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[00:00:00] **John "Slick" Baum:** Welcome to the Aerospace Advantage podcast. I'm your host, John Slickbaum. 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.

[00:00:15] **John "Slick" Baum:** When it comes to air and space power. So if you like learning about aerospace power, you are in the right place to our regular listeners. Welcome back. And if it's your first time here, thank you so much for joining us as a reminder. If you like what you're hearing today, do us a favor and follow our show.

[00:00:31] **John "Slick" Baum:** Please give us a like and leave a comment so that we can keep charting the trajectories that matter to you most. Last week, we learned about the birth of the F 16. It was an incredible conversation with folks who were there. We covered everything from Colonel John Boyd's study using energy maneuver theory as a design tool to the lightweight fighter competition and what eventually transformed into a program of record in form of the F 16.

[00:00:56] **John "Slick" Baum:** Key actors in this conversation included General Mike Lowe, working in [00:01:00] the fighter requirement shop and an early program manager. Major General Charlie Lyon as one of the initial operational F 16 pilots and Major General Larry Studstream discussing what it was like to transfer from a third generation F 4 to the fourth generation Viper.

[00:01:16] **John "Slick" Baum:** These first hand accounts were incredible, and if you haven't heard part one, You don't want to miss it. It didn't take long for the F 16 to go from the lightweight fighter competition to completing initial flight testing, go on to full rate production, developing initial TTPs and declaring initial operational capability on November 12th, 1980.

[00:01:37] **John "Slick" Baum:** Six months after IOC. On April 28th, 1981, an Israeli Viper shot down two MI eight helicopters, and less than two weeks later, a package of eight Israeli defense force F sixteens struck and destroyed the Ooz rock nuclear reactor in Iraq. The timeline is just astonishing In eight years. This aircraft went from a [00:02:00] high speed taxi test at Edwards to full up air to air and air to ground combat.

[00:02:05] **John "Slick" Baum:** The F 16 Division of the Fighter Weapon School was formed in 1982. Developmental and operational test squadrons created mission sets and fielded additional hardware to rapidly evolve the F 16 from a cheap, Lightweight day only dogfighter to an all weather day, night BVR and PGM self escort strategic interdiction platform.

[00:02:27] **John "Slick" Baum:** The Vipers responsibilities grew from a point defense fighter to adding full up offensive and defensive counter air close air support, forward air control, airborne strategic attack, suppression and destruction of enemy air defenses, combat search and rescue plus tackler and nuclear responsibilities. By January 17th, 1991, U.

[00:02:48] **John "Slick" Baum:** S. F 16s deployed as major players in Desert Storm. More combat missions were flown by the F 16 than any other aircraft. From striking airfields, military [00:03:00] production facilities, surface air missile sites, and a MiG 25 kill, the F 16 was engaged in full on air combat. So that's what we're here to talk about today.

[00:03:09] **John "Slick" Baum:** The next step in the F 16's development. Combat employment, and we are talking to the men and women that strapped in and went into harm's way. We are fortunate to have an experienced lineup of Viper drivers here at the Mitchell Institute and the Air and Space Forces Association. Lieutenant General Bruce Orville Wright, president of the Air and Space Forces Association, is joining us.

[00:03:31] **John "Slick" Baum:** He's a fighter weapons school graduate, F 4 and F 16 pilot with 3, 200 hours of flight time and 65 combat missions in the F 16, most notably as the 614th squadron commander during Desert Storm. He continued to fly the Viper throughout his career, even as the 5th Air Force commander. Heather Lucky Penny, senior resident fellow here at Mitchell, also flew two combat tours in the F 16, but most notably found [00:04:00] herself scrambled on the morning of 9 11 2001 to defend the nation's capital region.

[00:04:05] **John "Slick" Baum:** Lieutenant Colonel Maxwell Efeskover is an Air Force fellow serving with Mitchell Institute for his senior developmental education assignment before he pins on Fulberg Colonel. He transitioned to the F 35A, but cut his teeth as a wild weasel in the F 16. Now I'll also be chiming in, as you know, I spent my career in the F 16 included as an F 16 weapons school instructor and Thunderbird.

[00:04:28] **John "Slick" Baum:** I also have 265 combat hours in the F 16. General Orville Reitzer, welcome to the Aerospace Advantage. It is always great to chat with you and talk about your impact on our airmen and guardians with the work you do as the president of the Air and Space Forces Association. But I have to say it is especially.

[00:04:47] **John "Slick" Baum:** Great to talk to you about your time in the F 16. So, sir, thanks so much for being here.

[00:04:52] **Bruce "Orville" Wright:** And thank you, Slick. Thanks for leading this.

[00:04:55] **John "Slick" Baum:** And of course, Heather, Lucky Penny, always great to have you on the show and spend [00:05:00] time with you. And we are lucky, no pun intended, uh, you know, that we got to get out to Edwards and take part of the F 16's 50th anniversary a few weeks ago.

[00:05:07] **John "Slick" Baum:** And, you know, speaking to the engineers, the maintainers, the pilots, the leadership, it was just an absolutely incredible event.

[00:05:15] **Heather "Lucky" Penney:** Well, it's like, first of all, you're taking my name in vain So I need to give total props to the 416th test wing and the 416th test squadron, led by lieutenant colonel, Kat Pancini.

[00:05:25] **Heather "Lucky" Penney:** It was Phenomenal. What they did in terms of bringing everyone, all the families onto the base on the lineup of F 16s they had from the community that flew in, all of the STEM, uh, stuff that they had

[00:05:39] **John "Slick" Baum:** for those that are unaware of this event, I mean, they were literally busing, kids in like a field trip from their high schools and stuff to come in for the day, hang out with these kids. Iconic air power folks and engineers at Edwards and really get a deep dive into what the mission is.

[00:05:54] **John "Slick" Baum:** And of course, you know, it was an easy opportunity with, the F 16 anniversary, but yeah, it really was an all [00:06:00] hands community, base event. It was just really, really awesome. and of course, Efes, I want to really thank you for being here, you know, you've been a wealth of knowledge on all that's going on in the combat Air Force with the F 35 and appreciate you sharing your experiences in the Viper since you flew, uh, the Viper quite a few hours before going to the Panther.

[00:06:18] **Maxwell "Efes" Cover:** Yeah. Hey, thanks Slick. Happy to be on the podcast. Looking forward to the discussion. General Wright, sir, good afternoon. It's an honor to be on today's podcast with

[00:06:25] **John "Slick" Baum:** you.

[00:06:26] **John "Slick" Baum:** You bet. Thanks, Ennis. awesome. Well, General Wright, I, you know, I would like to get this thing kicked off. Can you take us back and set the stage of your time getting to the F 16 from the F 4? And, You were an experienced fighter Jacques already, you know, having multiple tours in the phantom as a weasel, a fighter weapons school, grad four to two tests.

[00:06:45] **John "Slick" Baum:** And then you take command of a Viper squadron after paying the Piper, with your first round of school and staff. So what was it like in 1988 being an ops officer and squadron commander to our home Spain? I mean, it was the height of the cold war [00:07:00] and you guys were training in, in right in the middle of it.

[00:07:02] **John "Slick" Baum:** Well, thanks

[00:07:03] **Bruce "Orville" Wright:** again slick and I appreciate y'all putting up with some elder war stories, but this is an opportunity also reflect on the unbelievable experience, including just the finest human beings and leaders in the world. And that really, as we all knows. What are our combat air forces experience tend to be about certainly, or go to war experience.

[00:07:24] **Bruce "Orville" Wright:** When I go back just a few years to late 74, when I graduated from pilot training, there were no at 15 or 16 available. So, I was happy to get an F4. I go to George and then from 75 to 84, I flew all the versions of the, uh, F4, uh, C's, D's and E's while I was at George and then off to Slattery's at Moody, uh, over to, back over to Kadena, flying F4C Wild Weasels in the famous 68 Squadron, lots of coping under time, Clark, we delivered the F4G at that time, um, and so, as I got ready to go back through weapons school, the [00:08:00] F4A, lots of F 4 lots of, operational, very realistic operational experience with lots of airplanes and realistic threats in the air.

[00:08:08] **Bruce "Orville" Wright:** We had F 5s at Clark and Cope Thunder. We had very realistic SA 2 and SA 3 simulators on Crow Valley Range. And then, of course, once I got to Nellis, that included a 422 assignment, the experience in the F 4 just continued to expand. It was a gift in so many ways. Many of you will remember Joe Bob Phillips as one of the world's most famous 16 pilots early on in the MOT& E.

[00:08:34] **Bruce "Orville" Wright:** God rest his soul. He was my ops officer in the 422. And so part of our training, uh, our testing, really operational test evaluation, was had glass testing. And that really was the initial stages of reducing the radar cross section of the 16. at that time, the 16 had no radar missile. And so Joe Bob put together the main maneuver, uh, turn 90 degrees to.

[00:08:57] **Bruce "Orville" Wright:** radar shooter at about 10 miles get [00:09:00] engaged in this case with, four F fifteens, uh, against four F sixteens, and then two F fours were always in the mix as mig 23 simulators as those f fifteens were actually simulating two 20 sevens, which, uh, were followed by the Soviets in 85, but we were already concerned.

[00:09:15] **Bruce "Orville" Wright:** About, this advanced radar shooter, the S 27 and how the 16 then would defend against that or engage that aircraft without a radar missile at the time. Long story short, once Joe Bob and his 3 ship, including Timmy Alvin got engaged with the 15. it was more than a fair fight. And then the other part of being an.

[00:09:35] **Bruce "Orville" Wright:** Now it's that time from about 81 to 84 besides our daughter giving birth to the world's greatest fighter pilot. My daughter, she says that anyway, we, um, we really were able to fly a lot with the 474 squadron, brand new lieutenants flying F 16s. we flew against the F 16XL at that time, uh, that was competing with what would become the F 15E, and then lots of, uh, air to [00:10:00] surface, air to ground testing, the GBU 15s, uh, and one test, uh, we had three 30 millimeter gun pods loaded on my F 4E and fired them all three at the same time.

[00:10:09] **Bruce "Orville" Wright:** so Terrific experience that then was the foundation for going to Toro and being brand new in the F 16 and in, uh, 80, uh, 87, 88, I was blessed to, uh, my Nellis friends, Timmy, Shooter Summers. And Ted Carter, had both flown F 16s and F 7s. And so we're constantly talking about getting Orville right up to speed, in the F 16 as I went through three squadrons as the Corps assistant officer, officer and then squadron commander getting ready to go to war.

[00:10:37] **Bruce "Orville" Wright:** It was much about, nuclear employment then, dual capable jets. in the, uh, 87, 88, 89 timeframe the same time, we'd constantly deploy from Torahone to Incirlik and I'll just close and, uh, and I'll take all the air out of the room, but flying at Incirlik. Uh, and getting ready for nuclear war ice, including the full range of flying.

[00:10:57] **Bruce "Orville" Wright:** We own Turkey. We could fly anywhere in Turkey. We [00:11:00] wanted to surface to as high as we wanted to go. Terrific low levels, air to air engagements. Uh, we had the range and so a great place and a great opportunity, get some time in and learn all about incredible capabilities of the F 16. And I.

[00:11:13] **Bruce "Orville" Wright:** Couldn't wait every day to go jump in the cockpit of my Viper. especially after flying the A model a little bit. And now we've got Block 30 big mouth GE engines with a heads up display. And the ability with a keypad to actually put all the coordinates in besides so you don't have to reach behind your G suit to put them in.

[00:11:31] **Bruce "Orville" Wright:** So I'll stop there. Thanks, Lick. Thanks

[00:11:32] **John "Slick" Baum:** for asking. Uh, it's, it's unbelievable, sir. I mean, what, what a magical time from a fighter pilot's perspective to be flying new jet and sounds like great airspace and awesome host nations to support you, we had some major lessons learned from Vietnam and really focused on training against a peer threat in Europe as we looked east towards the Soviet Union.

[00:11:53] **John "Slick" Baum:** And, you know, you were in Spain, leading a squadron, and then, um, Saddam Hussein decides to cross into Kuwait [00:12:00] and you are tasked to take your squadron to the desert. So what was it like getting that call? Well, a

[00:12:06] **Bruce "Orville" Wright:** gift, I mean, you know, we trained our, all our lives to go to war. Um, and, um, General Horner just spoke at our reunion in January for our lucky devils.

[00:12:16] **Bruce "Orville" Wright:** We had about 75 of us there. And he made a great statement. He hates war, but he loves flying combat. And so that's what we were anxious to do. A total of calm out launch 24 F 16 3 spares going someplace nobody ever heard of called the law gutter to an airfield. We had to get let down plates from the local.

[00:12:37] **Bruce "Orville" Wright:** American Airlines guys to figure out how to get there. Took off with two KC 10s, uh, landed at, uh, in Gutter and Doha International. Met by the ambassador. There was no prepared, uh, preparation at all. Um, Gutter was a late fight, late entry to the fight because of political considerations, but fortunately we have a very capable U.

[00:12:55] **Bruce "Orville" Wright:** S. ambassador to Gutter at the time, Mark Hambley, who paved the way. [00:13:00] In his direct conversations with General Schwarzkopf to get us on the ground with our 24 jets. and then the training was incredible. We had, um, French F 1s, same F 1s the, uh, the Iraqis flew. And then the Gutterese had a squadron of F 1s also.

[00:13:15] **Bruce "Orville" Wright:** And so we were constantly doing DACT and training. realistic threats. In this case, Mirage F1s. In fact, the French went back to the Mirage factory and got us tail numbers and, and then frequencies and all the data on all the Iraqi F1s by tail number. So we knew everything about the Iraqi F1s because at the squadron level, we had that level of collaboration and the French again on their own, our French friends who we flew with every day in the F1 did that for us.

[00:13:40] **Bruce "Orville" Wright:** So we're ready to go to war, uh, in so many ways. Uh, we built our tent city and built our bomb dump and we were excited, on 17, January 91, when we all launched, to attack, Iraqi held, airfields in this case, uh, Al Salim and Al Jubeir was my first combat mission. Um, and we'd launched in a 16 turn, [00:14:00] 16, 16 jets in the morning, 16 in the afternoon.

[00:14:02] **Bruce "Orville" Wright:** And except for one day on the 19th of January, when Mike Roberts, the Tico's ice got shot down and I was trying to work the SAR that night, uh, flew every day of about a. for about a month and a half. So lifetime gift. Uh, and again, it's the pilots, it's the people, it's the maintainers, the bomb loaders. As we got together, debriefed a lot of this one more time last month down in Fort Walt Beach, sir, I'm going to jump

[00:14:25] **Heather "Lucky" Penney:** in here because you mentioned Tico and slick and I were out there for the 50th at Edwards and Tico M.

[00:14:31] **Heather "Lucky" Penney:** R. Um, you know, and E. T. They were all out there and they gave incredible speeches. I mean, it was so impactful to hear about their experiences Flying, uh, for you, uh, out in combat operations. And so notably, you know, uh, ET, uh, Tula recounted his famous mission over Iraq, where he threat reacted against six surface to air missiles.

[00:14:54] **Heather "Lucky" Penney:** Um, and having to do all of that in mill power only because they were way below bingo. [00:15:00] And I think his video has been viewed a few million times on YouTube. also, Tice and Mike MR Roberts, who both, were shot down, not nearly as fortunate in that highly congested environment, like, is super mess, right?

[00:15:14] **Heather "Lucky" Penney:** Super missile engagement zone over, uh, Iraq. So, but one of the things that was really amazing was how, uh, ET was almost brought to tears when he mentioned how important your leadership was to keeping everyone focused. and still ready to go off and do the mission the very next day that had to be really heavy hit.

[00:15:36] **Heather "Lucky" Penney:** What was that like leading at that point in time?

[00:15:40] **Bruce "Orville" Wright:** Well, looking back somewhat different perspective than then I could not be more proud the courage of all the lucky devils, flyers, maintainers, bomb loaders, and war became very real when we lost 2 of our friends in 1 afternoon. That morning, I've taken the F [00:16:00] 16, um, a 16 ship, that was supposed to go to, uh, Baghdad area, our weasels couldn't launch, so we went to alternate targets out west.

[00:16:07] **Bruce "Orville" Wright:** When I landed, and we looked at the mission as it had been somewhat updated, we were tasked against a refinery, pretty much in downtown Baghdad, and part of a very large package. and if you look at those maps, there were plenty of marked 2s that we were going to fly into. I think we were pretty confident by that time.

[00:16:27] **Bruce "Orville" Wright:** Interestingly, probably too confident that the F 4Gs and the F 111s, uh, and really the 117s had taken down or would continue to take down the integrated air defense system, which was probably one of the most modern in the world. And so I think it's important to note that we've been briefed by General Horner.

[00:16:45] **Bruce "Orville" Wright:** Um, and General Buster Gloss and that if things didn't look right, there was no requirement to launch. So he really had decentralized decision authority. Well, including our provisional wing commander at the time, Jerry Nelson, that mission led by John Nichols, who went on to be the tag [00:17:00] in Texas. we weren't going to not not go.

[00:17:03] **Bruce "Orville" Wright:** And so as I watched these guys launched, I knew it would be tough, but I was confident, late that night, we, uh, fully understood that we'd lost two airplanes. we really were very concerned that, Mr was dead because we, we saw no shoot, but we did have video of an essay six spearing his aircraft.

[00:17:20] **Bruce "Orville" Wright:** interestingly, that essay six warhead did not go up, but we did not think Mr was alive. I stayed up that night working the SAR and the next morning, somebody had, painted a stencil, God bless TECO the opposite door, even though, you know, we were offered by, the AOC that we didn't need to fly that day, every pilot mounted up and 16 airplanes the next morning, ready to go to war, um, and slap that door jam that said, God bless TECO and MR.

[00:17:49] **Bruce "Orville" Wright:** I saw pilots go from age 20 something to age 30 something with a look of grim. Commitment. And that's what our enemies understand. We don't give up as [00:18:00] American warfighters. When we lose one of our own, it just makes us more resolved. And that's what I saw, not just on the morning of the 20th, but for the rest of the time.

[00:18:09] **Bruce "Orville" Wright:** Now, by the way, Uh, Tico and MR, got out of jail and went on to fly more combat sorties. Just two quick stories and before I take all the air out of the room, Tico said when he was picked up, uh, start hauled to Baghdad, in a, I think a Chevy Caprice, he looked out the window and the oil refinery that he had bombed was still burning.

[00:18:26] **Bruce "Orville" Wright:** Uh, so we hit the target, and then in about three days we learned that, uh, MR was alive. Uh, part of that story, um, and in many ways, a tougher job than I had was carry. Uh, required with the, uh, D. O. A. D. O. And the chaplain and the flight surgeon to go tell Patty that night back at tour home that her husband might be dead.

[00:18:45] **Bruce "Orville" Wright:** There was some hope. And Patty was 9 months pregnant. And so as Patty and M. R. and Tico and he still come to our reunions. We talk about those stories in the context of a brand of brothers and sisters, uh, that again is a [00:19:00] lifetime gift. Thanks for asking another longer, longer answer that you were probably looking

[00:19:04] **John "Slick" Baum:** for.

[00:19:06] **John "Slick" Baum:** No, sir. That is just absolutely incredible. I mean, I'm hosting this thing and I'm just sitting on the edge of my seat, listening to your experience as a squadron commander and just thinking back to our time. And, uh, of course we have the fancy jets with the bells and whistles and all that. But at the end of the day, you know, we're in the profession of arms or we're in the profession of arms and, can only imagine, what that was like.

[00:19:25] **John "Slick" Baum:** and we know, based on, the Testament of, Folks that were in the squadron. I mean, your leadership was instrumental in keeping everybody going there. And, you know, really have to, get out of that one because we could probably talk about that one for a couple hours, but I've got to ask you, how did things evolve in the Viper community throughout the nineties?

[00:19:43] **John "Slick" Baum:** I mean, we saw a major post cold war drawdown and jets were retired and the pilot force was cut and the guard got a huge injection of Vipers. Uh, and we kept flying and fighting as world events demanded, places like Bosnia and Kosovo. So can you walk us through those years?

[00:19:58] **Bruce "Orville" Wright:** Well, first of all, MR went [00:20:00] on to be a guard wing commander, and, uh, continue to fly the F 16.

[00:20:05] **Bruce "Orville" Wright:** And so you're right. The guard picked up the F 16 mission in such a responsive and, and really forceful combat capability way. And continue to deploy the desert. Many of the pilots that flew with me in the 614th went on to the guard and continue to fly. In fact, some of the same airplanes, same big mouth block thirties, uh, that we had.

[00:20:24] **Bruce "Orville" Wright:** And then those airplanes transition to places like the D. C. Guard, where they're, um. Radar missiles were added on radar upgrades. And so, uh, it's kind of interesting. Here's a platform that was so adaptable, uh, and continue to be upgraded. So again, some of those airplanes that we've with only a nine missiles, um, in desert storm in 91 and went on to be fully up radar capable missiles.

[00:20:46] **Bruce "Orville" Wright:** It kind of goes back to the days of Joe Bob. I also was able to watch, um, Yeah. Uh, the block 30 continue involved in multiple combat operations. I flew back to the obstacle commander at Ramstein. So I flew and provide comfort, um, in [00:21:00] the block thirties and then block thirties and block forties, uh, in deny flight flying out of Aviano.

[00:21:05] **Bruce "Orville" Wright:** I'll tell you about the block 40 in the most. Memorable memory, if you will, is when I hit the diver switch and I could talk to a satellite in the block 40. We were always wanting to be more accurate hitting targets. And when I could talk to satellites, I became an early guardian adopter, if you will, that, you know, what our, our GPS capability, what our satellite capability brings to the lethal capability.

[00:21:26] **Bruce "Orville" Wright:** Our combat air forces is unprecedented. And then back over time to be the wing commander of Masala. Now I'm in the block 50. And that memory really has to compare the Block 50 Wild Weasel with the F 4G Wild Weasel. The Block 50 Harm Targeting System was decades in technology, but along what we're able to do with the F 4G, which was a lot better than we were able to do, accomplish, to accomplish the Wild Weasel mission, the F 4C Wild Weasel.

[00:21:50] **Bruce "Orville" Wright:** So the technology continued to be responsibly integrated into the F 16. And gosh, the Block 50, uh, Wild Weasel. Uh, with [00:22:00] amazing airplane to fly when you put together the history of watching how, where we were and accomplishing the wild weasel mission, which, by the way, is its own ethos, uh, every threat of target, if you will, is what weasels are all about.

[00:22:12] **Bruce "Orville" Wright:** And

[00:22:12] **John "Slick" Baum:** so first in last out,

[00:22:14] **Bruce "Orville" Wright:** sir, absolutely. Absolutely. So that's, that's kind of watching the evolution and then just close out when I went back to be. The 5th Air Force commander continued to fly the Block 50 F 16. By that time, between, um, 97 and 2005, when I went back, uh, we had turned the Block 50 in from a multi role air to air and air to ground platform to an information center.

[00:22:37] **Bruce "Orville" Wright:** Air to air and air to ground platform, hell of a lot of tuning system, link 16, phenomenal airplane. And then that, I think, um, and EFIS can talk about that, certainly paved the way uh, for the F 35. It's about people, it's about experience, it's about the industry and Combat Air Forces partnership and look what we've done and accomplished with the F 16, we hope Ukraine will get that jet employed as soon as possible.

[00:22:59] **John "Slick" Baum:** Well, [00:23:00] awesome, sir. Yeah, really. I mean, like you said that that jet is now just such an information platform. And of course, we're going to talk to us about what the F 35s bring to the fight. But I've got to turn to Lucky for a second. And I promise I'm not trying to embarrass you here, but you were the final speaker of the day at the F 16s show.

[00:23:16] **John "Slick" Baum:** 50th anniversary at Edwards. And honestly, thank goodness for the organizer who put you last because your speech was absolutely incredible, lucky, and nobody could have followed you in the words that you spoke that day. There wasn't a dry eye in the hangar with your accounting of the morning of September 11th, 2001 and the heroes that day.

[00:23:36] **John "Slick" Baum:** So if you don't mind, would you talk us through what it meant to employ the Viper on a mission that no one could have anticipated that morning?

[00:23:44] **Heather "Lucky" Penney:** Slick, I am just grateful to have had such an incredible aircraft, That morning, but I will tell you, as, as, as Orville has mentioned, it's all about the people, every single person in that squadron wanted to be in that jet.

[00:23:57] **Heather "Lucky" Penney:** None of us wanted to be left behind [00:24:00] because when SAS and I took off out of Andrews Air Force Base, we were taking off to protect and defend the nation's capital and New York had already been hit, the Pentagon had been hit, and even though we didn't have missiles on our aircraft, so it was essentially a suicide mission, we were going to have to ram our F 16s into the airliner, which we later learned was, Flight 93, but of course everyone knows that the passengers on Flight 93 took control of their destiny, of their fates, and they, they crashed it before it could get to, uh, to D.

[00:24:32] **Heather "Lucky" Penney:** C. Everyone wanted to be on that. And I want to say that what we had to face that day was utterly unprecedented. And it's really only because of the teamwork and the leadership of the squadron and the expertise of the squadron that together we were able to improvise a response. For something that we had never been trained for.

[00:24:55] **Heather "Lucky" Penney:** This was not nuke alert. we were not part of the alert mission. We [00:25:00] didn't have any live weapons. We were not plugged into any kind of battle management system we were not getting fed any intelligence. So everybody from. General Worley, who was our wing commander, Mark Sassaville, uh, Dan Raisin Cain, David Nex McNulty, who was our intel officer, Mark Drifter Valentine, who was trying to bring folks in, as our scheduler so that we could respond to this and all of our crew chiefs and maintainers, everybody came together and did what they needed to do.

[00:25:28] **Heather "Lucky" Penney:** They were proactive. They, improvised. It was a team effort and. it's just, it's amazing what they were able to do on that day. But what I'd like to focus on is really kind of getting back to my final remarks to folks there, at Edwards is that every pilot knows that aircraft have personalities.

[00:25:50] **Heather "Lucky" Penney:** That's why we keep bird books, right? Because every airplane's a little bit crooked. It bombs a little bit differently and so forth. Airplanes have souls. [00:26:00] And those souls are the sum of everything from the very beginning, uh, warfighters who define the requirements and, and put up their dream sheet to the designers and the engineers who did the trade off studies to the prototypes, um, to everyone who built the systems and all the skilled craftsmen who came together to.

[00:26:22] **Heather "Lucky" Penney:** To actually, no kidding, manufacture that aircraft to every mission that jet has been on, whether or not it was training or whether or not it was in combat. And every pilot who has sat in that aircraft, the jets take a little piece of us every time we touch them. And so they hold our memories. They are the last witnesses.

[00:26:42] **Heather "Lucky" Penney:** Uh, To, to us and to what we've been through with those jets as we go off to battle, they remember our fears, our hopes, our victories, our triumphs, um, and our terrors. And when we are gone, they will be the last ones who remember in the last ones who can tell [00:27:00] our stories. And so I am just so grateful to, to have been part of that, uh, and.

[00:27:07] **Heather "Lucky" Penney:** And the F 16, I think, will go down as, if not the, one of the greatest fighters in history because of how enduring and adaptable it has been because of the foundations of its design, both its aerodynamic design and its handling qualities. I mean, it's not a jet you strap on, it's a jet you become one with.

[00:27:27] **Heather "Lucky" Penney:** To, um, how, uh, how its avionics, um, are so flexible. So it's just phenomenal. I will say though, the jet that I flew on 9 11 is still in service. It was born in 1985. Gives you an idea of how old our fleet is now today, but you know what? I'm going to pivot slick. What about you? You've got over 2, 300 hours in the Viper.

[00:27:53] **Heather "Lucky" Penney:** You're a weapons school graduate. You are an instructor. You're an airborne, uh, forward air controller and a wild [00:28:00] weasel. So you didn't pony up to this in the intros, but I want to put you on the spot. Tell us about your experience in the Viper. What was your combat

[00:28:09] **John "Slick" Baum:** experience? Oh, well, Heather, thanks again.

[00:28:12] **John "Slick" Baum:** I'm just sitting here listening to your story and I'm in total agreement with you about how these airplanes have, have a soul and they, and they, and you become part of that legacy. Um, I have to tell you for me, and thanks for putting me on the spot. And, you know, as the old adage goes, you know, how do you know you're halfway done talking, uh, to a fighter pilot?

[00:28:30] **John "Slick" Baum:** That's enough about me. Let's talk about flying. So I walk into the triple nickel as a new first Lieutenant, just graduating the B course. And, of course 9 11 had just happened, but, I walk into the squadron and there are, eight fighter pilots standing at the duty desk. They have no idea who I am and I just walk in and if you can just imagine picturing the duty desk with, top three and [00:29:00] the SARM sitting behind the desk and, eight pilots standing there in G suits, harnesses, They've got their vests on, they're sanitized, nine millimeters on their chest with a round in the chamber, the safety off and the hammer halfway clicked back, right?

[00:29:18] **John "Slick" Baum:** I'm like, what is going on here? I mean, we were in a go to war squadron because we still had combat lines, up to an eight front. So, you know, sometimes we would fly as a 16 turn 10 or a, 14 turn eight or something like that, but we still had at least eight lines a day dedicated to peacekeeping in Bosnia and Kosovo.

[00:29:37] **John "Slick" Baum:** And it was still, a pretty hot, area. So, you know, my experience was just walking in and flying combat from home. so that was a bit of an eye opener of like, If you're, when you're a Lieutenant and you, you watch Top Gun a lot, like I did, you know, to get myself through college, you go, yeah, man, this is pretty fun.

[00:29:57] **John "Slick" Baum:** It's sexy. But then when you realize the [00:30:00] gravity of, what you do for a living, I mean, it could not have been better personified than walking into my first day at the triple nickel. and that really just stuck with me. And so, you know, we were on the hook initially To be part of, the Northern front, if you remember that during shock and awe, and at the last minute Turkey decided not to let us, do combat operations, from there, which we were, attuned to doing because the squadron had essentially been, you know, flying wartime, uh, sorties every day, you know, through the nineties into the early two thousands.

[00:30:29] **John "Slick" Baum:** Uh, and then we did have the opportunity to be part of fight in, uh, OIF and OEF, uh, in 2004. where we had, folks engage heavily in combat and luckily we had folks that were extremely experienced in combat, like, people that, you know, Gator Moore and General Gus Costella, to lead our squadron.

[00:30:51] **John "Slick" Baum:** And you know, they had stories from Bosnia and Kosovo that we were hearing. often, about what it was like to do, FACA and close [00:31:00] air support and, you know, working with, the brave, men and women on the ground. And so all of that together was just. my experience in the F 16 was just so combat focused of, you know, flying across the fence and, and being within harm's way, uh, the majority of the time.

[00:31:17] **John "Slick" Baum:** So, uh, again, like you both have described so far, you know, the F 16 is, just one tough combat, proven aircraft and we'll continue to do that for, for many, many years. but, again, I could get off on that, but lucky you deployed to the desert as well. So what were your missions like?

[00:31:36] **Heather "Lucky" Penney:** Like, so it was amazing.

[00:31:37] **Heather "Lucky" Penney:** So, we mobilized for nine 11, we were starting to do combat air patrols 24, seven, and we're doing that for like the next year. And then we kind of get word that we are on the tip of the spear for kicking down the door in Iraq. And why was that? Right? I mean, like, we're just a guard unit. So we had these block 30 F 16s that no longer were managed by [00:32:00] the Air Force.

[00:32:00] **Heather "Lucky" Penney:** So the Air National Guard owned the modernization program, which meant that, um, you know, we had lightning targeting pods, um, um, And by the way, lightning, uh, the turning pod, it was 90 day difference between the old lantern pod, right? The lantern pod that IR seeker, it looked like a 1970 sonogram. I mean, it was just like a fuzzy blob.

[00:32:20] **Heather "Lucky" Penney:** These lightning pods, man, you put that on the jet and it, what you had infrared that was crystal clear. You had an EO, so kind of like a TV, black and white TV capability. It was. Just a step change difference in your ability to target and guide a laser guided weapons, but with a pre block block 30, we were able to accelerate some modernization.

[00:32:42] **Heather "Lucky" Penney:** So, the software capability upgrade 5 emergency tape release, right? That was a rapid capability insertion, which upgraded us from just having ring laser gyros for our navigational and positional situational awareness to having the GPS embedded. Which [00:33:00] meant that we could then, um, load up, uh, JDAM bombs and drop off of, uh, coordinates there.

[00:33:05] **Heather "Lucky" Penney:** Uh, we also had the saddle data link, which was an airborne version of an army data link. And this was really neat because we could free text on it, which was also important because our tactics that our experienced guard guys developed in less than a year. So we're fielding and we're developing tactics in less than a year from the time we get the notification that we're going to deploy.

[00:33:28] **Heather "Lucky" Penney:** Allowed us to free text with special ops troops that were on the ground, um, and they were driving around on a little buggy, which was basically a Humvee with a battlefield, a universal gateway expeditionary, right? So buggy, everyone loves their acronyms, but that allowed us to be able to, uh, really integrate and do this kind of all domain.

[00:33:48] **Heather "Lucky" Penney:** freewheeling type of tactics that allowed us to scour the desert hunting Iraqi scuds. And I'm happy to say no scuds got launched out of the Iraqi desert. It was, uh, it was pretty exciting and [00:34:00] only capable, uh, because of the unique attributes and systems that we had on the block 30. And frankly, also the incredible experience that we had within the guard

[00:34:10] **John "Slick" Baum:** community.

[00:34:12] **John "Slick" Baum:** Yeah. What an incredible time. And you know, Epis, this really takes us into your time in the F 16. Uh, where were you and what did you experience in the combat arena? Yeah, I had the opportunity

[00:34:23] **Maxwell "Efes" Cover:** to fly the Viper for three long assignments after the B course before I transitioned to the F 35. Two of those assignments were overseas.

[00:34:31] **Maxwell "Efes" Cover:** My first one in Germany and then Alaska after that. And then my third one was stateside. So roughly 2008 to 2016. Live in the dream. That's awesome. During the nine year period, I flew the Block 40 MMC Viper in the B course. The Block 50 when I was in Europe, went to the Block 30 when I was in PAC F, and then back to the Block 50.

[00:34:56] **Maxwell "Efes" Cover:** Uh, when I went stateside at shop, so [00:35:00] most of my time was in the block 50, my combat deployment was when I was stationed in Europe, and that was the spring summer fall 2009, starting off in the block 40 as a student, knowing nothing about the jet to then strapping on the block 50 in Europe and being part of that wild weasel mission for my 1st assignment was.

[00:35:20] **Maxwell "Efes" Cover:** Not only eye opening, it was, it was awesome.

[00:35:23] **John "Slick" Baum:** Yeah, absolutely, Efes. I mean, you know, that's the amazing thing about the Viper. And we talked about the metamorphosis that this jet has gone through over the years. But, you know, the Block 5052 with the HGS pod really put the Viper into a whole new realm of impacting the battle space.

[00:35:39] **Maxwell "Efes" Cover:** Yeah, the majority of my time was in the 50. I received my initial F 16 training at Luke in the 40. So it is a step up, like you mentioned. At the time, the Block 40, it had the smaller motor. And like Lucky said, the lantern targeting pod. And what, what did you say it was a

[00:35:57] **Heather "Lucky" Penney:** 1970 sonogram, [00:36:00] just fuzz tactical tech, tactical vegetation.

[00:36:05] **Maxwell "Efes" Cover:** If that paints the picture for you, um, it was however, an MMC modded aircraft. So we did have link 16. We had color MFDs, multifunction displays at the time, which was a big deal. cause in 2007, a lot of the iron that was at Luke. They were Block 40 Tape 7 jets, and so some of my simulator events were in Tape 7, even though we were transitioning to the MMC jets, and it was at the schoolhouse when I was a student where I got to learn about the different blocks of the Viper and their associated mission sets.

[00:36:38] **Maxwell "Efes" Cover:** At the time, the Block 40 community mainly focused on or specialized in offensive counter air missions. involving attack operations or close air support. All of my instructors had done at least one operational assignment in the jet, so I really had the opportunity to hear their perspective on not just what the block of the F 16 variant brought to the fight, but [00:37:00] really just a balance of the mix of culture and expertise that goes with it.

[00:37:05] **Maxwell "Efes" Cover:** The block 50 version of the F 16 has the big, GE 129 motor, has an IFF interrogator, HGS pod, like you mentioned earlier, for finding and killing surface to air missile systems, a sniper advanced targeting pod, and thus focused heavily on the SEAD mission or OCA escort. during my time in the jet in 2008 is when I tracked into the block 50 and went to Germany for my first assignment as a new blue four wingman.

[00:37:34] **Maxwell "Efes" Cover:** The majority of my time was studying on enemy threat surface air missile systems and really identifying the key nodes of the enemy kill chain in order to be an effective weasel. My CENTCOM deployment was in 2009 and we deployed to Iraq. We were deployed there for several months and primarily flew close air support missions.

[00:37:55] **Maxwell "Efes" Cover:** When you look at the war timeline of Iraq, if [00:38:00] you will, at least the 2003 to 2011 piece in 2009. We were there during the first big year of the drawdown, so we still had roughly 140,000 US troops operating in Iraq when we showed. With the intent by 2011 to draw down to roughly 35, 000.

[00:38:20] **Maxwell "Efes" Cover:** And so our unit was there during that phase and thus supported that shift in U. S. strategy. So really the missions that we were doing a lot was overhead based protection of U. S. forces, a lot of convoy escort and conducting missions going after high

[00:38:36] **John "Slick" Baum:** value targets. Well, FS, that really brings me back. You know, I was lucky to fly thirties, forties and fifties, but just thirties, uh, as like a triple, uh, qualified guy at cannon, because we had three squadrons with three different blocks.

[00:38:48] **John "Slick" Baum:** And, you know, luckily all of that went away as we went away from this mentality of just having, you know. Specific block mission identity. and when I was at Nellis, I was lucky to be the F 35 [00:39:00] tactics development team lead. And I got to fly to Lockheed Martin, in Fort Worth every month for a week at a time to fly the Sims and write the first few chapters of 3 1 for the, F 35.

[00:39:10] **John "Slick" Baum:** And for those that. Don't understand that manual is the tactics, techniques, and procedures, which, uh, the pilots will execute their missions with, but there's a lot of similarity with the F 35 and the Block 50 with, uh, regard to sort of, the F 35 is always doing seed, kind of in quotes there and, building the big picture.

[00:39:29] **John "Slick" Baum:** So how do you see it since you've got to fly both the F 35 and the F 16, uh, how do you see them working together in the battle space? Yeah, that's a good question.

[00:39:39] **Maxwell "Efes" Cover:** You know, that the air force is a team and everyone will always say that no matter what's out there in the battle space, you're going to operate as a team.

[00:39:47] **Maxwell "Efes" Cover:** Whether it's F 16 strike Eagles, F 22, you name it, F 35, we got to figure out how to do this as a team and the weasel culture that was, and still is in the F 16 block [00:40:00] 50, slick. It's ever present in the F 35 Panther community. First in last out continues with the Panther ethos. The ability to find, fix, track, target, engage enemy threat systems, and prosecute targets with decisive effects is the bread butter of the F 35.

[00:40:22] **Maxwell "Efes" Cover:** And that, came from previous generations, like the F 16

[00:40:26] **John "Slick" Baum:** Well, FS, you know, we, of course we're honoring the F 16 in the, in these two episodes here, but you are the only fifth gen operator here. So talk to us about, why modernization is important and, it's easy for us to get sentimental about the Viper.

[00:40:38] **John "Slick" Baum:** I mean, we love it. but at the end of the day, we also need to modernize. So what is the fifth gen advantage all about? Yeah. We just celebrated the

[00:40:47] **Maxwell "Efes" Cover:** 50th anniversary of the Viper. And that's an amazing achievement of aircraft design and capability, and really at an affordable cost. The recent modification efforts that are ongoing with the Viper is [00:41:00] awesome.

[00:41:00] **Maxwell "Efes" Cover:** I really wish I had those upgrades when I was flying it. The F 16 has been the backbone of American airpower for decades. And it's proven itself as a breadwinner in combat time and time again, I believe it will continue to prove itself in combat as it's going to remain operational for the next couple of decades, again.

[00:41:18] **Maxwell "Efes" Cover:** These are my, my personal thoughts here. When you look at Vietnam. And when that kicked off in 1965, our nation didn't ask their sons and daughters to fight in spas and new ports built in 1915. We would have lost. Fast forward two decades into late 1990, early 1991, during the first Gulf War, and listening to the story from General Wright earlier, our nation didn't ask their sons and daughters to fight in that conflict.

[00:41:47] **Maxwell "Efes" Cover:** Using World War II aircraft built in the 40s, like the P40, We would have lost. what I'm getting at is we need to continue to focus on moving the ball down the field with modernizing our combat fleet. [00:42:00] Transitioning the F35 from the F16 for me, it wasn't a linear step in capability or technology. It truly is game changing in terms of what that aircraft can do with its suite of sensors.

[00:42:12] **Maxwell "Efes" Cover:** It's sensor fusion and it's stealth capability. TR3 Block 4 is a huge piece of that 5th gen modernization. And I hope we can get that over the hill and into the hands of the war fighters ASAP. I'm actually really excited to see the new capabilities of the F 16 modernization efforts and what it will bring to the battle space.

[00:42:33] **Maxwell "Efes" Cover:** I'm also really excited and optimistic about TR3 Block 4 when that, hits the front lines. Of the Panther community, and I'm really excited to see and gad and CCA when that eventually rolls out. So it is an exciting time to be wearing the uniform.

[00:42:50] **John "Slick" Baum:** Awesome. Well, you know, we are so super excited to see you get back in the jet as an 06 pretty soon, by the way, and, your voice is going to be [00:43:00] so important to lead.

[00:43:01] **John "Slick" Baum:** And, you know, just to put this in context, I think you're about the same age. In a career point where General Deptula was when he crafted, the desert storm plan. So to say that you have a, uh, a lot of responsibility and authority, uh, where you're at in your career is an understatement. So we are super, super pumped for you.

[00:43:20] **John "Slick" Baum:** And as always, we are getting tight on time. So I just want to say thanks again to you all for being here. And as each sign off, please feel free to leave us with something you particularly proud of when you think back at your time on the Viper.

[00:43:32] **Heather "Lucky" Penney:** You know, it's like, as I look at this, I just, I just have to say, I am so grateful for the opportunity to have flown the F 16 and to have been part of this community.

[00:43:43] **Heather "Lucky" Penney:** Really, truly some of the best men and women that I will ever be blessed to know. But you know what? You're not off the hook. So share, uh, share something that you're particularly proud of or fond of about your time in

[00:43:55] **John "Slick" Baum:** the Viper. Well, well, thanks Heather. Um, and, and for keeping me honest here, but you [00:44:00] know, as I'm listening to this discussion and I think back, you know, I was 17 when I joined the air force as.

[00:44:06] **John "Slick" Baum:** As a maintainer and I got to work on lantern pods and then I got to fly them, uh, in the F 16 and then like you, uh, as proud as I wanted to be of that pod, you know, the new technology coming on board, flying a lightning and a sniper and, you know, then dual pods and all this stuff. I mean, I, I'm just so proud to have been part, uh, of, of the team to, to.

[00:44:30] **John "Slick" Baum:** Both work on them and fly them. And then just with all the people, like you had mentioned, I mean, just incredible men and women in this community. Uh, so that's, that's for me, you know, my biggest takeaway about the Viper. Some of the best times of our lives.

[00:44:43] **Maxwell "Efes" Cover:** Yeah. Thanks Slick for letting me be part of the podcast team, you know, looking back my time flying the F 16, it's an awesome jet, right?

[00:44:52] **Maxwell "Efes" Cover:** No one will repeat that, like. Lucky said, it's, it's always been the people, it's always been the maintainers, the pilots, the support [00:45:00] personnel that makes the team what it is. And that's, that's what I miss.

[00:45:03] **John "Slick" Baum:** looks like,

[00:45:05] **Bruce "Orville" Wright:** uh, this is horrible.

[00:45:06] **Bruce "Orville" Wright:** what a gift to be with all 3 of you this afternoon as Carrie and I retire retire on 1 March. Uh, this may be one of my last official duties, but what I would share with you is, is really under the heading of encouragement. All three of you are warrior statesmen and bring joint operational fluency to the future of the nation's security that you may not appreciate as much as I do.

[00:45:37] **Bruce "Orville" Wright:** For example, I'm going to take this podcast and send it to Bill LaPlante as the Undersecretary for Acquisition and Sustainment because while he has 26 years, um, including time at the Johns Hopkins Applied Physics Lab, you all bring, um, a level again of experience. That really will continue to find the requirements [00:46:00] for, uh, our nation's security and whether it's bang for the buck for the taxpayer or the kind of decisive combat capabilities that we must have to effectively deter and then fight and win our nation's enemies.

[00:46:13] **Bruce "Orville" Wright:** So, um, I encourage you to continue to engage you're going to be in uniform. We hope the next 10 plus years at the same time, Heather, you have been. a fighter pilot certainly statesman and again, your knowledge of the joint fight and certainly slicks knowledge of the joint fight is so needed right now as Jimmy Doolittle had as his vision, uh, to educate the public on.

[00:46:40] **Bruce "Orville" Wright:** What our air and now space forces are all about. It's an honor to serve with you. It's been an honor to serve with you over the years. As Heather said, and I would reiterate the blessing of our time in the combat air forces, fighter and bomber. the blessing is incredible human beings. We got to serve with in the higher calling and defending, [00:47:00] um, this miracle.

[00:47:02] **Bruce "Orville" Wright:** Which is the United States of America. God bless you guys. It's uh, it's been a treat, a gift really to be with you this afternoon. Thank you, sir. God bless. All good. Thanks again. Heather. It's an honor to be anywhere with you.

[00:47:15] **Heather "Lucky" Penney:** Likewise, sir. You make me smarter, more popular, better looking.

[00:47:20] **Bruce "Orville" Wright:** You don't need much help.

[00:47:21] **Bruce "Orville" Wright:** God bless

[00:47:21] **John "Slick" Baum:** you. 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.

[00:47:39] **John "Slick" Baum:** 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 Mitchell aerospace power.

[00:47:55] **John "Slick" Baum:** org. Thanks again for joining us. And we'll see you next time. Stay safe and check six. [00:48:00] The views of active duty members reflect their personal opinions and do not reflect the position of the DOD or the United States Air Force.