CCAs as a Disruptive Force

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Heather Penney:

Ladies and gentlemen, good afternoon and welcome to this Mitchell Institute panel on Collaborative Combat Aircraft as a Disruptive Force. I'm Heather Penny, senior resident fellow at the Mitchell Institute for Aerospace Power Studies.

We, at Mitchell, have said it before, and we will say it again. The U.S. Air Force is the oldest and smallest that it has ever been. This capability and capacity problem cannot simply be solved by building a hundred of CCAs that are simply used as slightly cheaper, more disposable F-35s or F-22s. Military innovations are instead most effective when they're employed in novel and unexpected ways. To that end, I strongly encourage you to pick up my colleague Mark Gunzinger's report, The Need for Collaborative Combat Aircraft for Disruptive Air Warfare. We've got copies at our booth, not only his report on our website, but so is his rollout.

To discuss CCAs, how CCAs can help the United States subvert established adversary strategies and overcomes challenges that we face in the air domain, we're pleased to be joined by four incredible Air Force and industry leaders. First, we're excited to welcome Major General Scott Jobe. As director of Force Design, Integration, and Wargaming, deputy chief of staff for Air Force Futures, General Jobe leaves advanced efforts for future force design, data analysis, capability development, integration, and disruptive technology.

Seated next to him, we are glad to be joined by Dave Alexander, president of General Aeronautics Systems. GA is a leader when it comes to remotely piloted aircraft, famously having designed both the MQ-1 predator and MQ-9 Reaper. Next to me, we are pleased to have Otis Winkler from Kratos Defense. At Kratos, Mr. Winkler heads efforts to align Kratos' development efforts on systems like the XQ-58 Valkyrie with DOD and Air Force priorities. And finally, at the other side, we are happy to have Brigadier General Jason Voorheis with us. General Voorheis serves as the Air Force Program Executive Officer for Fighters and Advanced Aircraft. In this role, he's responsible for the fielding and sustainment of the Air Force's fighter inventory and development of future force programs such as NGAD and CCA.

Given how much we have to dig into, I'm going to jump straight into questions, gentlemen. So General Jobe, I'd like to toss the first one to you. As you consider future-integrated force design, how are you thinking about optimizing capability to provide the competitive advantage for great power competition?

Maj. Gen. R. Scott Jobe:

Well, thanks Heather. So it's interesting as we're looking at force design and campaign-level analysis through our wargames and other activities, CCA is one of those exemplars of something that's extraordinarily disruptive to the way we have traditionally done things. Everything from human machine teaming, what skills an Airman needs in the future, which involve a lot of data, analytics, software programming at the tactical edge, that affects the human part of our Air Force and Space force.

So there's a human machine teaming aspect of CCAs that is disruptive internally to us and also presents a lot of capability. As we've looked at things like mobility, there's also disruptive capabilities there. Infilling, exfilling forces into a highly contested environment brings you a whole new level of capability for autonomous capabilities, not just CCA. So there's a whole plethora of family of systems we can envision in the future that dramatically change the way we do business. How mission threads are closed or not closed can be affected by autonomy, not just things that are in aircraft, but also algorithms that

work on fusing data, presenting options to battle managers as they're trying to make complex decisions in complex environments.

So as we talk about disruption in autonomy, in CCAs, it's much broader than just an aircraft. It is a whole host of capabilities that brings to the Air Force. So I think it really changes, potentially, the way our capability reference our resourcing our top line in investment. It can change the shape or the slope of curves as you look at capability versus cost. So it's really disruptive of our multiple areas, and I think this is just one example of how it disrupts the way we do things.

The other part is it presents a lot of dilemmas to the adversary or potential adversaries. So now you don't exactly know the scheme of maneuver, it can be much different in much different ways than we have traditionally done it. And so it presents a lot of options for tactical maneuver and application of firepower that we just haven't been able to do before because the kind of risk levels and forced packaging that we would have to do in the past. So there's a lot of disruptive nature of things that are exemplified by a CCA capability.

Heather Penney:

Thank you. I really appreciate you mentioning about how CCAs could impact the risk calculus that commanders and force planners might employ in terms of how they can use these vehicles, the airborne vehicles, to augment other elements of the air campaign.

General Voorheis, you've been designated your role in shepherding CCA, which have been designated as a key operational imperative. Could you describe how you're rolling that out, and what your considerations are for that?

Col. Jason Voorheis:

Yeah, thanks, Heather. Also, I'd like to talk a little bit about the segue between the OIs and re-optimizing for Global Power Competition. Excited for you to ask that question because it allows me to brag a little bit about what the CCA team has done over the last two years on this program, to change how we do things in the Air Force.

I think it's probably valuable, as I start to take a step back before directly answering the question and set a little context. As the secretary mentioned last night, the OIs are really about the what, that is focused on identifying, prioritizing, modernization investments, while the re-optimizing for the DAF for Global Power Competition is more about the how. And as it relates to the capability development specifically, it's focused on how improving organizational alignment, key processes, and enterprise solutions can do two things for our Air Force.

Number one, optimize our competitive pipeline of capability to deliver at speed and scale, with a focus on speed and scale. And then number two, improve deliberate integration across historically stove-piped platforms, services, and even international partnerships. The future fight that's confronting us is a system of systems fight, requiring tighter integration, improved interoperability, and really, better data sharing across all of our weapons systems.

So with that context in mind and getting back to the direct question, what role will CCA play in re-optimizing for Global Power Competition? I'd say it's really the approach the Air Force is taking to field CCA the how, which has been really an exemplar for both improving speed and scale, and also driving a system of systems mindset. And from a CCA program perspective, I think there's a lot of ways that that has played out. I'll touch on three of them here for this panel to keep it short, although I will apologize, this is probably my longest answer that I have for you today.

But number one, the CCA program has used early and continuous teaming between operators, technologists, acquirers, and importantly, industry, to enable informed rapid and iterative requirements development and decision-making. In fact, at the start of the OIs, really, from a practically dead stop, the CCA program has developed market research, they've done operational analysis, they've done concept refinement, defined operational attributes, gotten acquisition strategy approved, and then went on contract for building production representative test articles in under two years, which is a pretty phenomenal pace. None of that could happen without the teamwork with the operators in ACC, with our technologists in AFRL, with our acquirers in AFMC, and our industry participants. And under the leadership of the new integrated capability command that was talked about yesterday, in strong partnership with AFMC's Integrated Development Office, we need to make this type of extreme partnership the norm going forward in our enterprise.

Number two, the CCA program is implementing government-owned open architectures for both mission systems and autonomy, which will do a number of things for us. It'll prevent prime and sub-vendor lock. It enables broader access to the depth to include non-traditionals and small business partners. It enables a system of systems integration with crewed fighters, other CCA's joint services, international partners. In fact, the CCA program last year concluded an agreement, tri-service agreement, United States Navy, Marine Corps, and the Air Force to collaborate in four key areas: mission system architecture, autonomy architecture, ground segments, and data links. The intent is to expand that agreement to SOCOM later this year and into international partners as we go forward. Finally, these architectures enable rapid technology insertion and rapid fielding of software-defined, platform-agnostic capabilities over time.

And then finally, third, the CCA program is leveraging competition across multiple vendor pools and increments. This enables sustained competition to increase contractor performance, increase industrial capacity, and then, finally, preserve government options going forward. The CCA program has a consortium of over 30 industry partners that are participating across autonomy, air vehicles, mission systems, and software development.

So in summary, this collaboration to drive enterprise integration, this government reference architecture to drive system to systems integration, and sustained competition at all levels to drive contractor outcomes and performance is really at the heart of re-optimizing for GPC across acquisition, the requirement's enterprise. So not only is the CCA program and operational imperative in terms of filling a key modernization gap, but it is also doing so in a way that is a model for future programs as we go forward, in terms of a focus on delivering capability at speed and scale, and delivering a system to systems integration mindset.

Heather Penney:

You're really hitting a ton of my pet rocks here. I've said for a long time, we've talked about offset technologies. I believe time is the new offset, the more iterations and the more quickly that we can go, the better the advantage will be for us. Plus, as we explore these new technologies, it gives the opportunity for us to expand the industrial base because no incumbent has a monopoly on those technologies. And this has been proven through studies and analysis. And then the integration that you're doing with the warfighter and the tight relationship you have between the industrial base, the acquisition professionals, and the warfighters is utterly crucial to ensure that we get the right capabilities to the warfighters in the right times.

Mr. Alexander, did you want to say something about the role of industry here?

David Alexander:

Yeah, thanks, Heather. So if you look at in the past traditional analysis of alternatives, it's a very lengthy process. You can go through them and they can last six, eight years, and you can come out the back end of that not feeling very good, speaking from experience.

So what I would like to applaud today is the acquisition strategy that the Air Force came up with, which was the operational operatives, which led to a lot of good detail that got laid out, a CCA program that brought in five different contractors, so they can each individually show art of the possible of what they have to offer and separate, not in a big show somewhere where everybody's going, "Well, I don't want them to see what I'm doing." So individually, five contractors, art of the possible, what can we do, how fast can we go? And that is combined with a collaborative teamwork where we actually have a bullpen of engineers and program managers, sitting right with us, and deployed with us. There's some of them out there, and thank you for staying in hotels and living with us, but the Air Force is right there with us every day. I mean, they're like part of the team. We get in arguments in front of each other, and we're just like family now. But... Well, some families.

And I just want to applaud that because I think it's sped the process by a factor of three easy. And because it's so important that we take this capability to the adversary, it's just a breath of fresh air to see it get done so quickly. And coming from industry, we don't have infinite, we got to go to the next thing if we're not going to be there. So getting it over quick is good. So anyway, thank you for this acquisition strategy.

Robert Winkler:

Yeah, so I'll just add that this idea of controlling for time that's been brought up, I think, is super important. The DOD acquisition is known for a lot of things. Speed to ramp is certainly not one of them, but in this era of great power competition, now we have a deadline. And so fielding something at a relevant timeline is very important, and we haven't seen that until very recently. And the Air Force has demonstrated, I think, with the B-21 program, for being able to control for cost and schedule while still maintaining a requisite level of performance. We've seen it in the space community with SDA and the fielding, doing things differently, doing things quickly, controlling for time and costs, but still being able to get a mission-capable system out there. And I think you're doing it now, so that we know what that relevant timeline is, we just got to make sure that we hit it.

Maj. Gen. R. Scott Jobe:

So I've got pile in here real quick. So General Voorheis talked about data and data sharing. It's another one of those disruptive areas that would've taken us probably a very long time in the old way we used do things, which is data curation and tagging of operational relevant data so that you can train autonomy in collaborative platforms in that environment. It doesn't end there because that same operational data can be used for training, briefing, debriefing, planning.

So all the people that are involved in those missions now actually have discoverable data. They can go and do analytic work on it. And I'm talking at the tactical level at places like Red Flags and Nellis in Alaska and other avenues where we do these advanced training events. It enables you to do that, and we probably wouldn't have been pushed to go as fast as we could on that level for data curation, tagging, and storage of operational data that has context.

What was the rules of engagement? What was the commander's intent? How much risk were you allowed to take? What are the objectives? What was the weather? Those are very important operational sets of data that we traditionally just hadn't collected, but you have to do that if you really want to train a digital twin, in a virtual environment, to actually expedite and do iteration on this kind of capability.

Heather Penney:

Thank you. My digital engineering paper will be coming out in a couple of months to be looking for that. I appreciate the advanced marketing, but one of the things that's interesting to me about the data curation and collection is, and this is just an open-ended question for folks to think about, how could we then utilize that data as a means to accelerate the cycle of TTP development?

Maj. Gen. R. Scott Jobe:

Yeah, it's a 100% what you will do. So if you had all the last 30 years of every large-force exercise we'd ever conducted, and you had data tagged and curated, you could actually go in, revisit, and relearn those things in a way we've never been able to do before, right? It's insufficient to have a slide deck that you brief on as a mission commander at a Red Flag, for example. There's no way to capture that quantity of data. How many shots were taken? What were the loss rates? What were the kill ratios? What risk did we take? Those things, they're just lost. They're either in your memory as a human being and that's how you do that, and you pass it on through writing of TTP manuals, training, and teaching.

It's basically teaching by communicating, like we have done since the dawn of man. In this way, you can actually go back and recreate all of that data, and actually, fly it in 10, 20 times speed, and then actually pull analytic work out of it, which now can affect your tactics. Where we line of rest in 25 miles? Or do we need to go out to 35 miles? You can actually play with that data in a way that you just can't do right now.

Heather Penney:

And respond more quickly to adversary behavior as well. So for our industry partners, what technologies do you see will be necessary for CCAs?

David Alexander:

I will go. Yeah, all right, I'm going to step on anyway. So to bring up the point of TTPs, I just want to reiterate the importance of open mission systems, open HMI control, and the ability to change that quickly because if you can't change that quickly... Because these TTPs that you'll be coming up with are not training the human, they're training the autonomy.

And so if you can't rapidly change your sensors, and you get bogged down in safety process, I think the program will fail. So I think it's critically important that we make sure that we can fly safe without holding anybody at risk and make rapid changes to the mission systems going forward. It's going to be essential to the program, otherwise we're just going to get stuck. And 10 years from now, it'll be out of date, so very important.

Heather Penney:

Yeah, everything from software to modular upgrades.

Robert Winkler:

Yeah, I agree, but I'll also add the fact that for the last 50 years, we have built our aircraft around existing weapons. So from the AIM-7 to the AIM-120, it all has to fit. And specifically, as you moved into the stealth realm, it all has to fit into a bay. And so we designed, I would argue, potentially sub-optimized to be able to fit the current weapons that we have.

I would say that for CCAs, we need to design weapons that optimize for the CCA outer mold lines that we're going to have. So you can have platform-agnostic, software-driven capability, but that can reach

out and touch the enemy. And the same thing goes for our sensors. Our sensors currently, right now, are the best in the world. All of the manufacturers that make from a F-35 radar to EO/IR capability off of an MQ-9, you name it, we make the best sensors.

We also make the best weapon sensors, fantastic. What we're missing though is controlling for cost in there. And so if we want to have a reasonably costed aircraft, we can't go with the exquisite sensors, but we want that same capability. So we have to figure out a way to bring the sensor cost down, maybe give up a little bit of performance, but bring it up from the level that you would get from a completely expendable weapon. So I think those two things are some technology trade-offs. The United States of America knows how to build airplanes. We've proven that over time. We just need to optimize for this role of the CCA.

And the second thing I'll add for that is we know how to build manned aircraft, and we know how to build unmanned aircraft. We got to make sure that we're building for the right thing. So if you try to build a CCA, like a manned aircraft, it's going to cost like a manned aircraft. MQ-25, if it's a Navy program, so I don't feel like I'm going to throw any disparaging remarks out there, but it costs an awful lot of money because it was built like a manned aircraft. So it costs about $8 million less than a KC-46. They're both tankers, that's fine, but one's a lot smaller than the other. If we optimize for unmanned aircraft, we switch that cost equation, and we bring that down to a level that becomes very affordable.

Heather Penney:

Especially if we want to be able to exploit the change in risk calculations that planners and calculators need to be able to employ for CCAs. So you said the cost word, let's open up that Pandora's container and talk about cost. General Voorheis, I'm going to toss the hot potato over to you to describe cost. And how do we control for that? How do we make those decisions?

Col. Jason Voorheis:

Yeah, I mean, from a cost perspective for CCA, one, that's definitely one of the top two or three design considerations and drivers for the program. The secretary has already indicated that CCA increment one, in terms of an affordability design constraint, is going to be less than a quarter to a third of the price of an F-35. As we look at future increments, and General Jobe may have some thoughts on this, we're going to be going after potentially different operational attributes and that will drive different cost targets, as we go forward. So I think the spectrum opens up a little bit when we get into increment two, we are planning to start initiating contracts for increment two, concept refinement, where we'll get into some of those details in FY 2025.

Maj. Gen. R. Scott Jobe:

Yeah. So as you look at this and approach different mission sets with a similar kind of capability, call it an autonomous capability that CCA kind of represents, then you open up a whole lot of different capabilities. You can explore achieving and closing those kill chains on, and you can potentially do it in a much more cost-effective way, cost-per-effect.

So one of the things that we're looking at, in our analysis, is if I can provide standoff capabilities at a lower cost vehicle of delivery, and I can deliver more mass that way, then it solves several things, right? It solves part of the mass problem, part of mission-generation problem. It also mitigates a lot of threat because you can stay further away from the threat. And then if the vehicle that you produce to deliver mass effects actually has a much different set of attributes and characteristics, automatically you can have trade space in the cost.

And so then you can have that discussion between concept refinement, operations, the analysis in industry on making those trades: trades in airspeed, altitude, kind of what avionics or sensors it has on or doesn't, right? I mean, you could conceivably have a fairly simple flying tractor that shoots cruise missiles kind of thing that doesn't have a whole lot of advanced systems on it. That's just an example of something you might be able to do. Now, if it doesn't close the kill chain or it's not sufficient, then of course you add those things on that you need to get the mission done, but that's one of those things.

The other part that I meant to mention earlier on disruptive part of kind of CCA is autonomy and aircraft changes a lot of different things. For example, our pilot production, we've been struggling to keep up with in the Air Force. Actually, it's a global problem. So people have got to start getting comfortable with aircraft being flown by autonomous capabilities to include our national airspace, which is going to be a huge challenge for us. That is not something that's happening anytime soon. We have to engage with our FAA partners on doing that. But if you made some of those trades, you can actually produce a lot of capability without necessarily driving a cost, assuming you can get the mission down, of course.

David Alexander:

Yep. Just piled on a little bit on cost. So I think it's really important that you do your wargaming right up front, which I believe we have, to understand your point design of range and speed. And range and speed's going to size the platform for you. It's physics. Everybody on this stage going to have the same physics that they all got to deal with, and then the size of that platform is going to have a cost associated with it. Again, based on just legacy of dollars per pound.

I think that's the first thing to get right, is that range and speed when you're sizing this platform. But that's not the whole story. The whole story is there's a tale behind it on making sure that you have, at every step, pulled out all the manning possible for launch and recovery, where you're just down to a minimal crew, no ground support equipment, preventative maintenance to make sure that the downstream pieces are not littered with a hundred people to get an unmanned aircraft flying.

But it's just a few, take advantage of the autonomy, and automatic takeoff and landing, Agile Combat Employment, all these things that will benefit the program cost, which I've seen go through the years of what it takes to put airplanes all over the world. And if you can put them all over the world with a minimum set of equipment and a minimum set of scheduled maintenance, these are the things that I think you really should focus on as well. So the point design in range and speed and making sure the back end isn't filled with a bunch of people, parts, spares, and starter carts, you name it.

Heather Penney:

And that's an excellent point because the feasibility of employment, as we are in theater, is going to be crucial because if we can't get the people sustain them and protect them to employ the CCA, then it simply isn't realistic and it should drive different requirements into the design.

I like to think of CCA because I talk with a lot of laypeople about autonomous combat aircraft or collaborative combat aircraft, and everyone thinks of Ukraine and they think of drones, which is an important consideration. And I believe that we've had panels earlier within this conference on that size, that small scale of drones that we could employ and how they might be used both offensively and defensively, and how to defeat them.

But we also have affordable disruptive CCA, which is what we're talking about today, as well as family of systems, which I think, General Jobe, you had spoken about the family of systems and the more exquisite capabilities that might be driven to make that family of systems effective. It's one thing to have affordable CCA act together as a swarm and collaborate, and that will have a different capability and

cost driver versus what might be necessary to successfully partner with a penetrating asset like NGAD or B-21.

General, would you like to speak a little bit more or elaborate more on the different operational use cases or categorizations, as you think about CCA moving forward?

Maj. Gen. R. Scott Jobe:

You want me to go first?

Col. Jason Voorheis:

Yes, sir.

Heather Penney:

Throw them under the bus.

Maj. Gen. R. Scott Jobe:

So yeah, as you look at the tactical problems that you face, especially in great power competition where you have a peer adversary or near peer adversary that can bring some fairly advanced capabilities to bear, not any one single solution necessarily will solve the problem. And so that's since the family of systems discussion, the system of systems that General Voorheis talked about, which is critically important because you can now bring asymmetric capabilities where they have strength. You go against their weakness, where you have weakness, you then put that into a different area so that you can now have a more robust option set on the table for you. Especially for our Airmen, they're actually conducting operations so they can make decisions real time on how to employ and what risk they can assume and not, and then still achieve the mission. So that's why I think the family system is so important.

There's always going to be a balance of the kind of capabilities you need, depending on what an adversary decides to do. So they get a vote, you don't get the only vote, they get part of the vote. And so, at times, you'll need to have very, very high-end capabilities and the very best that you can bring, which, by definition, is probably not going to be a lower cost kind of capability. But you're going to have to have those real conversations, discuss that, and look at your analytics, and actually see yourself in the mirror that you know have to do certain things that are more costly, but then you can offset in other areas where you can bring to bear other capabilities. So I don't know where he's going to hit on that.

Col. Jason Voorheis:

Yeah, I think the only thing I'd add to that is from an acquisition perspective, going back to the architectures, and some of the agreements that we're making across services, is to make sure that these assets have the most flexible modular characteristics in their design so that they can perform within a family, they can perform outside of a family, and they can flex to the operational mandate that they have and the threat evolution over time, so that every dollar we spend on a CCA has the most use cases for that CCA possible.

Heather Penney:

I think it's really exciting what you're talking about regarding the modularity, interoperability, and operating as a family of systems, much like weapons where we should be able to go faster in terms of fielding new capabilities and new designs, whereas manned aircraft typically take us much longer. CCA

have the potential to have rapid iterations of design improvements. And again, this gets to time is the new offset.

I'm going to go back to Agile Combat Operations and Employment that, Mr. Alexander, you had brought up regarding fielding and operating, the need to be able to operate these aircraft out of potentially austere operations, because we'll have to be able to rapidly execute those operations from dispersed locations. This is for the whole group, what considerations are being included in the development of CCA concepts that minimize the equipment and personnel footprints?

David Alexander:

Yeah, I go. So foremost, downrange launch and recovery is Agile Combat Employment, which gives you the ability to not only be austere, maybe your main operating base, but also the ability to hop from runway to runway on the fly, if you will. So we're doing that today, and the U.S. Air Force is going there right now as we speak on the MQ-9 Alpha. MQ-9 Bravo is being delivered with that concept as the baseline. And the Army Grey Eagle program also got this Agile Combat Employment going forward. So it is the way of the future. You don't need all that ground support, heavy equipment out there, and the people to maintain it, and all the costs that goes with that. I think that's really critical going forward.

I would say we've talked about loyal wingmen, and maybe got an F-15 with a couple CCAs, and they're going to business, and you have to stop and think, I don't think we're that far away. In fact, we've been doing this on our Skyboard program. We're not that far away from the autonomy of half a dozen or a dozen CCAs going down range first on their own, meshed. Now, they're talking to each other. There's no human in that loop. There's human on the loop. So they're talking to each other on who they're going to target and who's going to shoot that target 50 times a second. And I think that is, to me, feels easier than loyal wingmen. You got to have the first step before you get to the next one.

So I really think we need to be careful that we don't get ourselves cracking into another platform's OFP. And I'm just saying that because if you want to keep the cost down and keep the program moving, those manned platforms, they go in there and change them, it's not going to be easy. And I don't think it will make the program go as quick as we want it either. So anyway, I think Agile Combat Employment is huge, how you design the airplane. So how you maintain it will be huge for keeping the cost down, and how you actually fly it so you don't grab other programs and start cracking into those. They're of OFPs because that won't go quick either.

Robert Winkler:

So Heather, you mentioned the Mitchell Wargame that just concluded, right? And so there were a lot of people in this room, I think, but many Air Force operators, as well as planners, participated in that. One of the key takeaways was where the aircraft were launched and recovered, there were three separate teams all doing different mission sets, but the schema maneuver that each one of the teams came up with was relatively similar. And that was we want to be located inside of the first island chain disaggregated, spread apart to give the enemy a much harder targeting solution, operating off of very austere locations. Or being air launched, so either runway-independent or air-launched and recovered.

And what it did in the wargame itself was it completely trashed, for lack of a better term, the enemy's schema maneuver and strategy. It disrupted their ability to do DCA. It disrupted their post operations, and it made our post operations, going back in the other direction, in order of magnitude, more effective. It made manned aircraft more survivable, and unmanned aircraft more survivable. And it reduced the overall tanker requirements because, for us, we were able to launch when the enemy presented itself as opposed to marshaling, refueling, and then pushing in.

So it seems, at least in this one wargame, that the ACE concept was proven out, worked exceptionally well, and gave us very good flexibility, a bounce of back and forth between main operating bases, with the range to fly in, recover from the austere locations, and then go back out as we needed to. So I found that all three teams did that. It was very fascinating. But in order to do that, you have to build in this logistics internal to the systems from the ground up. And I think that that's happening, that holistic approach of the operational design is working through that. Those trades are being made by industry right now, but if we do that, it's a potentially disruptive and game-changing opportunity.

Heather Penney:

Thank you again. So you can read Mark Gunzinger's report on CCA's Disruptive Force. It's at our Mitchell booth by the Aurora Ballrooms.

So we're down below five minutes, gentlemen, it's time for the lightning round. I'll give you two options. One is either tell us a win, give us a win that you've had regarding CCAs, because it's important for the war fighters to understand that these are real aircraft. They're flying today. This is not a PowerPoint unicorn presentation that you're going to someday hopefully see fielded in 2035. So that's one option. Your other option is any fade-away shots. What do you want the audience to know before they leave? General Voorheis, we'll start with you.

Col. Jason Voorheis:

Yeah, I'll start. I guess, what I'd do as a parting shot is just say Air Force leadership has placed a high priority on funding the CCA program. In terms of wins, the CCA is funded in the FY 2024 President's Budget. In terms of the OIs, the largest investment across the fight-up in the budget, we've got $390 million in 2024, approximately $6 billion across the fight-up. We have five companies on contract right now, Anduril, Boeing, General Atomics, Lockheed Martin, and Northrop Grumman. We are working really hard to exercise two option awards for CCA, possibly three, we can work out some funding issues. And then finally, we're on a track to get to incremental and production in a couple of years here. So talking about speed to ramp, this program is really focused on that, and leadership is prioritizing this high.

Robert Winkler:

I'll take both. I'll go fast. The wins would be the fly-test fly that's going on right now down at Eglin, to be able to build out the autonomy faster and to be ready with the autonomy when the aircraft show up, meld them together, and get them out there so we can beat China. And then the fade-away jumper is time is of the essence. We know what the Davidson window is, we know where that is going to be. We know where we need to be ready, we need to get there.

David Alexander:

Well, I'll just add that we're just super thrilled to be part of the CCA team. I think, if you look at General Atomics being privately held in our DNA of moving quick and bringing a lot of platforms to bear, it really fits within our wheelhouse. So I can't tell you how energized the engineers are, and the program managers, they really see this program as the future. And we're just super thrilled to be on the team, and so thank you very much.

Maj. Gen. R. Scott Jobe:

I'll take the win. So the win to me is a cultural win. You had an innovative Air Force and Airmen that wanted to complete missions and deter, compete, and potentially win our wars if we need to do it.

Some would say, "I hate looking at pilots," and tell them, "I don't want them flying airplanes again." I would say, "I want to keep them alive." And so we had no flinch from any of the operational community about culturally absorbing this capability, that potentially could threaten pilots flying aircraft in the future, because what we want to do is what's best for our Air Force, first and foremost. And we owe it to the nation, we owe it to the country, to make sure we deliver the best capability, and we can actually fight and win America's wars. To me, it was a cultural win, Heather, so thanks.

Heather Penney:

It's important that as we look towards CCAs and think about the operational concepts, how we will employ them, where we need to have them. We cannot treat them as if they're just another aircraft. And we're doing the same old things just with new things because then we will lose the opportunity to truly disrupt the adversary, force them to go Winchester, let's deplete their weapons magazines, mess up their game plans, so we get them off their game and outside of their OODA loop, and fundamentally change the risk calculus and increase our mass.

So there are important things that CCAs can do for us, and thank you gentlemen for being here today to describe their attributes, how you're doing in the programs, and the vision for going along. It's going to take all of us. So thank you again for joining us today for CCA's Disruptive Force. Again, Mark Gunzinger's report is by the Mitchell booth, and have a great aerospace power kind of day.