear one is the biggest element. There are some suggestions that the nuclear thing should be taken out of the defence budget estimate.

Lucia Retter: It is quite useful to look at the 2018 Combat Air Strategy and what it proposes as a national value framework to look at what these programmes bring in terms of not just cost and the budgetary element but some of the wider benefits for prosperity, international influence, the local economy, science and technology, and innovation. It is more of a complex picture. It has an affordability element and the budget is very important, of course, but the picture is broader in terms of looking at what combat air enterprise looks like in the UK, what it brings and what this particular programme might bring.

Professor Trevor Taylor: I should add that I am not endorsing the calculation; I am just pointing out that it exists. BAE Systems produces figures showing that the Typhoon has been a significant source of profit from the UK, given the export market and all the follow-on activities associated with it. As Lucia says, there is a cost but, to a certain extent, it is investment.

Q19 **Lord Bruce of Bennachie:** You have partially answered this question. You are being very positive, in that you think it can work without ignoring the fact that there are risks, but we know from the past that many of these grand projects overrun dramatically and get delayed. What has been learned from that that will make this one different?

In the context of the three parties, to what extent does the political engagement of Japan and Italy add to or detract from maintaining that

control? We have talked about the debates on priorities. The UK, as you say, has a commitment in the short term to Ukraine, which could well have implications for the defence budget in the way that Italy is less enthusiastic and Japan is not involved. How do we ensure that all these counterbids come together and that the experiences we have had in the past of cost overruns will not manifest this time?

Lucia Retter: There is a clear awareness of the risks. It seems like, in the leadership on both sides—the Government and the industry—there is some lived experience of the pains of Eurofighter and its delivery. Basically, the leadership itself has been involved in those programmes, so there is a sense that we need to do things differently if we want to make this work. It is very likely that there will still be some challenges in keeping the cost down and keeping the schedule on time. The question is: are we trying to set up those delivery mechanisms in a way that will give us a bit more headroom to deal with them more efficiently than we have done in the past? I see that there is some hope precisely in the design of both the intergovernmental organisation and the industrial construct, which is, of course, still in negotiation; we will find out this year exactly what that looks like, I hope. The intention is very much that there will be a single customer voice vis-à-vis a single industrial voice. That is almost the only way one can try to drive efficiencies and deliver by the 2035 deadline.

You also asked about the political engagement and difficulties. Again, I find it encouraging that there has been a sustained dialogue between the three nations. In fact, they moved quite rapidly from the initial announcement in 2022 to the treaty; I do not want to say that that was unprecedented but it is certainly encouraging to see that there seems to be a recognition among the three parties of the need to trust each other and have an open dialogue. Again, I do not think that I am being too optimistic; maybe I would say that I am cautiously optimistic because we know, exactly as you said, that there are many risks that will end up manifesting as costs and delays, and perhaps even compromises in performance.

Professor Trevor Taylor: We have covered quite a few things: the emphasis on the recognition of the importance of speed and decisions; the single customer that Lucia referred to; and the awareness of the need for requirement control. There is a word that has not been used at all in this session, I think: competition. Of course, a striking feature of this project is the fact that government and leading industry have been working together, rather than having some kind of process whereby the military side or the government side comes up with a requirement and then takes it to industry and asks, “What’s it going to cost and can you do it—and do it cheaply?” This is one of the reasons why we get so many overruns and why we have the optimism that was referred to in the previous session. Companies feel obliged; they know that the lowest-priced bid will win so they are pushed.

I do not have access to enough information but I do have this question: when projects are late and over budget, is it because somebody has been

inefficient or it is because the timetables were never realistic in the first place? It is encouraging that the relationship between the major companies—I know that a lot of other companies are also involved—and the MoD has been so close and frank on this project so far.

Q20 Lord Howell of Guildford: On competition, I think I am right in saying that, until fairly recently, the Japanese had very strict export controls on what they could sell in the way of military equipment. Those controls were all part of their pacifist psychology but, under the late Shinzo Abe, they were lifted. Now, Japan is free to export vigorously; we all know that, when the Japanese export, it is a vigorous business. Did I hear Lucia Retter say that there are some provisions in the treaty to make this a more organised and mutual arrangement, or are they going to try to carve up the export markets? Are we going to have to be really on our toes about competing with the Japanese, along with many others, in this market?

Lucia Retter: I am just looking for the exact quote from the treaty. It says: "The Parties shall support, to the maximum extent possible, in accordance with legal obligations and regulations ... the import, export or transfer of all items and information generated within the GCAP". That is what Professor Taylor referred to as this recognition that there should be willingness to export whereby, as far as I understand it, the specifics of exactly what the export mechanism might look like—for example, a mechanism to navigate any disagreements between the parties over how or where to export to non-parties to GCAP—should be explained in an arrangement separate to the treaty. There is an explicit recognition that exports are important and that the parties will try to work collaboratively to agree exactly what they will look like. Again, I am not a lawyer, but it seems that there is not enough detail in the treaty to tell us exactly what the mechanism will look like in navigating any potential disagreements where, for example, Japan may disagree with the UK or Italy, or vice versa.

Professor Trevor Taylor: If I understand the question correctly, what has emerged from Typhoon is that an export is not something that comes out of the blue but a major marketing exercise where you have to have a lot of discussion and so on. This is the practice that has come out of Typhoon: the country that leads an export effort with the aircraft is the one that, politically speaking, looks most familiar and most suited to lead it. Obviously, on the delivery of the aircraft, the aircraft is manufactured in parts in different countries then assembled in all of them.

With this, there is a question about who would lead an export drive to Saudia Arabia or to Singapore. That might give you different answers but, looking a long time ahead, I do not think that we will see a competition between a Japanese version or British version of this. The Japanese have comparatively little expertise in export marketing for defence equipment. They learned a lot from what their lack of success in Australia with submarines; they just did not have the package of information and answers that the Australians wanted. They are relatively inexperienced at

it. They are learning but I think they would recognise that they still have a long way to go.

Q21 **Baroness Crawley:** What would you say are the major milestones in the delivery of GCAP that parliamentary committees should be scrutinising? This is a new way of delivering a major project. It is not in-house and accountability is important, so what should we as a Parliament be looking out for?

Lucia Retter: You ask about the milestones in the project. I know from public sources that a major step will come out this year, we hope: the agreement on the industrial construct. We should learn more about what that will look like this year. In 2025, we should start the development phase, which will, of course, require funding to be allocated to it; that is why we will, I hope, see an outline business case this year in order to enable the release of that development-related funding.

In the public domain, there is a timeline of 2027 for a flying demonstrator, or prototype. There is hope that production will then be able to start sometime in the 2030s to enable in-service delivery, which is due in 2035. Beyond those, there will be interim milestones in the various activities, but this is in the public domain as a timeline and those seem like the most obvious milestones.

Professor Trevor Taylor: I will qualify that a little because OBC 2—the second outline business case, which is due to go in shortly—needs to get approval. One of the issues there will be that, in getting that approval, the funding profile for this will be slightly different from the funding profile for a traditional piece of development. Normally, development starts relatively slowly then builds up, whereas, with this, there is expected to be quite a lot of capital investment early on to do the digital piece and build some other facilities that need to be built. The Treasury has to be persuaded that that is a good use of resources when it is a different cost profile from the one that it is used to seeing, but that is a British step; it is not necessarily a Japanese step.

Baroness Crawley: What is the date for that decision-making?

Professor Trevor Taylor: It is 2025. As Lucia said, we hope to get a decision in 2025 so that the development phase can start, but we have the CADMID cycle¹. The plan is to harmonise because the treaty referred to the fact that a phased approach will be agreed for the rest of it. That is not absolutely set in concrete yet, though, because each county tends to have its own approval.

One thing that I think is significant is the question of what funding arrangements will be made for this. As you will be well aware, government projects get an annual allocation of money. They cannot spend more than that and if they do not spend it they lose it, whereas there is wide agreement among the people I have talked to who are

¹ The CADMID cycle is an equipment life cycle model used by the Ministry of Defence (MOD) to improve efficiency and effectiveness across domains.

involved in this that they need to have a multiyear funding possibility; that seems sensible to me. No business does a project on the basis of an annual budget for that project. If you are going to build a factory, it is going to take two years and it goes really well, you do not say, "Stop. We haven't got any more money". You carry on because there is a sense of what the whole thing is going to cost. If we can come to an arrangement for multiyear funding, that would be a helpful sign; this may be something that Parliament wants to look out for but, of course, it weakens Treasury control over annual expenditure.

The Chair: We are coming to the end but we have one more question. It comes from Lord Anderson, who has returned to this committee; he is now on the International Agreements Committee. You are going to be brief, Lord Anderson, are you not?

Q22 **Lord Anderson of Swansea:** Yes, very brief. Clearly, we do not know the extent of the competition, the quality and the cost. How concerned are you about the market being limited? I also have a question about cost-sharing. What are the principles of cost-sharing on these sorts of projects? Can it be one-third, one-third and one-third? Is it related directly to the allocation of contracts?

Professor Trevor Taylor: That is a good question. Traditionally, there has been a simple answer: you provided the number of systems that you were going to buy and added that up. So, if you were going to buy 30% of the total production needs of the parties, you provided 30% of the money and got 30% of the work. A lot of collaborative projects went on that basis. If the partners are roughly equal in capability, that is not necessarily as problematic as when there are differences.

Lord Anderson of Swansea: Do you mean parties' differences in expertise in particular sectors?

Professor Trevor Taylor: Yes. Let me take a second on this. When you do collaborative projects, parties bring three things to the game. They say, "We will give you access to our markets so we will buy this thing when it's ready, thank you very much", so you have an assured market. They say, "We will provide money to start up this project. We will put money and capital into the development costs". They also say, "We will bring some technology. We will bring some manufacturing expertise and technology expertise". That has been the case for many years, particularly in European projects.

The package of those three things varies. In the days of Tornado, Germany and Italy brought comparatively little technology to such programmes because their aerospace industries had been run down and destroyed at the end of the Second World War, so they put money into the front and agreed to buy it. The *juste retour* principle was very appealing to them but it was expensive.

With this project, we want to do something more nuanced, so there will have to be a broad sense of expectation where contracts go to the most

able organisations, but it is encouraging that the companies themselves have built links with Japanese partners so that they have a clear sense of each other's strengths and what they can bring to the party. No one wants the *juste retour* model. Airbus as an entity started from a *juste retour* place—that is where everybody got their share of the work—but, over time, it has emerged into a “best player” organisation and is now highly competitive. We hope that something similar can happen in the defence space so that we get contracts going to the best player, but that could well be an international company. It could be a Japanese-Italian company that merges Leonardo with its Italian partner as a new entity.

Lucia Retter: I just want to add a bit more detail. There is an intention to look at work sharing across the different phases of the project—that is, not setting it up front and saying, “We’re going to go 30:30:30”, but instead asking what the work sharing will look like for the development phase and what it will look like when we get to manufacturing. It is about being a bit more open to the idea of having a renewed discussion about work sharing at the different stages of the programme, not just setting it in stone up front.

The Chair: We have to call a halt there, I am afraid, but thank you very much indeed for all your advice. We could go on talking for a long time but we cannot. Thank you so much. As I said before, we will send you the transcript.