Episode 84 - Air Mobility in the Pacific: Time to Adjust Our...

SUMMARY KEYWORDS

air mobility command, logistics, pacific, forces, support, exercise, ace, combatant commander, command, capability, air, air force, indo, flying, aircraft, aor, china, crisis, operations, guam

SPEAKERS

John "Slick" Baum, Lt Col Josh "Doc" Holaday



John "Slick" Baum 00:01

Welcome to the Aerospace Advantage podcast. I'm your host, John "Slick" Baum, and today we're talking about the gritty but indispensable side of modern militaries: logistics. The former commander of US Transportation Command, General Darren McDew, was fond of saying, "Logistics is a lot like the light switch in a room. A combatant commander walks into his or her office, flips on the light, the lights come onâ€"without much thought of how the electricity is created, pushed through a series of transformers and power stations and transmitted across power lines before making the light bulb glow. And that's the way logistics has worked for the US military for the past 20 plus years of operations in the Middle East. When the United States wants to take action, it can and it does anywhere in the world at the time of our choosing. And that is because our logistics capabilities are unparalleled. In fact, our military has relied on a global transportation network, a huge number of contractors and vital partner nation support in order to keep the lights on, the chow hall stocked, our vehicles fueled and our munitions bunkers fullâ€"and of course, the flight lines operating at peak efficiency. But this accomplishment has not gone unnoticed by our nation's potential adversaries. Countries like China, Russia and Iran recognize that the easiest way to kill an F-22 or F-35 is not in the air, it is on the ground. They're focused on keeping US forces away from the front lines by targeting logistic nodes, airborne tankers and command and control capabilities, all of which become even more important to US operations in the Indo-Pacific, where the vastness of that AOR acts as a force multiplier for potential enemies. So with that, I am really excited to introduce Lieutenant Colonel Josh "Doc" Holaday to the show. Now he's a C-17 pilot, an Air Force strategist and former INDOPACOM planner. He has also served here at the Mitchell Institute for the past year, where we have really enjoyed having him as part of our team. So Doc, thank you so much for being here.

Lt Col Josh "Doc" Holaday 02:02 How you doing Slick? Thanks for having me. John "Slick" Baum 02:04

Well, Doc, let's start at the beginning. Can you briefly describe your career experiences so our audience can understand a bit more about you and the way logistics works in the Air Force?

Lt Col Josh "Doc" Holaday 02:12

Sure thing, Slick. I spent, started my career in the C-17, flew for seven years operationally, starting in 2005. Four years in Charleston and three years in Dover. I flew a ton of missions, all of them to the CENTCOM AORâ€"so flying over the Middle East, stopping in Germany, stopping in Spain, stopping in South Africa on my route to Qatar. I flew numerous, numerous missions into Iraq and Afghanistan, Oman, Djibouti, etc, just supporting the overall US effort there. In my entire seven years flying the C-17 initially, I went to the Pacific two times, two missions to the Pacific. So CENTCOM was where I was, where I worked. After that I'd had enough and volunteered to go to staff. So I went out to Air Mobility Command headquarters in Illinois. And then from there, I went to Army school at Command and General Staff College out in Kansas, followed by SAASS in Maxwell, Alabama. And then I went out to PACOM, where I was randomly assigned to the J5 shop there. That kind of changed the entire trajectory of me as a career officer and as a strategist, so I had a baptism of fire into all things China, our allies and partners in the AOR, great power competition, etc. Within a month of arriving in PACOM, I was already out on the road traveling and meeting with our allies and partners out there. After two years of PACOM I was fortunate enough to get hired as the Chief of Safety at the wing at Hickam, so I went down there, where my side hustle was participating in the Pacific Air Forces ACE working group, or the Agile Combat Employment working group, which culminated in early 2019 when I went out to Guam for a six-week exercise called Resilient Typhoon, where we deployed six wings to Guam, and then did distributed operations to five different locations over the course of three days, which was really neat. And then after that, I was very fortunate to command the 535th Airlift Squadron, flying C-17s at Hickam, flying all over the Pacific. And there, the highlight of my career was getting my airmen promoted, we did have a very, very high rate of promotion, which is awesome because they were working really hard. And we did a lot of exercises unilaterally, meaning my squadron went out with the Republic of Korea, with Australia and the Indian militaries train with them, their C-17 forces and with their special forces, which was really awesome. So overall, my career is basically two halves of a career. The first half, big Air Mobility Command flying C-17s, and the second half, basically not flying but heavily involved in the Indo-Pacific in strategy and the challenges that we face, out with peer adversaries.

John "Slick" Baum 04:23

Okay Doc, that's a huge difference between the two halves of your career. And you know, my time in the F-16, I deployed several times and always needed Air Mobility Command, if it was tankers, obviously to keep me airborne so I can accomplish a mission. But also, I could see the widebody aircraft at my bases too, you know, the C-130s, the C-17s, and aircraft that haul all the big stuff. And those aircraft were operating at the very edge of America's global reach. And obviously, we had a lot of issues that we needed to cover, from extremism in the Middle East and Africa to supporting allies and partners in Europe, all the way to the other side of the globe

operating at the edges of the Indo-Pacific. And obviously, it's a lot to cover. So can you talk to us today about what that looks like right now and how the United States Air Force is going to get after this incredibly far-reaching mission set?

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Lt Col Josh "Doc" Holaday 05:11

Well, of course, it's true that international competition crises, the threat of war, etc, these all remain present today, it's always been the case throughout history, I think it'll always be the case. In times of crisis or war, logistics basically is what allows the US and our allies to keep moving and be ready to respond to future crises or future actions. I mean, if you want a great example of how not to do this, look at Russia's invasion of Ukraine. We've got vehicles stuck in the mud, you have tanks being blown up or being towed away by Ukrainian tractors. So that just shows you the implications of doing logistics wrong. When you consider a possible crisis or conflict in the Indo-Pacific, the demand on our logistics forces, I expect, will grow exponentially, especially when we start operating from smaller and more remote locations. In fact, Air Mobility Command is already operating aircraft and assets across the globe on a daily basis. So you can imagine how big the increase in demand would be if we start operating in a vast area that's relatively remote, and the future of Air Force operations or even joint operations, because Air Mobility Command, US Transportation Command, they truly do support the joint force in combat. These will all rely heavily on increased logistics capabilities. But in the Indo-Pacific, this is going to be really hard, it's going to take some innovative thinking about how best to meet that demand. Let's get more into that in a minute. But first, let's help the audience get a better picture of how we do logistics today. So to say it real briefly, what Air Mobility Command does, is it provides forces to combatant commanders. It provides stuff and things, people who have their shots, they have their right equipment, they've got the right training, out to the combatant commander and the commander then operates his forces in combat. So our tankers and C-130s operate a lot like fighters and bombers or anyone who has been part of an Air Expeditionary Force deploying to the Middle East. You basically change operational control from your parent major command, meaning your're part of Air Mobility Command, and when you deploy, you take that patch off and you put on the patch for the deployed location. You're now part of, in this case, Forces Central. That's not true for C-5 and C-17. We're what's called enablers. So instead of being part of an expeditionary force, we just enable all the expeditionary forces all the time. So for example, my career I deployed four times to the CENTCOM AOR, meaning the Middle East. And I had dozens and dozens and dozens of TDYs when I wasn't deployed. All of them, like I said, other than two in seven years, all of them went to the Middle East. But I was never actually part of Air Forces Central. I was never actually part of the organization. They're in CENTCOM. And that's kind of unique for Air Mobility forces. So for units that don't change when they're deployed, what they basically do is they have operational support requirements from the combatant commander, and they coordinate those for support back with our air operations center back in Illinois, which is called the 618th AOC. Or its legacy name, some of our listeners may refer to it as the Tanker Airlift Control Center, TACC. So overall, the command and control for my unit, the C-17 units out there, went all the way back to the AOC in Illinois, with coordination with AOC out in the Middle East where we were. So even at the height of the wars in Iraq and Afghanistan, the CAOC, the combined AOC or the Combined Air Operations Center at LUD talked and coordinated with the AOC back in Illinois for all of my missions. And what that does is it allows the central agency of Air Mobility Command to retain the ability to recall airlift forces, in case of an emergency for use elsewhere. And that's how TCC operates today. They do global command and control even if forces are pulled away

to another AOR for operations or exercises or training, or whatever else is going on. But the central repository for global airlift in Illinois retains the ability to reach out and change those missions if something of a higher priority comes about.

John "Slick" Baum 08:42

Alright, Doc, let's flesh this out some more. AMC obviously has a lot of aircraft to serve the airlift requirements for the US military across the globe. Right?

Lt Col Josh "Doc" Holaday 08:50

Exactly. So the Central Command commander back in 2008, certainly had his hands full with requirements because he had two wars going on in Iraq and Afghanistan, plus operations throughout the Middle East. And we had a lot of assets from Air Mobility Command in-theater, and we were conducting intra-theater airlift and refueling in order to meet that demand. But Air Mobility Command 's job is to feed that fight, while retaining capability to respond anywhere else. So if the President of the United States needed to travel, like when President Bush went to Africa, we could support a major exercise in the Pacific, no problem. US Army and Marine Corps troop rotation were there. This construct allows Air Mobility Command to turn down training temporarily, dial up operational aircraft, support the combatant commander who requires the force, support the President of the United States, support anyone, anywhere, around the globe and remain ready for further challenges. That's always Air Mobility Command's goal, the thing that allows us to happen is the global reach of their Air Operations Center in Illinois. So let me provide you a real world example. In 2008, I was asleep in my trailer at al-Udeid airbase expecting a mission to go to Afghanistan, to where I was gonna land on a dirt strip, which would have been my first time commanding a C-17 onto a dirt runway, which was really cool. Upon alert I was told to notify operations that everything had changed. I went into the operation center and was basically briefed by the squadrons weapons officer that Russia and Georgia were fighting a war. And due to our diplomatic agreements with Georgia, we were going to go into Iraq and carry the brigade of Georgian infantry that was supporting Operation Iraqi Freedom, and return them back to Georgia so that they could fight for their country. So I got to do that. I went into Iraq into a field called al-Kut, and picked up 101 Georgian infantry and carried them back to Georgia, right, landed in Tbilisi at night and offloaded the troops. I was one of I think 16 or 17 C-17s to do that mission, so. But all of the planning, all of the necessary mission planning, all the, you know, the study of the airfield, the threat environment, the actual mission details, filing of the flight plan, for example, all those details were done by the weapons officer in the squadron and by the AOC back in Illinois while I was asleep, so I can literally go to bed expecting one mission, wake up the next day, and be set out on another mission. That's the true strength of Air Mobility Command, centralized control.

John "Slick" Baum 11:02

Yeah, that's incredible. It's a lot of moving parts. So, this obviously has worked for us and our allies and our partners for a long time. What are the downsides of running Air Mobility from one centralized location?

Lt Col Josh "Doc" Holaday 11:13

Secretary Kendall has made it clear that China is our pacing threat. And the way we do command and control, which has worked so well against violent extremist organizations in the Middle East, may not work as well against a peer adversary focused on degrading our command and control and targeting our logistics nodes. So all eyes are on China, and in the Indo-Pacific, the vastness of the Pacific just complicates things. The Pacific is huge, it's really hard to describe how large it is. But here's an anecdote for you. You're standing on the ramp at Elmendorf Air Force Base in Alaska, which is one of our main C-17 and F-22. locations in the Pacific. You're physically closer to Bosnia than you are to the Philippines. So if you take the vastness of the Indo-Pacific, add in a pacing threat, which is focused on our C2 and logistics, you just get a situation where the way we've done things may not be enough for the future. And that means that the timeline required for the Pacific Air Forces or the US Air Force in general to respond to a crisis in the Indo-Pacific just is longer. Anything that increases the timeline of an American response equals increased risk if China seeks to deter America and our allies, or to win a war through a fait accompli, because history tells us that you really shouldn't allow the United States to build up combat power at our own pace.

John "Slick" Baum 12:27

Okay, so, Doc, that obviously makes a lot of sense. And we've talked about deterrence a lot on the podcast. But as a refresher, deterrence is like a math equation where deterrence equals will times capability. So if your adversary believes that you have the will and the capability to win a fight, then they're less likely to start a conflict. So if the timeline is slower than optimal, the capability at the pointy end of the spear is reduced, then our overall deterrence goes down. Is that right?

Lt Col Josh "Doc" Holaday 12:53

Exactly Slick, because I have no idea what American or international willpower will be if there's a crisis over Taiwan. The ultimate decision whether to go to war or not is political, and is based on numerous factors at that time, such as conditions that led to the crisis, the state of domestic international economies, et cetera, et cetera, there's a whole bunch. As a military strategist, those are things I truly can't control or predict. But what I can control is the capability side of the equation. That's the military capability side of that equation. And that leads us back to the vastness of the Pacific and the technological capabilities of our pacing threat, China. Logistics is already hard to do, because of islands, distance, existing infrastructure at those locations, fuel requirements. And all those things are made even harder by potential cyber and command and control degradation likely to be encountered in a crisis or conflict with China. So our challenge on the mobility side is, how do we ensure logistics doesn't fail the warfighter while operating in a very difficult environment.

John "Slick" Baum 13:47

Yeah, Doc, it's gotta be tough. It took a lot to ensure, you know, that Iraq and Afghanistan fights were fully supported, especially in Afghanistan, where the land route for fuel from Pakistan was threatened several times by ISIS and other factions. But those groups fired

precisely zero ballistic missiles, and they did not have much of a cyber game. So China will obviously prove to be different in that regard. So what should AMC and the regional combatant commanders do differently to prepare for this challenge?

Lt Col Josh "Doc" Holaday 14:15

Well, look, what I've found is that we need to practice the way we think we're going to fight. We need to get real about what it's going to take to fight the fight. And what that means is, ACE, right? We talked about this term over and over again, but let's actually define it. So Agile Combat Employment, or ACE, basically means taking smaller units out to more numerous locations across the Indo-Pacific in order to sustain our operations while reducing the likelihood of being attacked or if attacked, hopefully, decreasing the amount of damage we take during that attack in order to sustain operations tempo across the entire region. Now, some training exercises that we do now, they're held really locally and almost all of them are incredibly short, one to three days, four days, which is simply too short to simulate the actual situation we're going to encounter out there and it does not test logistics. A great example, this is Red Flag out at Nellis, where the combat air forces, our fighters and bombers, they train everyday to be the world's best during Red Flag. They get together and they have a great exercise. It's what makes the United States Air Force the world's best. Unfortunately, they assume that logistics up to that point has happened flawlessly, right, the aircraft are maintained, they've got the fuel, they've got the munitions, etc. This may not be a great assumption if you're accomplishing ACE in the Pacific, which brings us all the way back to our earlier conversation about Air Mobility Command providing forces to regional combatant commanders, right. So most of our mobility forces would go to the Pacific. They take off their AMC patch, they put on a Pacific Air Forces patch and to be part of PACAF, right? But not the C-17s and not the C-5s. So the question is, can the way we've done things with C-17s snd C-5s support the increased demand for supply throughput, demanded by units which are going to be distributed in this ACE construct across the region? And the only way to know this for sure is to exercise that way and to do it realistically. Now it's not all bad news. I did find several exercises, especially in the Pacific, that are closer to practicing as in conditions likely to be encountered real life. They go to a lot of locations. Some of them are now most multinational, which is really awesome. They go a long way from home, they last a relatively long duration, typically two weeks. We'll end with a personal anecdote. When I was out in Guam in 2019 with an exercise called Resilient Typhoon, we put six wings in Guam and then hopped six different locations over three days. We put a four-ship of Raptors, F-22s, down into Palau, which is an island southwest of Guam. And the number one issue they brought back wasn't what you and I might think of, I need better fuel or munitions or I need a better tactic so I can find a J-20. No. What they said was we didn't have enough shade, and we didn't have enough potable drinking water.

John "Slick" Baum 16:40

All right. So what you're saying here is the biggest issue that we will face is just getting the basic needs to our airmen like water and shade.

Lt Col Josh "Doc" Holaday 16:48

Yeah, that's right, Slick, we're really not focused on the nitty gritty details, right? We're assuming that those things will get taken care of at the wing or the squadron level. Again,

probably not a good assumption to make. And our exercises right now, the ACE exercises that they're conducting out in the Pacific or elsewhere, they have dedicated exercise planning teams at the higher headquarters level or maybe at the unit level, and they're looking at all the details, bed down food requirements, transportation, security, everything, but they're doing it for weeks and months in advance because that's what it takes. If you're going to go fly a multinational exercise in the Pacific, you, in peacetime, you do need diplomatic clearance. You can't just show up with a six-ship of Raptors, you have to have that cleared weeks in advance. That's the way it works. But that's not what a crisis in the Pacific is going to look like. And it's certainly not what's entailed in ACE. So it's easy to say things like the Air Force will stand up an air expeditionary wing or set up a task force. And I'm telling you, I was the deputy commander for that exercise in 2019. I was in the planning cell for weeks. And on the day of actual execution, I know exactly which bases were sending how many aircraft with their maintenance support to my location. I knew it. But what I didn't know were the details. I didn't know, for example, the names of the actual airmen who would be joining my expeditionary operations group in a matter of hours. There's one airman in particular whose name I'll redact. He's an actual real person who we thought had in processed at Guam and never left Korea. And we spent a day and a half trying to track him down for fear that he was, you know, something bad had happened to him. But no, he's never left Korea. It was just a paperwork mixup. So those nitty gritty details are super important. Some units out there, like the Hawaiian Raptors flying the F-22s out of Hickam, they have truly done outstanding work and figuring out how to move F-22s rapidly, and they've tailored their maintenance support appropriately. So when they arrived in Guam, they had their maintenance stuff ready to go and they, when they needed to hop, to pull, out they knew exactly which pallets, you know, it's much smaller portion needed to go for that little spoke part of the hub-and-spoke situation in ACE. So they're able to accomplish that. They've done great work. But what can I tell you that exercise in 2019 highlighted the need for nitty gritty details and for a lot more equipment. Unfortunately, when I left my C-17 command in 2021, my personal efforts to try to procure communications gear, medical support, all that was cut from the unfunded requirements list, which means there's basically no requirement out there right now today for the PACAF C-17 unit to purchase, own maintain, or be trained on any sort of stuff like potable water filters, having MREs ready to go, organic medical capabilities beyond the flight doc and a bag of first aid kits. The requirements of ACE in the Pacific haven't yet translated into funding and procurement requirements for tactical units. And that's a big problem. I believe that problem can be fixed, but it'll take money. And the Air Force and DOD as a whole has funding issues across the board. It's a real challenge.

John "Slick" Baum 19:26

Well, Doc, I gotta say, just listening to you know, the problem is much larger than I thought. So how do we go about fixing all this?

Lt Col Josh "Doc" Holaday 19:32

So as I discussed, I think first thing we need to do is exercise differently. Air Combat Command has ACE lead wings designated, but they're limited to the lift they can purchase from AMC, or they do exercises near their wings like Seymour Johnson does, which doesn't really simulate ACE in the Pacific. But the great thing here is that those wings have the ROEs pinned on them, and that's a huge first step. The next thing to be done is that the Air Forces in Europe and PACAF should do the same thing, but for their geographic areas. They should name the actual

people, the actual man or woman, who's going to lead an Air Expeditionary Wing in a fight tonight scenario, and then empower them to run fight tonight exercises. This means a small planning staff will call them a white team, right, where they do the planning work, but they keep the details away from the participating units. Then ideally, a unit would get a 36-hour warning order. And then Air Mobility Command to be notified by headquarters Air Force to participate in support and participating units would have to act really, really fast to deploy out to those regions. Then they've got to stay in that deployed location long enough to discover the actual problems and the equipment they brought with them, what it means to actually command and control logistics forces, what, in the vast Pacific, what does that actually entail, you'll have time in those locations to discover what truly is necessary to make ACE work.

John "Slick" Baum 20:44

So Doc, you've mentioned C2 in the Pacific. Obviously, the Joint Force has spent a lot of time working on developing JADC2 with the Army's Project Convergence and the Navy's Project Overmatch, and of course the Air Force's ABMS. And when the DOD and industry talk about JADC2, most of the conversation is on decision making for the F2T2EA targets. And it's clear that logistics forces could use the same network, but it seems years off in the future. Can you talk to us a little bit about that?

Lt Col Josh "Doc" Holaday 21:14

Slick, that's exactly right. Timely and effective command and control requires conductivity. And our pacing threat, China, is focused on disrupting our capabilities. Conductivity in the Pacific simply is not guaranteed. It's hard to do inherently, it's harder to do if you're scattered around and eight locations across the Pacific. And it's harder still if China's effective at degrading those systems. So to be clear, our global C2 network employed by command commanders, including Air Mobility Command, have done great things for us and allied combat power for decades. And if you assume China won't be successful in degrading that network, great, everything is awesome. But I do believe there's value in exploring the implications of a crisis where China or other malign actors have had some success. In that case, Air Mobility Command has a lot they can bring to the table to enable joint logistics in the Pacific and to enable joint command and control in the Pacific. We've got hundreds of planes of space onboard, ample electrical supply and numerous external antennas just flying around the AOR all the time, delivering for America and our allies, even more so in a crisis or contingency operation against China in the Indo-Pacific. Those aircraft could be enabled with a hardware-software combo that becomes the connective tissue linking relatively isolated C2 node such as ACE locations, which would enable the various Air Expeditionary wings deployed across the island chains to communicate back and forth, even if their actual communication capabilities are jammed. Eventually a C-17 is going to come through, and they can get information to that aircraft and then fly it out.

John "Slick" Baum 22:33

So Doc, you're talking about an airborne communication bridge, right?

Lt Col Josh "Doc" Holaday 22:36

Yeah, exactly. And this technology exists now. It's been developed by companies like Sierra Nevada, Boeing, even Air Mobility Command is developing one of their own. And to be clear, as a warfighter, I don't care which vendor or product is fielded. I really truly don't, because I just need the capability. And the good news is, this capability can be done right now. This technology exists, which would enable the 1000-plus aircraft in Air Mobility Command to intertwine isolated command and control nodes, which could be, in my opinion, might very well be isolated by enemy action.

John "Slick" Baum 23:08

All right, we've also discussed some of the solutions to this problem of doing logistics in the Indo-Pacific. But Doc, can you describe to our audience, how we will know when we're getting this right?

Lt Col Josh "Doc" Holaday 23:19

Yeah, sure, thanks. For me, success looks like four different things. It looks like units exercising realistically, to deploy units to small remote possible ACE locations across the Indo-Pacific. It looks like exercises should keep their participating units in the dark until the very last minute. This would exercise and represent what it's going to be like for Air Force response to a new crisis, which requires immediate response by combatant command forces. This means that the units have to get up, they've got to get out the door fast, they'll be supported by Air Mobility Command, because that's what real crisis or contingency looks like. And it'll also allow those forces to build partnerships with the people in those countries, which is really, really important. Three, success to me, it looks like individual leaders get the ROEs pinned on them to be ACE leaders. This makes ACE real for those people, right? You're the person who's going to go out and execute this. It automatically gets buy in from them because they're going to be out on these islands, right? They are going to have to come back and organize, train and equip their forces they're going to want to do that. And finally, to me success looks like those leaders, those lieutenant colonel's, majors, master sergeants, etc. They will be figuratively jumping up and down after an ACE exercise demanding more training, more equipment and better capabilities. Because if you do those four things, right, they're just mentioned, if you go out there, if you go far and stay there for a long time, areas of inadequate support will become very, very apparent.

John "Slick" Baum 24:34

Alright, Doc, we're getting short on time. The last question for you is after everything we've discussed, what are the primary things that our audience should take away from today's podcast?

Lt Col Josh "Doc" Holaday 24:43

Yeah, Slick, I don't have all the answers, but the audience should be aware that there really are a lot of smart people working on this and doing research. This year, I had wonderful conversations with people across industry in the Air Force, including a lot of old friends of mine

who are currently working at Air Mobility Command, and they're pouring their hearts and souls into trying to figure out ACE, trying to transform heavy aircraft into the command and control connective tissue we'll need if we're going to execute ACE in the Pacific. I also know that we in the Indo-Pacific have been working on ACE for at least six years. And despite all that time, that talk, that effort, really not a lot has changed at the tactical equipment level, meaning funding dedicated to acquiring ACE equipment and training certainly didn't happen in my time when I was leading my squadron out there, and I was trying pretty hard. Exercising ACE accurately will give Air Force major commands, such as the Pacific Air Forces or Air Mobility Command, the hard data they need to make a stronger case for acquiring additional capabilities. Unfortunately, instead, current exercises are too short, they're too close to home, they're planned too well in advance. There are some exceptions, like I talked about, but most of them fall into that condition. So there's a lot of work to be done. And the good news is we've got a lot of smart people working on it. But now, I think it's just time for us to get out there and do ACE right.

John "Slick" Baum 25:52

Well, that's awesome. Doc, thanks so much for being here today to talk to us about how to better get after solving these logistics problems for our airmen. I want to wish you the best of luck in your new job and say congratulations again. We're definitely going to miss you here at the Mitchell Institute.

Lt Col Josh "Doc" Holaday 26:05

Hey thanks Slick, it's been a great year here at the Mitchell Institute. Special thanks to you and General Deptula and the rest of the Mitchell Institute team for hosting me this year and the other two fellows we had this year, it's been a great experience, truly learned a lot and really appreciative. Thanks a lot.

John "Slick" Baum 26:21

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 our listeners for your continued support, and for tuning into today's show. If you like what you've 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 think we should 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 we'll see you next time. Stay safe and check six.