The Aerospace Advantage Podcast – Episode 208 – Compass Call: Operator Insights – Transcript – November 2, 2024

Heather "Lucky" Penney: [00:00:00] Welcome to the Aerospace Advantage Podcast, brought to you by PenFed. I'm your host, Heather "Lucky" Penney. Here on the Aerospace Advantage, we speak with leaders in the DoD, industry, and other subject matter experts to explore the intersection of strategy, operational concepts, technology, and policy when it comes to air and space power.

Well, folks, thanks. We're back here, and I'm, again, reporting on the road from an aviation maintenance facility. So, if you hear jets in the background, just know that that's the sound of freedom. We're here today to talk about Compass Call. And it might sound like an esoteric or cryptic term to the average person on the street, but if you're a combat airman, this aircraft can be the difference between mission success or failure, making it back to base safe, or getting shot down.

I mean, really, at the heart of it, Compass Call is an electronic attack capability the Air Force actually fielded in the 1980s. And the idea was simple to provide long range standoff jamming to degrade and disrupt the adversary's [00:01:00] ability to harness the electromagnetic spectrum. Especially when it comes to command-and-control communications, navigation systems, and radar, which is like a lot of our use cases.

So, if taking away the enemy's ability to harness information throughout the battlespace and their ability to fight rapidly erodes if they don't have access to the electronic magnetic spectrum, the EMS. Compass Call presents our forces with opportunities to project offensive power at the right time and place, not only to degrade tactical threats, but also to prosecute core campaign objectives, like striking strategic targets.

Compass call renders an enemy blind, deaf, and dumb for key windows. It's a huge capability, and the system is housed on a handful of C 130s with the 55th Electronic Combat Group at Davis Monthan Air Force Base, and it can collaborate with other electronic attack capabilities like EA 18 Growlers [00:02:00] and F 16CM.

Like any mission, it's not just about the gear, but it's also the highly trained, mission-ready airmen who really make the effects happen. So, this capability has evolved a ton. Like I said, it was fielded in the early 1980s during some of

the tensest periods of the Cold War. And airmen flew it in numerous conflicts throughout the 1990s.

And it was a core asset over Afghanistan and Iraq. However, each one of these eras really saw different operational challenges and circumstances, which meant that Compass Call had to evolve a lot. And this change continues through today with a new Compass Call system, the EA 37B, that's set to enter the inventory to replace the Mighty Herc.

So, with all of that laid out, I'm really excited to jump into today's episode. We're going to chat with Colonel J. R. "Smitty" Smith, who just took command of the 55th Electronic Combat Group. We're going to work to lay out a comprehensive picture [00:03:00] that describes the mission, where it's been, what's happening now, and where it's going.

And no one is more credible than the leader who walks the flight line and engages with the mission and does the mission every day with his airmen. Colonel Smith, welcome. We're really excited to have this conversation.

Col Jeremy "Smitty" Smith: Hey, thank you, Lucky. It's so good to be here. And we're talking about a tool, the military and civilians alike.

We use every day without giving a second thought to the importance in our lives. Now, like you've already mentioned, it's the electromagnetic spectrum, or we'll talk about it as the EMS. So, civilians, they depend on the EMS for so many different facets of our lives. Likewise, militaries, we also depend on the EMS for everything from targeting, to command and control, to combat search and rescue, and that list can go on and on.

Heather "Lucky" Penney: So, Smitty, I tried to lay out a big vision of Compass Call, who you guys are, what you do, why you matter within the battlespace. How would you describe the mission when you talk to folks?

Col Jeremy "Smitty" Smith: Right, so a primary mission of the Compass Call is counter [00:04:00] communication. I'll give you an adage from probably 20 years ago when I tried to explain to about 60 First Graders what the mission was. They were all huddled around an EC 130H during a show and tell.

Heather "Lucky" Penney: I want to take that to my show and tell.

Col Jeremy "Smitty" Smith: Sure. I asked one of the children to start telling a story to another child that was standing about 10 foot away and just speaking a

normal voice. While that storyteller was speaking, I directed the other children, about 58 of them, to start shouting as loud as they possibly could.

Now, as you can imagine, the message was not received, and this chaotic scene serves as a great analogy for a Compass Call's mission. We use our state of the art jamming capabilities that allow us to overwhelm an enemy's communications, and that leaves them in a substantial disadvantage to receive critical information that they desperately need.

Compass Call creates an enduring advantage for our friendly assets, or blue forces. By degrading our adversaries or Red Force's ability to send and receive [00:05:00] data that they require to understand the current operating environment. This is the purpose of Compass Call, to disrupt enemy command and control communications and limit adversary coordination that is essential for enemy force management.

Compass Call's mission spans the competition continuum. Our combat credibility is the foundation for deterrence. We train to the toughest threats. We set conditions and competition to prevail in conflict.

Heather "Lucky" Penney: So, thanks. I mean, like we really appreciate that introduction to your mission. That is the bread and butter of really how we paralyze adversary forces.

So, was there a particular sortie that blew you away in your early years regarding the power of the Compass Call mission, what you can do and why it mattered?

Col Jeremy "Smitty" Smith: Absolutely. So, I'll start with, "So there I was."

Heather "Lucky" Penney: As any good story starts, right?

Col Jeremy "Smitty" Smith: That's right. So, I was in the skies over the most rugged mountains imaginable.

I was flying as fast as the Hercie Bird could travel, [00:06:00] and we were going to support a TIC or a "troops in contact" situation who were perilously close to being overrun by a much more numerous enemy who knew the mountains much better than those army forces that were on the ground. So, I was a First Lieutenant, I was a new mission crew commander and it dawned on me that I was also responsible to allocate resources necessary to provide electronic attack effects on that battlefield.

So, the crew that I was with, they were exceptional, but it did dawn on me that pivotal day that are jamming effects change the battlefield conditions and enabled our troops to return home alive. The effects, it did not kill the enemy. It did not destroy their equipment. Rather, our effects protected our troops that were in harm's way. And it's for this very reason that there is no other military community that I would rather be a part of than the 55th ECG.

Heather "Lucky" Penney: Thank you for making that real. I mean, it's difficult to appreciate unless you're actually done the [00:07:00] J. O. B. How important Compass Call is because if you're disrupting their communications, their command and control, they're blind. They're dumb. Their behaviors are not coordinated or synchronized. They might not even be able to pass targeting information. And that is key to creating seams and opportunities for other warfighters to be able to exploit to go in to get their effects, get their jobs done, and put warheads on foreheads.

So, what would we see if we were out on your flight line there at Davis Monthan? Would you mind walking us around the aircraft and your facilities?

Col Jeremy "Smitty" Smith: Yeah, you bet. So, if you were to visit, it's a Compass Call campus. Several different buildings from, a couple different ops units. There's a headquarters, there's a, a couple maintenance hangars.

So, a large campus on Davis Monthan. I think as you came into the campus, you would first notice there's a large EC 130H Static that's on display that greets visitors. It says just off the berm of the only road that runs to and from the campus. It looks unwieldy [00:08:00] large because it's not typical that it would be sitting on the side of a road.

Uh, but this one elicits a deep sense of historical importance for everybody that understands the power of that aircraft. Now you're with the Mitchell Institute and you are absolutely going to get red carpet treatment, not when, but, when you actually do visit. Come on out. We want to give you that tour.

You're going to notice first and foremost, the passion that these airmen have who do the job so well every day. There's an excitement, not only because the capabilities of the aircraft, but also because there's a lot of momentum behind electronic attack right now. Yeah, senior leaders, you know, they realize that EMS will play a decisive factor in future conflicts.

And they are excited to see how our years of Compass Call combat experience, combined with this modernization effort that's ongoing with the EA 37B, will enable us to deny our adversaries the ability to operate effectively in the EMS.

Heather "Lucky" Penney: Well, it's about time, after the end of the Cold War, when Soviet Union [00:09:00] fell, we really sunset all of our electronic attack EMS capabilities during the 1990s. Thank goodness Compass Call survived all of that. And so it's really important in my mind that we, that we prioritize what your mission area brings to the broader fight, especially when we put that in context, not only with, in a peer fight in China, China, China, right?

Because we're now dealing with their strategy of informationized warfare or intelligentized warfare. What you'll be able to do in that scenario, as well as what we're seeing in other areas of the world. And Ukraine and Russia is just one example. So, any mission asset that's tied to the electronic magnetic spectrum, is challenging for normal folks to understand because it involves a complex web of integrated capabilities.

And, I mean, the EMS, it's invisible, right? So, something might look like a black box, but it's really the heart of the mission. A lot of your team members are [00:10:00] involved and I really want to focus on the human element because that really is crucial. The human cognition, the experience that warfighters bring to the battlespace and to their unique missions, I think is really an essential element of what creates an asymmetric advantage for U. S. forces.

And you touched on this earlier, describing your mission, but can you help us dig a little deeper and understanding the broader enterprise of Compass Call? I mean, your craft is loaded with mission systems, and you've got a sizable crew and you might be partnering and collaborating with other capabilities.

Col Jeremy "Smitty" Smith: Right, so, yeah, you're right. The challenge is complex because the integration opportunities across the enterprise are truly endless. You know, inherently, Compass Call, it is an electromagnetic fires platform. And as you said, our mission systems enable us to work with and bolster the effectiveness of virtually any other military asset.

So, our ability to integrate, integrate across platforms, [00:11:00] and then with the joint force, it creates dilemmas for our adversary. That's our whole purpose. It gives us a substantial advantage in the future fight. And so what does it look like in practice? So, layered effects in support of a striker, a bomber operation, de confliction across the EMS to enable friendly assets to maintain the decision

advantage, and then the delivery of precision effects against specific adversary capabilities.

The ability to do this is, it's not haphazard and it rests on the shoulders of our exceptional airmen who are building enduring advantages and capitalizing on second to none innovation base. So Compass Call, we have an analysis and targeting team. Their role is to conduct in depth research and they analyze and enable us to be the most capable electronic asset in the DoD.

Ultimately, I think that our most crucial element, [00:12:00] that no adversary can replicate at scale, is absolutely our airmen. So, their ability to think critically, their culture of ingenuity and their ability to, when called upon, step up and lead at any echelon across our force. They are our greatest advantage, for sure.

Heather "Lucky" Penney: Yeah, and you know, I really like the fact that you brought up your analysis and targeting team, and also how you coordinate layer effects to turn things on and off, because we clearly can't be jamming ourselves. There's limited space, within the electromagnetic spectrum. And also, you're having to think about this in terms of electromagnetic maneuver as well.

Not only in time but also in azimuth and axis. And so, I don't think it's possible for us to really appreciate how complex and how essential your mission is. And the way that your airmen understand that. The electromagnetic spectrum is not just from basic denial and like noise jamming, but every technique that you [00:13:00] have across all of your frequencies and across our systems and the adversary systems too. That's crucial.

But, you know, things have evolved since Compass Call was first fielded in the 1980s. I mean, right now, now, you know, the Herc is, it looks similar to the airplanes that first fielded this capability, but your systems, your operator training, and I have to assume your tactics have evolved a lot.

So, given those conversations that I'm, you have to have had with your graybeards and folks that went before you, can you share with us how the mission has changed?

Col Jeremy "Smitty" Smith: Yeah, you bet. So, thinking about the EMS at large, it fundamentally, it has not changed. You know, it remains a war-finding domain and is governed by physics.

However, the technological improvements that rely on the EMS continue to rapidly advance. And our tactical approach and operational concepts have also evolved to keep pace with the emerging technology. So, our force development, [00:14:00] it's accelerated over the decades to factor in advances in technology, and it's both the space and cyberspace domains.

So, consider stealth offensive and cyber effects that are defensive in nature, information warfare, artificial intelligence. Today's battlefield is immensely more complex and dynamic than when the program first started.

So, we must remain keenly aware of where the world is and, by extension, where the enemy is to retain our combat edge.

Heather "Lucky" Penney: I appreciate that because, as you said, your mission has not changed. That's enduring, and, to use an analogy, you know, air superiority and air dominance. That mission is enduring as well. But how we achieve that can evolve and should evolve based off of what technology is able to offer us.

You know, a huge outlier, though, in this history, is Afghanistan and Iraq. You know, Compass Call was designed to confront the Soviet threat, and we're back to that peer focus now, but we've also got [00:15:00] 20 years, of focus against this unconventional set of adversaries. I mean, I remember when I was flying in Iraq, that was a very different job that you were executing in terms of what your focus was for the threat. You were clearly super busy in those years, you flew nearly 7,000 sorties in CENTCOM. Can you describe that mission focus and how the systems and the crews evolved to support this? Because it was a big divergent from the Soviet Union.

Col Jeremy "Smitty" Smith: Sure, and likewise, I grew up during the CENTCOM era of mass deployments and the mission focus skewed heavily towards counter communications. However, it was really the same mission we were always focused on, and that is kill chain disruption.

The biggest difference between the Cold War tactics and COIN were the characteristics of those kill chains that we were aiming to disrupt. Another significant difference was, the strategic warfare component of the Cold War where senior political leaders, [00:16:00] they drove macro policies to avoid nuclear war.

When we were in Afghanistan and Iraq, military leaders, they were given the authority to lead and make decisions in a very fluid and chaotic environment.

Where various national and international actors, they all desired different outcomes. Actionable intelligence became the linchpin for COIN operations.

Now, Compass Call evolved to be extremely agile and dynamic, adapting to battlefield conditions to action evolving intelligence. Our experience supporting CENTCOM operations demonstrated that we could and would wage war for extended periods of time and shape the battlefield in our favor.

Heather "Lucky" Penney: Well, part of what my lesson learned from, what you all did there is how innovative your airmen are, how you were able to improvise and quickly adapt to those adversary kill chains. I mean, going away from something like the Soviet Union, electronic, magnetic spectrum capabilities to [00:17:00] jamming cell phones and things like that. So, it really shows how the technology may have evolved in the means and methods of how they sought to execute kill chains and then, therefore, how you countered that, really is a cat and mouse game.

And it sounds like, well, I know that I was glad that y'all were on our side, but now we're back to the future. And we're asking airmen to focus on major peer threats again.

We talk often about the pacing challenges presented by China, but Russia is also showing that the electromagnetic spectrum is hugely important as they continue the fight in Ukraine. So, how is this now shaping the definition of your mission and how you go about doing it? I'm guessing the effects that you're looking to achieve, they've got to be a lot different than what you did over the last 20 years.

Col Jeremy "Smitty" Smith: Sure, and just like the shift from Cold War to counterinsurgency, the modern era seeing a drastic evolution in the characteristics of those kill chains. Now, more understood and described as kill webs, it's a complex set of command structures, TTPs, [00:18:00] hardware, software, and they're all working in unison to do one thing, and that is to prevent us from completing the mission.

Furthermore, I think during COIN, we enjoyed nearly total spectrum dominance, and that led to a reliance on those EMS enabled capabilities like radar, comms, ISR, etc. Now, not only do we have to deal with adversarial actions to deny our spectrum use, we also have to figure out how to smartly deny red force spectrum without hindering blue capabilities. So, Compass Call finds itself squarely in the middle of that dilemma. And is a fundamental aspect of our mission.

Heather "Lucky" Penney: Well, it's going to be a lynchpin if you ask me. Especially since, so we've mentioned this before earlier, and we've talked a lot about it on this podcast and at Mitchell about, the Chinese concept called informationized or intelligentized warfare.

And it all centers on the idea that, if China's able to deny the U.S. ability to understand the battlespace, to command-and-control forces, to flow [00:19:00] data and targeting, that they'll be able to collapse our operational systems. And you mentioned attacking blue capabilities while preserving space and within the EMS. For Blue capabilities. How does Compass Call look to guard against falling victim to China's attacks while also seeking to do the same for the adversary?

Col Jeremy "Smitty" Smith: I think first, I should probably explain that there is a significant gap between a simple idea of denying command and control and the actions that are actually needed to successfully deny command and control.

It's east from west, and we encourage every one of our operators that are here with Compass Call to lean into that challenge. And we know that every plan it's not going to survive first contact as we design it. So, that's how we train. We train to the toughest threat that our force might face.

We give our air crews the confidence to fail forward, to utilize lessons learned in ways that shape our warfighting perspective, and that is why I truly believe gives us another combat edge. [00:20:00] Another advantage that the United States military has is that we are combat tested. Consider the lessons that we learned from the Cold War, from the Gulf War, from OIF and OEF, and now we're laser focused on Great Power Competition.

I think the PLA may aspire to gain information and decision advantage, but they do not have a proven track record of operating in this battlespace. When communications are degraded or denied, or when command and control is targeted, the U. S. military is prepared to enable lower level decision making.

So, yes, we know that we will likely have to operate it in a comms-denied environment, but we, unlike our adversaries, encourage decentralized command and control where our lower echelons are empowered to make decisions and lead.

Heather "Lucky" Penney: I would argue that the culture that, you're developing with your airmen, one of innovation, improvisation, leaning into that

challenge, also empowers you because you're in the [00:21:00] forward edge of the battlespace.

And if you're familiar with, well, you are clearly familiar with the EMS operations, but proximity gives you some advantages that you sometimes don't have when you're operating at those distances. So, how does the nature of the threat environment change things for you and your crews? Um, you know, I talked about how important it is to be in that forward edge of the battlespace, and I firmly believe that.

We clearly have enjoyed total control of the sky for the past 20 years. It was a very permissive environment, but that's no longer the case, either in the Pacific or in Europe.

Col Jeremy "Smitty" Smith: Right. And the key difference now is conflict and competition, it's not limited to just a physical domain anymore. We must now contend with warfare across a virtual domain, cyberspace, while also addressing an adversary's cognition of the entire battlespace through information warfare.

You're right. Now, we must determine how to secure, maintain, battle manage, and maneuver across the [00:22:00] spectrum. The EMS we've already talked about it, but it touches every physical, virtual, and cognitive domain, and the world has become increasingly reliant on access to that EMS. I think how we compete and engage in combat in this environment has become more important now than ever before.

And this is how that threat environment has changed.

Heather "Lucky" Penney: Yeah, and as you mentioned, the capabilities that you bring to our broader force, battle management isn't simply about battle managing, kinetics, you know, bombs, it's also going into the future about battle managing information and battle managing, um, electronic attack and the effects that you all bring to bear.

And again, that's why I think your analysis and targeting team is brilliant. And the judgment, the human judgment, and experience that your team will be able to apply to this future is crucial, so Smitty, you just took command, and this question goes a little bit before your time, um, at the unit, but how do you think your predecessors helped the [00:23:00] Airmen of the Compass Call community evolve their thinking, to return back to focus on, peer fights?

Col Jeremy "Smitty" Smith: Yeah, so, my predecessors, they really were excellent standard bearers to keep our crews focused on developing themselves on the fundamentals of airborne electronic attack.

Um, however, what really struck me initially was the vigor and the enthusiasm that this new generation of operators pour into this mission. You know, we, as old heads, we commonly think, oh, that new generation, we did it right and they don't. But let me tell you, Lucky, my predecessors did a phenomenal job to empower and encourage our youngest airmen to fight that war in their minds.

Every jammer in this group approaches their job with intellectual curiosity. And focused efficiency was led, which has led to great strides in tackling these aforementioned challenges.

Heather "Lucky" Penney: It's funny you mentioned it's like the longer it's been, the better I was, right? But I, I take a look, I take a look at the airmen today, and I was never as good as they [00:24:00] are.

And it gives me faith, especially, like you said, with the curiosity, the passion, the vigor, the professionalism that they bring to the job. It's important that we equip them to be successful because that's where we could fail is not giving them the tools that they need. And if, it doesn't matter how good our airmen are, if they don't have the equipment, the capabilities, in the capacity necessary to be successful, we're setting them up for failure.

And one of the things that concerns me is the scale of the Pacific Theater. It's huge. And the Compass Call fleet isn't that large, and I'm concerned about plans for the Air Force for how many they might buy of the E A 37B. Major distances will stretch the force thin. Not just the ones that you have, but the ones that are unprogrammed. What are your thoughts on that?

Col Jeremy "Smitty" Smith: Yeah. So, I think that every era of American military history is earmarked by a seemingly insurmountable challenge only to be overcome by grit and [00:25:00] creativity. So, this is our current mountain to scale. It starts with a solid understanding of the challenges that are laid out in front of us.

And on that front, I think we're working to do what we can to cultivate the thinking required of every airman for this area of re-optimization that is so crucial to lead to the breakthroughs that we need in order to achieve success. But you are right. The Pacific Ocean is massive, and thankfully, we have an

unmatched network of coalitions and partnerships that share our vision for a free and open Indo-Pacific.

These mutually beneficial relationships enable us to work collectively to secure international peace and provide stability.

Heather "Lucky" Penney: I appreciate that. And I'm just going to reiterate that I think that we need to resource and equip our young men and women to do the job that we've asked them to do. And in my mind, the scale of the theater in the Pacific, as well as the ongoing commitments in every other theater means that we need to have a lot [00:26:00] more of what you do in Compass Call. Which means a lot more platforms and the only reason why is because you are going to be a cornerstone of combat operations as we move forward. So, we need more airplanes so that we can support more of the mission. Every, every Combatant Commander is going to want more of Compass Call.

So, pivoting to talk about newer technologies, like penetrating stealth, fifth-generation, information dominance systems, and these aircraft have powerful apertures. And we're also looking to integrate with space-based capabilities. How are you seeing all of this, evolve with your mission and integrate with your mission?

Col. Jeremy "Smitty" Smith: That's a tough component, but we have a growing toolkit that the DoD has at its disposal, and we're going to confront those challenges head-on. It does necessitate that our Compass Call crews have to think outside the box with our systems and how we're going to integrate.

Mission integration is the cornerstone of many of the large [00:27:00] force exercises and training events that we send our air crews to right now. Furthermore, uh, we understand that it's just as important for our joint and coalition partners to understand our capability as well as us to understand theirs.

So, here at the ECG, we put great emphasis on ensuring all jammers are developed into expert communicators who can definitely explain how Compass Call can shape battlefields for our partners in the fight. No longer is it just the EWOs or the mission crew supervisors who can communicate effectively about Compass Call effects. It's the pilots now that are leading this charge to be able to really communicate wherever they might go that this is the weapon system that we're taking to the next fight.

So, we communicate on TTPs, we find new and innovative ways to use our apertures, especially with this new platform that's coming online, the E 837B. In

order to enable the Department of the Air Force's vision that where every aperture is an [00:28:00] avenue for effects delivery, as it was mentioned in the DAF's spectrum superiority strategy.

Heather "Lucky" Penney: I'm really glad you brought that up because, fighters also have electronic attack and electronic protection capability. You know, they've got jamming capability as well now, because every aperture, as you said, can be that avenue for effects delivery. But that doesn't necessarily mean that we don't need to have Compass Call.

It just really what it means is understanding how you can integrate all that into an electronic warfare or electronic attack battle management, because what an individual fighter aircraft can do with their, with their capabilities is not the same as what you bring to the fight. And, but you've got the enterprise understanding of how to integrate all of those capabilities together.

Uh, and again, I think that that's a crucial element that will and is essential to enable success in future operations.

Col Jeremy "Smitty" Smith: Mm-hmm.

Heather "Lucky" Penney: So, with the nature of information, I'm guessing you guys work with [00:29:00] something called mission data files and that there are a lot more dynamic today than what existed in past decades, especially as we begin to look at cognitive electronic warfare and so forth. So, could you explain what these MDFs or mission data files are, what these libraries are? And how they're increasingly going to need to evolve to adapt in real-time and what we're seeing in the battlespace?

Col Jeremy "Smitty" Smith: Right, so I can explain a little bit about MDFs, but in the new information paradigm, data can spell the difference between victory and defeat. More specifically, whoever can capture, transport, analyze, and operationalize that data at a faster rate and a higher bandwidth will be able to outpace their adversary's decision-making. They can get inside their decision-making cycle, and they can wreak havoc on events, uh, their best-laid combat plans.

So, while I can't delve too much into detail, just know that MDFs are that principle in [00:30:00] action. And Compass Call plays a crucial role to turn battlefield observations into combat capability.

Heather "Lucky" Penney: So, I'm going to ask, do you have the ability and will your airmen potentially in the future, are you looking to maybe have the ability to empower them to adapt to changing and emerging signatures and signals?

Col Jeremy "Smitty" Smith: So, we have rapid acquisition processes from Air Force Material Command and we do have, rapid reprogramming efforts that are underway right now. And we're making great strides to be able to, put capability into the field faster than ever before.

Heather "Lucky" Penney: No, thank you. I appreciate that. I imagine we could get to a point where we might need to have Geekineers, if you will, out in the field that, um, are responding in real time, right?

Like you land and you download the data that you've collected and they're able to do some rapid reprogramming right there. So you stay one step ahead of the [00:31:00] adversary. And the reason why I bring this up is I'm thinking about the lessons learned from Ukraine, right? And what that might mean for your mission. I mean, the electromagnetic spectrum is clearly a major player in theater for both of these sides. And as they evolve, it's a cat-and-mouse game. They've got to go faster than the other.

Col Jeremy "Smitty" Smith: Mm-hmm.

Yeah, you're right. Ukraine, it's fighting for survival, and it has found some unique ways to use the to their advantage. So, consider the air and the naval drones with explosive payloads that drive directly into a target. However, Russia also uses the EMS to its advantage by embedding EW across all levels of war, from strategic all the way to tactical.

So, what I recognize about this conflict is that neither Ukraine nor Russia can dominate the EMS across the entire front line. Both sides, they show resolve to maximize benefits of the EMS, but they are also exceedingly frustrated about the inability to drive the other side to concede the EMS. [00:32:00] This is modern warfare, and any conflict the U. S. sends its military to engage in will experience similar constraints placed upon the EMS. We have to recognize our need to both protect our use of the EMS while denying our adversaries use. This is critically foundational.

Heather "Lucky" Penney: Yeah, you know, the Air Force is obviously recognizing the importance of Compass Call and that's why they're working to

field the EA 37B. And for our listeners, the EA 37B is a new aircraft and associated set of mission systems.

So, it's moving from Compass Call from the C 130 to a G 5 Gulfstream as a baseline aircraft. And that's going to provide some serious speed and altitude advantages from the might, Hercie Bird, as you said. So, EA 37B is still in development. Um, so, Smitty, can you talk to the macro intent of this modernization? What are you trying to achieve?

Col Jeremy "Smitty" Smith: Sure, so the modernization is driven by adversary capability, anti-access, and area denial, A2AD as it [00:33:00] was known. It required us to expand our capabilities and address combatant command requirements, and the EA 37B will allow us to project electromagnetic attacks further than we ever have before.

Heather "Lucky" Penney: And that's really important. That kind of range power at range is powerful. So, recent ACC commander, General Mark Kelly, he often explained the Air Force needed the EA 37B capability yesterday, given pressing mission demands. Why did he have a sense of urgency?

Col Jeremy "Smitty" Smith: So, I'll just, I'll speak to, uh, during Secretary of Defense Austin's Senate confirmation hearing, he highlighted China as a pacing threat. Secretary Kendall highlights China as the pacing threat. And I believe this is where the urgency stems. As the adversary continues to evolve and develop new technologies, we, too, have to be at the forefront of driving innovation and technological advancements here at home.

Heather "Lucky" Penney: I agree with you and the other thing that Compass Call [00:34:00] does and what the EA 37B will bring to the fight is the ability to inject uncertainty into China's plans. Because not only do they plan to attack our operational systems as a system and deny us command and control, data links, battle management, and so forth. But that's exactly what Compass Call does. And EA 37B can make them less certain about their ability to successfully execute their combat missions, but how will you 37 impact the scale and scope of your crews? I'm guessing you're spending a fair amount of time right now working with your team members to prepare for this recapitalization modernization.

Col Jeremy "Smitty" Smith: From a C 130, which is a big airframe to a Gulfstream business jet, which is a smaller frame. It definitely has its challenges. Uh, yes, the crew will downsize, but the scope of that mission cannot and will not change. My predecessors did a good job to prepare the

group for this change which was the driving [00:35:00] factor in getting back to the basics and owning the electronic attack mission. Now that the plane is here, the EA 37B, we are shifting our focus to the development of TTPs while also mitigating the challenges that come with shifting to a new platform.

Heather "Lucky" Penney: Yeah, that'll be really important. You know, the TTPs, that is part of the magic sauce that airmen bring to the fight, is how we employ our technologies. I will say though, C 130 to a Gulfstream, at least you guys are upgrading to a toilet, right?

Col Jeremy "Smitty" Smith: A smaller version of one. Yes.

Heather "Lucky" Penney: I used to joke about having to give up an ejection seat for a toilet seat, but so clearly, we need to keep this unclassified. But, can you give our audience an idea of how the enhanced speed and altitude of the Gulfstream plus your additional and the new mission equipment, how that might evolve your CONOPS?

Col Jeremy "Smitty" Smith: Yeah, now the parameters for planning, they have [00:36:00] changed, but the physics, like we have already mentioned, have remained the same. The evolution, it's driven by a target centric mentality, and we must be able to conceptualize the mission's success and then build the plan back from that. Compass Call and the entire DoD, we have to focus on synergy.

Taking in mass amounts of data and integrating all domains to maximum effects. While also incorporating advancements and technology and threats and ever shrinking window of opportunity. This is the heart of the challenge. I think that large force exercises and training are crucial in this process. Debriefs and lessons learned are driving factors in CONOP development. And as Compass Call develops TTPs with our new platform, we find ourselves at the forefront of CONOP evolution.

Heather "Lucky" Penney: Which is really exciting. But another advantage that the E837 will probably bring is not just about your capabilities and the potential for new CONOPs and TTPs, but it's also going to be [00:37:00] some basic maintenance sustainment advantages that come with it. Right?

Most of your current aircraft were procured in the Reagan administration and the gear on board them has been used hard over thousands of combat hours. Your maintainers have done a super job of keeping you mission ready. But what, um, what will the new iron mean from a basic flight line perspective from the crew chiefs perspective? It's kind of like turning in a high mileage car and

getting a new one. There are some benefits, but there might also be, some new quirks that you got to think about.

Col Jeremy "Smitty" Smith: Sure. So, with the C 130, we have the world's best maintainer, Whiskey Bravo Mikes. They're still doing an incredible job to keep that old airplane flying, not only in training missions but also in deployed configurations.

It really is amazing the work that they're able to do with these old airframes. But you've also highlighted in your question that working with contract maintenance, uh, for the EA 37B is new for the group at large. So far, uh, it's been a great relationship. Our [00:38:00] operational squadron has been quite involved in the new maintenance, or with the new maintenance team, to solidify what is the new normal.

Whether it's sortie duration or fuel loads, uh, maintenance and the crews have been working diligently. I'd say to work through the new problem sets to build a foundation for this new normal.

Heather "Lucky" Penney: Again, so, to keep it unclassified, is there a particular capability that you're really looking forward to getting on this new system?

Col Jeremy "Smitty" Smith: Not necessarily a particular capability, but the evolution of connectivity and integration across the EMS is particularly interesting to me. It's all about growth. It's all about the potential to go into this mission system and build out new capabilities faster than we ever have before. But going back to the COIN fight, so we fully understood the EMS environment and operated at will within it. As we move into a highly contested arena, uh, with tactics and procedures, they become much more important. And the ability to [00:39:00] aviate, navigate, and communicate becomes much more challenging without spectrum superiority.

The tactics and procedures to circumvent these challenges, it will spell the difference between a razor thin margin of success and failure. And those TTPs will manifest from the hard fought efforts during intensive continuation training and large force exercises.

Heather "Lucky" Penney: I'm glad you brought that up because, you know, we talk about, EMS and what Compass Call brings to the fight, and oftentimes we think about that in terms of data link and battle management, but it also is as

basic as aviate, navigate, and communicate. And so, um, that's another critical component that you all bring to us.

So, if you were to meet with your unit leadership in 10 years looking into that future, what would you expect us to just discuss?

Col Jeremy "Smitty" Smith: Oh, wow. So, consider the pace of current technological change. I'd expect in 10 years, artificial intelligence and machine learning to become a major player in the EMS [00:40:00] utilization. Yeah, current usage of the EMS, it's parsed out by governments to enable maximum usage and availability, just simply for their priority systems, but entire sections of the EMS are parsed to services, such as, emergency management, radio, and television. I expect AI and ML to help governments make their use of EMS much more efficient by rapidly opening and closing channels in a time-sharing methodology, which will allow several users to use the same frequencies nearly simultaneously but without interfering with each other.

This is a rough wag though. Um, I do believe the spectrum usage, in a decade, will be as surprising to me as cell phones were to my grandparents generation. Like, technologically and technology is just moving at a screaming fast pace.

Heather "Lucky" Penney: You know, Smitty. Thank you so much for making the time an underappreciated, but an absolutely essential and critical element of combat operations. [00:41:00] One that because it's invisible, most warfighters just take for granted, but will become increasingly important as we move into the future. So, thank you so much for helping explain where you're at, where you're going. As you know, we're huge fans.

And so I'd love to continue the conversation and love to have you back on again.

Col Jeremy "Smitty" Smith: Thanks, Lucky. And I'm so glad to have the opportunity to speak with you as well. Anytime that we can get out to a, an audience and say the criticality of the EMS and I think the best way I can sum it up is technology.

You love it until you don't have it. And that really encapsulates what the EMS is going to be in this next fight. I'd like to open the opportunity to others who can also speak knowledgeably about the EW. My wing commander, the 55th Wing, is Col Mark "Chili" Howard. He gets it and he's fully on board with integrating as many players as possible into the effects applied through E. W. I also want to thank Captain Dwayne Mitchell, Captain Thomas Chapa, and Master Sergeant

Andrew Torres for their [00:42:00] expertise in these matters. Thank you for having me on today, Lucky. Jam on.

Heather "Lucky" Penney: Jam on. Party on, dude. No, I would totally take you up on the visit to come see your unit at Davis Monthan. And I appreciate you making the shoutouts to your team because we're only as good as our team.

So, thank you so much and we'll see you later.

With that, I'd like to extend a big thank you to our guests for joining in today's discussion. I'd also like to extend a big thank you to you, our listeners, for your continued support and for tuning into today's show. If you like what you heard today, don't forget to hit that like button and follow or subscribe to the Aerospace Advantage.

You can also leave a comment to let us know what you think about our show, or areas you would like us to explore further. As always, you can join in on the conversation by following the Mitchell Institute on Twitter, Instagram, Facebook, or LinkedIn, and you can always find us at MitchellAerospacePower.org.

Thanks again for joining us, and have a great aerospace power kind of day.

See you next [00:43:00] time.