

## Mike Benitez audio

**Eric Lofgren:** [00:00:00] I'm speaking with Mike Benitez, an air force officer with tons of experience in his spare time writes a newsletter about national security issues called the merge, which you can find more about at the merge dot C O. And yes, I've been signed up to the newsletter since it started. Mike, thanks for joining me on acquisition talk.

Thanks. Happy to be here. All right. So I want to start with one big piece of news. that there's a potential reduction in the air force fighter inventory from seven to four systems and the F 22 might not be one of those four. So how did we get to this point and what trade offs need to be considered?

**Mike Benitez:** [00:01:09] Yeah, I'd say the the media really jumped on that. But once you pull it apart it's an eventual reality. There's really nothing too dramatic being proposed. So it's not really just about capability, but it's also the logistics to sustain it. So let's break down the seven and then we'll break down the four.

So first there's the seven. And if you count it up, it's the A-10, the F 15 C the F 15 E the F 15 EX, the F 16 F 22. And if 35, so that's seven, but it's really six because they're counting the F 15 EX, which we have a total of two so far and it's supposed to replace the F 15 C. So that's already a policy programming decision that's been made.

So let's just call the seven it's really six. So in that six, that fighter fleet has a trifecta of issues. First of all, it's the smallest it's ever been. It's the oldest it's ever been. And then finally, it's the most diverse fleet wise that the air force has ever had in its entire history. So when you combine the age, how small it is and how diverse it is, the sustainment, the modernization, and then just a simple economies of scale are all battles that we're losing on all fronts.

So when you go back and you look at some of the the data from the air force, our weapons systems sustainment has almost doubled in the past 20 years. And it's about 150% in the past decade, just trying to sustain the fleet. And each time we try to keep. Doing what we have. We ended up cutting fires to end up paying bills.

And so we're in this death spiral now that's the problem. The air force is in with having too many types of fighters and too old and that the too hard to upgrade. So that's the seven, which is really sick. And then the other part is that for when he says seven to four, and that's not really four, it's a four plus one.

And that plus one is the a, is the A-10. So when you read between the lines of how they're framing that and everything that's been said about the A10, where that timeline that's seven to four, it's really like a 20, 35 timeframe. So it really, the big question is why a week before the budget. Comes out.

Would the chief of staff come out and make a statement that is about 15 years into the future? Why would he want to Telegraph the punch out so far? And for me, my opinion is I

think it's about being more open with Congress and getting them involved in the analysis and then helping them to be involved, to frame a pathway forward.

So from my experience, that's pretty refreshing and long overdue. You think about it in the defense circles, we should probably question why every year when the PB comes out we do a play by play, like we're opening presents at a birthday party. So it'll be breaking news every other hour, as people start flipping through the J books.

So imagine a day where we have some kind of transparency and stability between the Pentagon and Congress, that the PB releases are really boring and procedural. So that's the seven and the four. And then. How you get to the seven to the four is the, some of the nuances that the media picked up on.

So the first one is kind of the one that grabbed the headlines, which was that the end gap, the next generation air dominance will replace the F 22. As the air force is primary air superiority platform, a news flash. This isn't a surprise for anyone who actually follows what's going on in the air force.

About five years ago, the air force charted uh, air superiority, 2030 working group, which led to a whole bunch of investment decisions. And we tried to forecast what capabilities were needed by the 20, 30 timeframe. No doubt that NGAD was part of, or as a result of that working group. I know, by the way, I'm pretty sure we've been telling Congress that the NGAD is going to replace F 22 for a while behind closed doors.

How else do you think we've been getting about a billion dollars a year to invest into that program? And if it wasn't going to replace something else we wouldn't have that kind of support. I think the number you'll see this year, it was a billion dollars last year, a billion dollars, almost a billion dollars this year.

And if I was a betting man, I'd say you're probably going to see the budget come out next week with about 1.5 or so in it, as it accelerates. And I want to say that the budget forecasting just for NGAD was about \$7 billion over the fight up. That is some serious money. So that's the NGAD replacing the

So the next question people have is why would we just keep the F 22? The F 22 is its own problem child. Yeah, it's great. It looks great at air shows, but at the end of the day, it's not sustainable in the 2030s and it's not upgradable to be competitive either. And there's multiple reasons that all contribute to that.

Number one, it's too small of a fleet, which is a whole different discussion. The second problem is it has too many first-generation first gen technologies that we tried to put into it. So think fighter size, ISA radar, thrust, vectoring, super maneuverability and fighter ELO. Just for starters because we have too small of a fleet.

We actually have too small of a supplier base. And then we only have a finite number of some critical parts, like engines. We can't just go buy more new engines. So that's not a thing they don't exist. And so those are all collectively problems that no. Amount of money in a dump truck can solve.

So you combine all of that with the reality and our future trends, which is, when that F 22 came out, the thing that matters, those attributes that mattered in our platform 30 years ago, some of those matter less today, and the things that mattered less back then are a lot more important now. So I think of a magazine depth range sensor payload that swap sees a SWAT size, weight and power are all more important today than close in super maneuverability and low signatures.

That is narrow aspect of narrowband in nature. So this all about trading one set of attributes today and what we can trade for the things that we need tomorrow. And in the case of the NGAD versus F 22, we're trading some of the attributes that are good in the F 22 for a complete new set of attributes that literally do not exist in the fighter fleet today.

And that's what the F 22 to NGAD is about. The other part of that, the next one is the F 35. Love it hate. It doesn't matter. It's not going anywhere. But there's really three issues that I think the air force really needs Congress to step up help them with the first one is let the technology catch up.

Block four F 35 is interesting, but it's not compelling. I think it gets us to a 20, 25 capability is what the JPO has been saying for a few years, but that's not 2030. And so there's a block five whatever that might be that needs to happen. And any money that we put into block four today, whether it's financial capital political capital we're probably gonna need it in a few years when we actually want to buy more block fives down the road.

And so every block for today, it has to be retrofitted at about 10 years to be this block five or the follow on is going to be for block four, whatever we call it. And that's really a double whammy when you talk to monitorization or readiness. So it's both a, and that's going to be a bill that the air force is not going to be able to afford to pay.

So you take that extra money. So that's the first part of the problem. The other problem, or the other issue that we need help with the air force itself with is you take the, that extra money. And instead of buying platforms to put into the aircraft into the program for the , invested into logistics and the supply chains do not invest it in the airplanes, do this.

And then the planes that we want to buy in 26, we'll have the logistics we need to operate and sustain them in 2026. And then lastly, I would say track affordability along the way, but do not let don't let it be your guide yet. We still have a few years before we can make some big decisions. Then you get to the 15 I don't think it's any surprise that the F 15 fleet will be consolidated under the umbrella of F-15EX.

And it's going to take out a multi-role mission. I don't think that's a surprise to anyone that follows the air force. And then the last part of the seven to four is the F 16 or whatever. So if you've taken care of those first three things in that order N GAD, that fourth thing, you have a lot more options.

And so that's why I say F 16 or whatever. That can be what do we need as far as the mission capacity and the capability, and what's the most economic way to do that for the next 20 years. And I think the air force is thinking Homeland defense and air support for nonlinear operations to think a counter VTO.

And so that could be a future F 35 that's considerably more affordable to procure, operate and sustain. Maybe it is a an F 16 variant. So block 70, something like that. Maybe it's a T seven that becomes an F seven variant from our trainer or maybe it's the the clean sheet design that general brown had talked about, which is being called MRX for multi-role fighter X.

But based on the newest F the F sixteens we have right now, the latest ones based on that. It sounds like we don't have to make that decision or the air force. I won't have to worry about that until about 20, 28 or so. Which coincidentally is the point that coincides with a whole bunch of forks in the road about uh, the program by the 10 beginning the fleet draw down for about a 2035 retirement timeframe, F 15 E divestment in X plus ups, et cetera.

So that's the seven, the

four.

**Eric Lofgren:** [00:09:38] Well, There's just a ton of really interesting stuff that you were just talking about there. Especially the block four to block five, everyone was touting the black forest, standard and bringing the fleet up to there was going to be cost-intensive and you're already looking at block five.

And it's interesting what you were saying on. I guess just the timeframe of this and signaling, right? Cause the Navy every year comes out with their shipbuilding plan. That's like a 30 year plan and the air force has its own methods of signaling, When one of the big trade-offs you talk about is that kind of size of the fleet and the air force.

Isn't just the smallest it's ever been. It's the most diverse it's ever been. And Todd Harrison talks about this a lot. created this equation, just looking at sustainment costs and. Essentially his finding was every time you double the inventory, the unit ons cost falls about 29%. So if you have more and more of the same plane, then you should be getting lower O and S costs.

And that just seems to have always have driven a lot of air force decisions in the past, right? Because we want the biggest and the multi-role fighter to get drive those economies of scale. But there seems to be like I guess a causation problem, right? Because it's like a successful program with low costs causes the air force to want to buy it a whole bunch more like an MQ nine, or an empty one back in the day. Whereas a plane that's more expensive then causes you to, or is not performing well, it causes you to cut back on the buys and that grows the cost. So I guess what's your view on the

**Mike Benitez:** [00:11:06] causality problem?

Yeah, that's really interesting. I think it depends on what you're going after.

So if you're going after some Also, if you combine a platform that has some hard technological problem and you invest in it wisely through IRAD and you invest in the R and D to advance the tech readiness level to a point that you can operationalize that, that, that is one challenge. When you try to do that by layering in five, 10 or 15 of those TRL problems at

the same time, there's so many independent variables that that, cost performance, and really time start to start to be uncontrollable.

And so were the, as a result, in these platforms in the past, we are reacting to, we can only develop technology. So far we're predicting what we can probably think we do, but they're not things that we can promise that, Hey, on December 31st, when you opened your Christmas present, it's going to be a six generation fighter with all these widgets on it.

It's just not, that's not how a developing technology works.

**Eric Lofgren:** [00:12:04] And so what does that actually say about, again, going back to this I'm going to have a 30 year time view of where I'm going to be, how do you communicate that to Congress, that you're going to be iterating through.

In some cases you can't say exactly what that force structure might look like.

**Mike Benitez:** [00:12:18] Yeah. And I think NGAD is going to be the more that the air force can communicate to Congress behind closed doors, about how NGAD as a program is structured. It's inverting the paradigm at a couple of pain points that for a generation or really historically the air force has had with a platform, specifically aircraft development and sustainment.

And so flipping some of those models and go into a government reference architecture type system and moving instead of doing these these 30, 40, 50 year aircraft programs that really just. Atrophy the industrial base because you kill competition for half a century and you have to sustain these platforms.

And 70 about 70% of an Erik, a platform or an aircraft's cost is in the sustainment. And so if you were able to front load that and invest that money up front to develop a platform and then continually redevelop platforms and buying them in small bite sized chunks instead of buying. Yeah, a thousand aircraft, you buy, a hundred and that allows that the second competitor that maybe didn't win that contract to iterate on his design and get into the next hundred aircraft.

And in the next hundred aircraft it's. So it actually helps reinvigorate the aeronautics industrial base. And it also provides a whole bunch of on-ramps for all of the other technologies that are going on, whether it's a hardware, software sensors, algorithms so there's a lot of things happening.

And I think that NGAD is going to be a framework as long as Congress we can get them to agree to it.

**Eric Lofgren:** [00:13:51] One thing that was striking about the set of articles on the seven to four plus one was that they were really talking about NGAD as like a single system. Whereas there was this kind of idea that.

I, it felt like, the PCA program was a little bit co-opted and then turned into this portfolio of systems that might be coming out of it in the digital century series model. What's your view

on that kind of is it singular or is it still like an evolving and I, and does this actually get to your view of having a government led architecture and what that means?

**Mike Benitez:** [00:14:21] well, I don't want to comment too much on it cause I actually I'm involved in that a little bit. I'll plead the fifth on some of that, but I will say that What I've already said about it. Is it changing the paradigm of being involved early with industry it's a two way conversation and having them be in the seat with us as we're going through the tech development and what are the attributes for a platform that we're looking for and then getting that buy-in.

And so it's not really is that really a competition? I'd say it's a collaboration with industry, which makes it way different than than what we've seen in the past,

but,

**Eric Lofgren:** [00:14:52] There's this concept of, 70% of the cost of aircraft is in, sustainment. And I don't think that's actually like a law of nature, I think as you were saying, like you have, more agile processes, you could potentially like shift that out, but and do things a little bit differently and draw more money into investment and actually lower the overall sustainment costs, is that one way out of the trap of prioritizing either readiness or modernization, or like, how do you think about this kind of like trade off between readiness and modernization?

**Mike Benitez:** [00:15:23] Oh, that's a good question. well I think. It's not binary, first of all I think the air force and really the military usually sells budgets with a theme. And so here's our, \$150 billion budget proposal. And here's the theme of the budget. At the end of the day, doesn't need to have a theme.

It just needs to make sense. It's so I don't think when you, when it's not binary, you don't have to trade readiness for monetization. What you need to do is figure out where you're going. You're going to accept risk in the portfolio. And instead of choosing what we're going to invest in, we need to make better decisions.

What we're not going to invest in. And we've been the air force has been notoriously bad about that, and it's not it's not helped when we don't have a really good compelling narrative to get Congress to agree, to stop funding something. And so there's tons of Examples where Congress would buy things that the military has said that they don't want, but the political pressures when at the end of the day.

And so that's a big part of of the conversation is being all of these things that we're talking about. They all have a political aspect to it that you can't ignore.

**Eric Lofgren:** [00:16:24] So let's move into a round of retire it or not. And these are beneath as his own personal views of what's going on. Or you could just describe what the trade-offs are in them.

So first let's start with one of those things that have been asked to be retired, but Congress will not let it be retired. The A-10.

**Mike Benitez:** [00:16:42] Awesome. That's this is the plus one, right? Exactly. So we know we have some time and we really need to do, I think the message here the air force, his message should be, we need to optimize the fleet.

And so we've already invested in re whinging much of the fleet. We could talk about how that was done under political duress. And, but anyways, it's getting funded. Right now we have about 281, and I think we've seen the air force talk for a few years that they want to get down to two 18. And that numbers probably coincides with the there's an NDA.

I think 2016 has a legal limit of P what's it called? PMI. It's operational aircraft of 171 aircraft. So when you add up a test training It spares, you end up getting to about two 18, but really I think that's more that conversation about the A-10 platform should be more about the community which has nine op squadrons.

And so I think what you'll likely see is the air force is going to try to consolidate some of those squadrons. And some of those squadrons aren't even really squadron size, to be honest with you, they're half squadrons just based on the draw down of the A-10, and it's spread out. So that's where the a 10 is that right now.

If the air force win this year, if the air force can convince Congress not to go from nine to six squadrons, maybe to go to seven you can do that if we get through this year and the air force, can't convince Congress to even go from nine op squadrons to eight op squadrons. So the A-10 than that, we're stuck with that thing for a long time.

And it's gonna it's good in the near term for Cost-effectiveness but in the longterm that's money that we can't put into some of these other platforms to get them to where they need to be on time. So if you remember the one of the problems the air force ran into was with maintenance. And so in the A-10, the F 35 program assumed because it was in the program that it was to replace the Aten.

And so in the air force programming for the manpower, the A-10 maintainers were to transition over to supporting the F 35 program. When the A-10 wasn't divested the air force was stuck with a maintenance manpower bill that it couldn't pay. And so we had this huge manpower issue for maintainers.

And so we ended up getting rid of a lot of experienced maintainers, then that happened. And then we had to onboard a whole bunch of maintainers. And so in the past three years or so, is that a lot of young maintainers that are growing out in the flight line. So that's kinda the 10, I think that nine to six, if we can get the two 18 that'd be great.

I think that's like the air is a vision for the year, but honestly, if you can get down to two 50, I call it a win

**Eric Lofgren:** [00:19:09] and what's the close air support kind of vision of the future for the air force?

**Mike Benitez:** [00:19:14] That's a great question. Back probably five, six years ago, there was an internal study called , which was a, what the next A-10 w kind of attack airplane would look like.

It didn't last for long. It was an informal unfunded study, but we were trying to figure out what the attributes of something to replace the A-10, and, there was the The publicity are out the quote competition that was mandated in law. And so that we have there's attributes there, depending on how you set the scenario up, you could basically script the winner.

And so that's not, it's not even worthy of a breaking that down, but if you want to talk about the future fight that's a whole follow on podcast that we can we can rap about.

Okay,

**Eric Lofgren:** [00:19:54] good enough. So let's move on to the next retired or not the RQ for global

**Mike Benitez:** [00:19:58] Hawk.

Oh, this thing just like for 20 years, the air force has been trying to divest some of them.

So most people probably don't realize that the fleet right now, it's about 30 to 35 global Hawks, and there's three types. There's a block 20, a block 30 and a block 40. And so you have to talk about this in the types of blue, global Hawks, not the number of global Hawks. So the block 40 is the newest, and I think we have about 10 or 12 of them.

And the air force wants to keep them the block. 30 is a majority of the of the global Hawk fleet right now. And that's the one that the air force has been trying to get rid of for a long time. And then you have the block 20, which I'll talk about in a second. So what was interesting this a couple of weeks ago, Is in a discussion about the in the posture statement from general brown, he talked about the need to divest the global Hawk.

And so to put that money into a quote penetrating ISR platform. And so I think you're going to see in the next couple of years what that penetrating ISR platform replacement is, and and come to see the light of day. And so that's kinda where I think that the, what general Brown's talking about there, but **he's definitely mentioned the penetrating ISR platform to replace the global Hawk.**

As a sub argument. Now you get into the earliest ones, the block twenties, and that's really an argument about what's called bacon. It's your battlefield air command node. So there's actually seven of these platforms around the whole world. Four of them are what's called ETQ fours. And then there's three.

What are, what's your 11 they're basically manned corporate jets with the same backend system. So three are man and forest unmanned. And so here's, what's really interesting is the air force wants to divest the unmanned part of this, but by the more manned one, so by more corporate jets with the bacon equipment on it, but get rid of the unmanned ones.



So these are the ones that that just do it or written the sky for 10 or 12 hours at a time. And so it's not exactly the most Exciting mission. I would say exciting mission, but yeah, survivable but from the man versus unmanned argument it's really interesting of why you would take a mission.

That is it's, it is perfect to be automatized. Why the air force is not going that way. So that's really interesting to see how that one shakes out. They want to buy more manned aircraft and get rid of the unmanned aircraft for a, for bacon.

So think if the air, I think the air force is trying to go from about 34 global Hawks down to about 10. And so if they can, if they can get even half of that, this year, that is money in the bank, that they can reinvest where they need to

**Eric Lofgren:** [00:22:22] on the new penetrating ISR. The only one that I've heard from that is the RQ 180.

Do you have any hot dates

**Mike Benitez:** [00:22:29] on it? No comment. Good enough.

**Eric Lofgren:** [00:22:32] All right. So the last one retired or not let's talk about the KC one 35.

**Mike Benitez:** [00:22:36] Oh, okay. This is a tough one. All right. This gets into a, to acquisition go figure. So therefore it's painted itself at a quarter with what should have been a very simple program.

We're 20 years into the KC ex program, which is what the KC 46 is. How are we doing for commercial off the shelf? Adapted solution 20 years later, we're still messing with it. So the KC 46 was always designed to replace the KC one 35. It always has been the problem is now the KC 10 retirement, which is a much larger tanker, but there's much less of them.

There's about 55 to 60 of them. But the KC re 10 retirement has come into the fold when sequestrations happened as a way to cut. If we cut entire fleets, we can save a lot of money. So it was a money decision. And now what's really interesting now is as we start looking at KC 46, it's so far behind that.

Now we are running into problems with KC 10 sustainment and readiness. And so there's some cascading effects and you're not going to be able to buy enough. KC 46 is to fix the KC 10 shortfall. They are not, they're not the same capacity. They're not in the same league and they weren't designed to be, and they shouldn't be, so that's the the KC 46 problem.

I think you're going to see there are some, there's some creative solutions out there, but they're probably not ones that are palatable to the air force, but they are for industry. I'll say that.

**Eric Lofgren:** [00:23:54] It seems like there's this. Really hard challenges, aligning retirements of aircraft. Like I expect this aircraft will retire and let's just say, 20 years.

And then by the time it gets there, maybe Congress does it, let it happen. Or the follow-on program that I had nicely planned to be operating at that time, just turned out to have all these delays. And so it just, the maintenance thing on the 10 was a telling story.

They're just like yep. Optimal use resources.

**Mike Benitez:** [00:24:22] Exactly. Yeah. But yeah, but I will say that there's probably, if there's ever a, an era in the air force where creative ideas are welcome, it's now, because we have so many problems that I think people are just looking for some fresh ideas and like, how do we stop digging ourselves into these holes?

And so for the tanker fleet problem I think that there's a, there's a market and a business opportunity if the air force would open it up. So I think of like how the merchant Marine support the Navy. There's probably a future for contracted civil tanker bridges.

And so where you could actually go from the United States over the Atlantic or over the Pacific, and you're not in theater, you're just transporting a dragging aircraft to, and from theater. And that would free up our military assigned tankers for military operations. And so if he did that, it would actually change the paradigm of tanker planning and you would actually create some some industry off-ramps for some interesting some interesting opportunities that could happen.

Yeah,

**Eric Lofgren:** [00:25:16] I've heard about a couple, reports that they're looking into, like asset service model for tankers. And it seems to make a lot of sense. We'll see how they go with that. I guess it was contingent on the KC 46. And as that kind of proceeds, there's a case or not a case, so let's move

**Mike Benitez:** [00:25:32] on.

And on that so it's the KC 46 is a seven 67 based tanker. We, they, Boeing has developed a seven, six, seven base taker 10 years ago, and there's about four nations that operated already. So it's not like it's that we've, we have overcomplicated something that should've been very simple referenced the boom and all the other stuff that we're trying to do with it.

So yes, we could go faster, but we, like I said before, we add too many independent variables to make it unnecessarily complex. And then this is what we ended up with.

**Eric Lofgren:** [00:26:00] I've seen a lot of like interesting articles from Airbus on their tanker and everything. Like they keep saying everything's going so great.

And the last one is tanking goes automatic. And then you look back on that competition and you're like what could have been, so I'll move on from that one. So you're an F 15 guy, but you know, you're dealing with all of the aircraft right now. There's two sides that are arguing in this debate and you say both aircraft are needed.

Can you just talk a little bit

**Mike Benitez:** [00:26:28] about that?

Oh boy. Yep. Okay. So before to have that discussion look at the Navy, have you, did you hear the the debates and all the press about the F 18 versus the F 35 C debate? Have you heard that.

**Eric Lofgren:** [00:26:41] I'm not clued in on him. I just,

**Mike Benitez:** [00:26:43] because there isn't one, it doesn't exist because the Navy and those that follow Naval aviation, they realized that the carrier Airwing needs a balanced set of attributes.

That's, it's very difficult of them really. So if you look right now, the Navy they have a very simple problem cause they only have a few uh, TACAIR platforms. So this year the Navy is curtailing F 18 procurement, and they're going to double down and invest that in their carrier version of an NGAD for tomorrow.

And that's going to be complimented, guess what? By the F 35. So it's going to be a two fighter carrier air wing, and there's no one debates that because it makes sense way you view it between Redundancy resiliency, capacity capability, sustainability logistics, like any way that you view it. That makes sense.

If you go to a unified platform on the carrier you have created multiple single points of failure in the logistics supply chain capability, gaps, attributes, et cetera. Okay. So that's the Navy. No one ever says anything about that. It's an analyst look at the air force, but instead of the fighters, let's look at the bombers for a second.

So for 50 years, the vision for the air force has been the, have a two, two types of bombers. In the entire fleet. And guess what, there's no debates on that either even today. So yeah, we have a three bomber fleet, but that was because of the B2 program, a debacle, but people don't remember in the eighties, the original vision, this is the height of the cold war was for about 130 B2C and about 75 or so B 50 twos.

So it was a two bomber fleet. Yeah, it didn't happen. And the B one has its own political backstory of how it got on canceled to be the stop gap, but that was the forced design and no one ever argued that, that wasn't. That wasn't the thing. That's a, that's the way forward. I guess what we're doing now for the future, it's a two bomber fleet.

You have a B 21 and a, B 52. No one is arguing against that. And you go, why? Because it makes sense. Anyway, you cut it. So now you take all that and you apply it to the air force F-15EX versus F 35, and people lose their minds. It is ridiculous. It's a great example of how you can have the smartest people in the world.

They start to sound really dumb when you start letting emotion and bias just creep into the discussion and they don't even realize it. And it leads to things like these sweeping claims and they start speaking in absolutes. And anytime you start hearing that, just take a step back, go wait a minute.

What's going on here? Or they try to use a very cherry-picked war stories or really data and analogies that are from 25, 35, 40 years ago to try to support their position. So anytime I hear that, it's a it's really unfortunate that it's really just a emotional debate for a reasons that the reasons are pretty clear to me.

But I don't think the general public realizes Why that's so emotional and it really goes back to why the B2, we only have 20 B twos and why we only have yeah. Oh, 185. That's F22. So it goes through the death spiral of procurement for investing in technology for CU game-changer. So yeah, I get it, all of these, this older generation.

But these over the top talking points and soundbites have a ton of scar tissue from that era. And I totally understand it. And I would too, if I grew up in that era, but really today's about moving and looking forward. And if you're objective and you look at the attributes. And what the different platforms can and can't do, you'll see that both of them are required.

And so you can blend them together. You can pull them apart and both of them together, they compliment each other very well. So one will not, no platform by itself can survive. It is a system which is what forces on comes in, which is why general brown wants to go from seven to four and not seven to one.

uh, And I'll give you, I'll give you one example about how the two could compliment each other and and it's not stealth. So everyone wants to talk about cell that's it's, that's its own thing. And I won't talk about that for a whole bunch of reasons where it's good and where it's bad, but let's talk about the radar.

So the F 35 uses the APG 81 radar. So it's a very small radar because it's a smaller craft. It's actually angled in the nose, so it's not installed flat. So it's angled. So for a low observer ability, and then it's optimized, the software is optimized to transmit and receive in a way that reduces its signature.

So its ability to be detected. And all of that system is made by by Northrop Grumman. So now the F 15 E and the F 15 E X, it uses the APG 82, which is. It's the newest, largest, most powerful ISA radar in the us inventory. That's it and not the air force flying inventory. It's optimized because it's not an ELO platform.

It is actually optimized for extremely high power and long range detection and tracking and oh, by the way, that's built by Raytheon. And so now we have two different systems with two different attributes. That are built by two different contractors that use two different sets of algorithms and techniques.

And so when you look at that, even two of those platforms, side-by-side looking at the same thing, a contractor AEs algorithm to do, function X could be terrible compared to contractor bees, but in another environment, a contractor, a, it might be able to do function, AB and C, but the other contractor could just crush it.

And so we it's interesting to see that diversity of equipment and algorithms and putting them in those environments of how we can actually leverage the best of both worlds to create some really interesting effects. And so we'll be when we go to these one platform

that does everything and there is no other way we really start to eliminate a whole bunch of other options that we take it off the table.

Some.

**Eric Lofgren:** [00:32:18] Yeah, whenever we think at least in department offense, whenever we think about the next generation aircraft, it's if that aircraft is going to be viable through the bureaucracy, it has to be better than the legacy in every single way.

Or else it just doesn't work. And because usually we again have that kind of like single thing to rule them all kind of mindset, but it seems like the way that you're talking is like, there's just inherently, always going to be these trade-offs. In design of systems and that does it, and that leads to a more disaggregated view.

you know, As a tester, do you have to always, check the box on it's better in every way exactly. As the requirement was? Or is it just like, Hey, as long as it's better in this one area and it's, and the users like it, then it should be, able to be inventoried.

**Mike Benitez:** [00:33:04] So the, so there's two parts of that.

I think the first part is there, there is a, specification compliance aspect of test. It work as advertised D are we getting what we paid for? And then there's the more operational test which is how do we use it? How do we optimize it to produce the best battlefield effects we can. And then we write that down and we codify it and we train the air force in the tactics to do that.

So when we field something we feel that with with, Hey, here's the tactics that you should use with it. And that's really what where I work right now is we get the equipment that the air force will see in a few years. So maybe two to three years ahead of time, sometimes four or five we look a little bit left into the developmental test world to try to help them out.

And so when we get something they don't just throw it in the old days, there's developmental tests and operational tests, and they would do DT and its own world spec compliance verification, and then throw it over the fence. And then operational tests would get it. And we're like this isn't actually usable at all for the war fighter, but that's not the lens that Specification compliance kind of lives in.

And so we actually have very good relationships across the operational test and developmental test enterprise to make sure that we can get early involvement to view that equipment through two different lenses. And it really, it goes about just like that radar example, if only one of you was doing it, you either one would get it wrong.

And so you need both people looking at it from their, both their positions to try to make the best informed recommendation and decisions to either mature tweak or modify the hardware software platform. So when it does get to the warfighter, it is, it's. If we call it blue, it's blue for proof. So it's Lieutenant proof, so you can take it out and you can use it.

And it makes sense.

**Eric Lofgren:** [00:34:46] sticking with the test and evaluation, chief of staff of the air force CQ brown, his mantra has been accelerate change or lose. What does that mean for the test and valuation community to align with that goal?

**Mike Benitez:** [00:34:57] Yeah, like I said, we've probably a few years, at least a few years before a general round took over the test community has been on that has been on that path.

We actually about a year before he took over the air force, did a internal research, we have formed a big team and we briefed a bunch of people and we looked at what, if we were to rebuild the entire test enterprise, what would it look like? **What if we could just move to a we don't have developmental tests and operational tests.**

**We just have tests.** And instead of in this test enterprise, who would it report to and how would it operate in and how would it streamline the ability to to get things through to the war fighter faster? And at the end of the day we ended up not changing for a whole bunch of reasons. But we are constantly looking at how do we optimize herself to advance the capabilities for guests and get it to the war fighter faster and deliver a better product at the end of the day.

But I'd say that. Left of that accelerate change or lose kind of starts with industry. And so they're not going to like it, if you deliver test a better product and they won a test is going to go a lot smoother. And so the probably one of the worst kept secret in tests that anyone that lives in test will tell you that nothing that has ever been delivered for the air force to test shows up in a works, right?

**Nothing on day one, nothing in the history of test has ever worked on day one when it shows up.** And so there's a ton of things that we have to go through whether it's software tweaks, pilot vehicle interface and moving buttons around. So it makes sense or, Hey, I'm gonna push this button. The aircraft shuts off.

That's not supposed to happen. And so there's glitches and stuff. There's hardware. So you look at like size, weight and power. So you change one thing in an aircraft and it creates a problem somewhere else within environmental cooling instead of the avionics overheat. So there's all these problems that we ended up we get deal with.

And so we make sure that we hold the line. And so when it gets to the warfighter, it actually works as advertised. And the last thing that they need to be worried about is, Hey, I wonder if this thing is engineered, right? Because if it falls apart, I'm kinda screwed. And so they're depending on the equipment when it shows up and that's the lens that we view it at.

But yeah, it garbage in garbage out. And if something showed up faster and it was it was. Working more better when it started Tessa go a whole lot smoother. So that's my that's my pitch on that. I'm

**Eric Lofgren:** [00:37:08] wondering, when I just think about, at least in software and like the architecture of some of these systems, like software wants to move super fast.

And get deployed, almost continuously in some cases. So the data and app layer is pretty quick. And then maybe for the operational flight program or hardware like different types of sensors, maybe that's on a longer time cycle. Usually I see OT and ne and like TTD, like these are very discreet.

Like here it is on the schedule, as opposed to like, having kind of a more continuous or staggered view of how testing could be done. This is what I just say there make any sense

**Mike Benitez:** [00:37:43] and some of it is the paradigm of contracting. And so the way that things are contracted so we contract OFP development for software, and it says that in this contract, we have this much money this many months to deliver this at the end.

And again, if you start with bad code in the beginning and we're manually going through and finding problems and writing up problem reports, and we spent all of our time fixing all these software glitches at the end, we run out of money and time. And the contract and the capability at the end is maybe not the same that we wanted, but it's going to work.

And so we have some, we have a lot of contracting stipulations that kind of anchor us to the way that we do software development. It could be done better, obviously. That's a whole different conversation but there's a paradigm there and I think we'll get there eventually when we get to, if we can get to agile software development with dev sec ops and actually are on the loop to provide that feedback right now, it's that exist a little bit, but not dev sec ops is not exist on aircraft and for the fighter or bomber community.

So

**Eric Lofgren:** [00:38:46] have you, what have you learned from like the F 35 C two D two, is that kind of getting closer to that vision or.

**Mike Benitez:** [00:38:53] Yeah, that's the most mature because it was structured that way first. I'll tell you that is trying to do it way, way harder because the software and the , isn't very easy to upgrade without creating other problems in the code that have to be fixed.

And that's called racer and then F 15 is actually moving to agile software. It's called CD and I, and that'll happen probably in a year or two, but again, it starts with the contract structure. And then in the contract, how do you do it? It's getting better, but it took even when we moved to it, it's taken a couple years just to be able to develop.

A software cycle that works so lots of growing pains. We're hoping that we can use this lessons learned and it's not an F-35 problem. It's just the nature of trying to do agile software development on an aircraft that is agnostic of the contractor it's agnostic of the platform. And so I just want to be very clear.

It's not an F 35 problem. It is a problem and moving to that kind of structure so we can get to that paradigm and that process with the F 35 and we can move, port those lessons over to the other platforms. I think they're going to catch up a lot faster. Is it.

**Eric Lofgren:** [00:39:59] It is, it's easier to get after that on a new platform than it is on an existing one.

You have hopes for the end

**Mike Benitez:** [00:40:05] gap. Yeah. So it's not to say it was was, it was a good thing to start because there's honestly there's a lot of money flowing into the program that allows us to to do something like that. You take something like F 15, which has some money flowing into the program, but not, it's pennies compared to the F 35 program and that's a massive program.

And so it's easier to to go after the big lifts like that, looking for big wins when you have a bigger pot of money to do it with learn your lessons on that when you have some capital and then you can be very efficient with the other portfolios that don't have that capital to burn.

**Eric Lofgren:** [00:40:36] Okay. So I want to get to an orthogonal issue with. Testing evaluation. And I'm going to read you a quote from a former Navy commander of operational test and evaluation all the way back in 1976. All right. Go for it.

**Mike Benitez:** [00:40:50] So here's the quote,

**Eric Lofgren:** [00:40:51] and then I want you to react to it again and again, in briefings and conferences I'm asked, what are the major problems in T and E?

I think that there's only one T and D problem, and it's not in T and E it's the planning, programming and budgeting system starting in 1970 with the blue ribbon panel. And following thereafter with the commission on government procurement, we have been establishing a defense industry material acquisition system that is achievement oriented.

Yeah, we are still programming and appropriating our funds on a calendar oriented system. And when we reached the point where the calendar says that we should be going into production and the test day will not support, this is simply too painful to try to reprogram large amounts of funds on short notice from procurement into RDT and E and make it work until we come to grips with this problem.

I don't think we're going to make any progress on improving TA ni by looking at other smaller teeny problems. So

**Mike Benitez:** [00:41:41] boy, alright so down for me. That's a long quote. Okay. I laughed so PPV B and E that's the extra P that I add first start with XRP, the extra problems for politics.

You have to include politics at everything. So there's a, so PPP B and E sunk cost fallacy are the two things that jump out to me in that. So you and I have talked a little bit about Let's just call it that sounds better. So I don't have to keep saying PPP. So that's like the tax code, right?

So it's archaic. Everyone hates it, but no one seems to have the the trifecta required to change it. So they need time, energy, and influence. We could make a better tax code tomorrow if it benefited industry, but right now there's an entire industry set up. The benefit the way it's structured.



And so that's the way it persists. So the budgeting process is the same way. So you think that like the politicians that have been in Congress for 30 plus years would have at least one of those, which is the influence to then direct the commission that could devote the time and energy to actually make the recommendations for some reform.

That's a whole other debate. There's a, there's consumed by what I think are more trivial defense matters. So that's what they're the oxygen gets consumed by that, but for the P three bee, it comes down to colors and lines of money. And so I can tell you where I live you're familiar with the colors of money.

So you have the RDT and E versus O and M. And then how annual planning works. And so one year money versus two year money. There's different authorities between them or a star one year money, a multi-year money should say. We are a great example. I work in a operational test and evaluation wing.

So tests and evaluation, you know, how much RDT, any funding we get. Zero, zero. We, our entire wing is runs off of O and M money which is 3,400 muddly. And so we actually, even though we're operational test and evaluation, we have the, our weapons system evaluation program for the entire department of defense.

We use air force, ONM money to fund it, and that money is the same pot that competes with combat coded units for resources. It shouldn't have to be that way, but that's just the way it is. And then within our, so that's the colors of money and then we have lines of money. And program element codes, you're pretty familiar with peccs.

Our, where I work has over 50 different pecks of money. And you can't move a penny between those little 50 little stove pipes. And, oh, by the way, because of the, if you back up into the first two PS, the first tire of the middle two piece, the planning and programming that money was put in those little stove pipes two and a half years before we see it.

And so the environment at the execution level changes and like, Hey, you know, it'd be great if he could put this money from here over to there, but Nope, can't do it not allowed. And so we're at the end user, we see, the output we're in the east side of it. We see this and I'm like this is terrible.

So it's some of the stuff that makes no sense. The example that I like to use when I talk to people is we have about, I don't know, 20 or so different platforms in our wing that we do test on. And so our RQ four they're in different pecks, as you can imagine.

And the RQ four has, we'll call it \$200,000 for tactics development and it's, and this, the way the program is structured, there's a program manager that puts money in this and that's the money at the end. We have \$200,000 for tactics development, and then we also have the F-22 and for the way that the budget worked out, we received \$0 for tactics development.

It says the end user, we go, Hey if I had \$200,000 to put in the tactics development, would I rather. Put it into the RFQ four or put it into the F-22 they're like everyone would say put it in the F 22. That's great, but I can't. So it stays with the RQ four. And that's the that is the execution level of the P3 B E paradigm that we've been stuck in for probably 50 years.

Now. It wasn't the 1960s. We moved to that system. That was a McNamara, yep. Yeah. So then the other part of that quote was what was the sunk cost fallacy? That's right. It's a, that goes back to what happens when you get a program that's behind schedule and it gets behind schedule because either the contract was structured wrong.

So a, the lowest price technically feasible, or it's just too much too much technology that they're trying to get on a timeline it's not feasible. So then by the time that we see some of the stuff, it could be in developmental tests with issues for an entire FYDP so five years, and then it shows up into operational tests.

We get it and there's so much more momentum to get it to the war fighter that it's it becomes the unkillable program. Like we're. And at the end of the day, even though that were tests were operational tests, we actually don't make a decision. We make recommendations on on fielding and we assess capabilities and limitations, but we don't say, Hey, we're not feeling this to the warfighter.

We just make recommendations. And so there's a there's been some interesting examples where we recommended don't feel this because of X, Y, and Z. The air force has come back and said the war fighter needs it. Okay. And sure enough. About six months later when we said it was going to happen, they said, Hey, all these are broken and there's no spare hours to fix them.

And now they're usable and everyone's pissed off. Oh yeah. We told you it was gonna happen. It's on the second page of the report. So it's a, it's an interesting example paradigm that we live in for a. For that. That's a good, that's a great quote. I should hang that on my wall from 1970, 1976, you said in 1976.

Oh Jesus.

**Eric Lofgren:** [00:46:59] The sunk cost one. It just always seems to get me cause it's all of the momentum and like the procurement money's there, senators and congressmen and their constituents that everybody's we gotta get this thing in and we don't even have anything to backfill it. Even if we did one delay it.

It's not we set up multiple programs that would be competing and we didn't know which one would get it into production, right? Yeah.

**Mike Benitez:** [00:47:20] It's a, it's yeah. All in basically. There's no, there's not multiple on-ramps and off-ramps, so you look at like the air battle management system, AVMs, tons of on-ramps and there's political off-ramps that were put in place for that program.

And so it becomes more palatable for, you could take a little bit more risk in a lot of areas because it's a lot more palatable than if you go all in on something like the Army's FCS. I think they spent \$20 billion and then canceled the program. That's one and a half aircraft carriers. So that's, and it delivered nothing because it was too much technology and it got stuck in tech development for so long.

So yeah, big lift, big win. But man, if you don't, you can't always go for home runs every time.

**Eric Lofgren:** [00:47:59] I think from the FCS, it was a \$20 billion development and they got 3 billion in before they canceled it. So that's what it was. Yeah. Yeah. That would be 20 billion of just a couple of days.

Stock would be even more, but that's been one of the,

**Mike Benitez:** [00:48:12] I want to get it. I remember Senator McCain always yelling about that one. So well, Senator McCain

**Eric Lofgren:** [00:48:16] yells pretty funnily about a lot of programs and it's just oh, this program failed, Who's accountable for this. Oh, that guy got promoted to be like a general officer somewhere else in several years ago, but it wasn't really his fault anyway, because he was just handed a program from someone else.

**Mike Benitez:** [00:48:30] Yeah, that's a good point. So when we have these programs that are in development for say 10 years, that's five or six different program managers have been in charge of that program. And it's really hard. Not only to have continuity when you're talking about Hey, four years ago, this was the plan. And this was the guy in industry I've talked to.

Who's been there for 20 years, but you also have it says continuity, but there's also accountability that goes with that. Hey, the guy that made the decision three program managers ago, I'm left dealing with, you're like, oh man, that sucks. you know, when you look at just how even as a military officer, like we, we get annual reports on our performance.

No one went back for the guy who made this bad decision. Three program managers go and modified his performance report. It's the guy that gets left holding the bag.

**Eric Lofgren:** [00:49:12] I want to stick with this guy here from 1976, because he said some other interesting things. I want you to react to him.

Cause he says, okay, I'm not going to quote this because it's a long quote, but he's basically saying I'm perfectly willing to test anything. Anybody can name without measures of effectiveness from stated and attempt, for example I'm perfectly willing to use measures of effectiveness, but you don't want to over concentrate on them because essentially it's hard for anyone to know what they mean.

So like he was talking about an eight-inch gun aboard a ship, which is a Navy thing saying like, is it eight rounds a minute or 12 rounds a minute? Is that going to make a big difference? Maybe who knows? And even then, like, when you talk about a certain thing, is it hits per gun per minute, early hits, there's like lots of different ways to like.

Define a metric. And if you measure one thing, then there's probably going to be attributes of another thing that you left out that could have or should have been looked at. So I guess

what's your view of just can you just take a bunch of smart people that are testers and just put them out there and let them, shake it down in any, in all the creative ways that they can.

And that should be the test versus like attempt or

**Mike Benitez:** [00:50:15] well data. So you need both. So you're talking about as objective versus subjective, really. where I live and operational test. We have a pretty good balance of both there's sometimes we go out and we have to get objective test points. And so we get a run card or certain parameters because we're trying to collect some data to see how the system operates, whether it's target location or whether it's electronic attack, whether it's you name it.

And then there's the subjective things where we operate this equipment and we say, Hey, this is terrible. Because In this environment, it won't work or, Hey, this is a single point of failure here, and we were able to shape to an extent, a little bit how the equipment, the technology gets tweaked for the warfighter.

So th the operational test absolutely provides a subjective lens for that. So we don't go out necessarily with these metrics that we're looking to score every flight. Uh, And that's why our. In an average, good example. So in an average fighter squadron, you might have a, you have a handful of instructors.

You have a weapons school graduate, maybe two, if you're lucky that includes the commander. And like the chief instructor, it's usually a weapons school graduate. And then you have the average person squad probably has 500, 600 hours of of experience in our wing, our fighter pilot squadrons, our fighter squadrons have on average, half of the squadron, our weapon school graduates, and everyone has about 2000 hours of experience.

And so we do that. So we can actually use our experience and all of us have different experiences, looking at the same equipment to make those subjective assessments, inputs. And we there's a lot of collaboration that goes on to mature the product to get it where it needs to be. But I guess

**Eric Lofgren:** [00:51:58] the question here might be, should it be easier to update a test and evaluation master plans or should those things be able to iterate on more continuous basis?

Or is there a good value from like before milestone B locking down a set of things that really should be built to?

**Mike Benitez:** [00:52:12] I think when the planning assumptions changed, so you have to go back and look at the plan. And I can't think of an example off the top of my head where we did something, the planning assumptions changed, and we went back.

I can tell you that there is a really funny story that happened in probably six months ago or so for some it was a milestone review for software. And we had gotten the contractor on this platform had been doing pretty well with software development. And so we were just, we just kept going because our, we operated pretty much the same pace or throughput just depends on what we get and they were delivered better product.

On time. And so we were able to get through all the tests we need to do, and we kept going. And so we had to go into this conference, which was the I think it was a one-star general had the approval for the milestone authority to go ahead. And we had to tell them like, yeah we actually hit that milestone three months ago, we just kept going.

And he was like, oh why are we having this decision brief? I don't know, but we just kept going, like, why would we stop and wait three months for a meeting, this mixed us. That's the one star was like, yes, press. I completely agree. But I feel like I should have a say in this you do, that's why we're here.

So it's not it's not as structured. I think as most people, you know, they read the reports and things and they see it's a very binary sterile environment that we test things. A big part of testing is interacting in an environment with the hardware software and then getting that experience and insights.

And so that's a very subjective.

**Eric Lofgren:** [00:53:30] Yeah. That's interesting the way that you're framing it there. Cause it seems like the formal process would have caused you to just like work, stop, right? Wait several months. And then you have all of this coordination issue, you could imagine like a web of these things happening and how that could affect timelines.

But you guys just went ahead with it and you hear about this several times from people like, oh, we were able to get this pro program started by randomly, there was money in this account and we were able to get here and we got this guy or it seems like these very kind of individual stories that, remind me of like world war II stories

versus oh, it was just me

and this little group of buddies.

And we took that hill or whatever. And it's just like this really, individuated kind of action.

**Mike Benitez:** [00:54:09] I'll tell you that the, at the end of the day, like all it's all it's people, right? So we are the tests, the air force test enterprise has probably. Somewhere around 20,000 people in it, and they're all doing something and they're all trying to do the good.

And so when we there's a lot of collaboration that happens and people are always trying to find a way to to get things to the war fighter faster and w without speeding or breaking laws. And so there's a moral, legal, ethical limits, but, the dialogue between the program managers, the testers and really the the headquarters is the trifecta of how we were able to keep it, keep that open dialogue, to Hey, we're not surprising anyone.

We're just, here's what we're doing. Tell us if you want us to not do this. Okay, we're going to keep pressing and impressed. The test is of how we've been. We've been working for the past few years and it's been pretty good. So

**Eric Lofgren:** [00:54:55] talking about innovating here, you wrote that agile combat employment could be the most disruptive effects of anything the air force can do in the near term and quote.

So what is agile combat employment and what does the USA F need to do to make that a reality?

**Mike Benitez:** [00:55:10] Oh, shifting gears. Okay. So agile combat employment, I'll just call it ACE. So ACE is basically the air forces effort to ween the force, the fighting force off of giant vulnerable bases. That really today are just juicy targets.

So night one in the war, I guess what's going to be a target, those huge air bases with all of your aircraft parks side by side. So It, the closer you are to the threat the closer to the basis to the threat, which means the base is going to be more vulnerable. It's that's geography.

So ACE is about how do we get closer to the threat without a base? And so it's all about dispersion of mass. So that's really what it is when I said, like, why it's important, why it matters. It's about generating effects. So there's internal and there's external. So everything that you and that you can Google it, there's a lot of stuff about ACE in the past 18 or 24 months that's been in the press, but most of it has been affects related.

That's external. So think Hey, we're doing, we're moving this around China, this Russia that so I'm not going to talk about that. I'm going to talk about why it matters internally to the air force. It's so ACE where I. Like a S is that it's all about reframing how the air force sheets moves and communicates.

We historically do not look at fighting by shooting, moving and communicating. And so if we view the problem of shoot me, then communicate, then you start to look at what do we need to invest in so I can shoot better. I can move better and I can communicate better. And if you think of it as like a pie chart historically and you break it up into three slices of the pie, historically the air force views, probably an 80% sheet, a slice of the pie.

There's probably 10% move at your logistics. And then 10% communicate, like how do I command and control this? And those last two, logistics and calm, like it isn't sexy, but that's, some of the most unsexy things to to, to the public is the most important thing to the war fighter.

And I can't count how many times I've seen some really awesome fighter pilots build a tactical scenario. They go out and execute, then they debrief. But then the whole thing makes absolutely no sense because it ignores things like. Movement and access to munitions. How do I get fuel? What's the sort of generation capacity?

Why would I not be attacked before it took off? And so there's all these, this mentality. You combine that with, these rotations, to these bases in the middle east that, outside of a random order attack here and there, there's, they're not really that vulnerable not when you compare it to a high fight, like a versa Russia or China.

And so that's infected the war in core for a generation. And so I think ACE is awesome because it forces the air force to go back and approach the problem for the more holistic view of the shoot move and communicate. if we could do that maybe maybe ACE can make logistics.

Cool. Again.

**Eric Lofgren:** [00:58:02] Yeah. You said up front that, you know, more, my, you need to be in logistical systems to drive that cost down. But it seems at least in the public narrative that. The F 35 is pretty tethered, to, to this logistical base. And it's not as flexible, but we've been hearing about this kind of island hopping experiments that they've been doing with F 35 as well.

What is it like you, you just said we need to think about logistics, what actually needs to happen for us to get there.

**Mike Benitez:** [00:58:27] Yeah. So I think it's a good example. First of all, we need to reduce the amount of manpower that's required to support. Just pick a platform and a number, and then you work your way, you work your way backwards of what you need to operate and sustain.

So if I say I need to have 30 fives. Okay. How many maintainers do I need? How many weapons strips do I need? How many munitions troops do I need? How much equipment do I need and how long do I need to operate? We historically don't we view that as a, we call it UTC unit I can't remember what the acronym stands for a unit type code unit, something, but we deploy and these predetermined blocks of logistics, but the, but that has a massive assumption behind it.

Which is, Hey, we're going into the middle east and there's all this stuff will be in place. And, we can bring as much as we want. We just throw it on the C 17 and sooner or later you get the logistics tail to support something. It becomes just overwhelmingly massive that it's just not it's you bring in the base with you, which is really not the point.

You don't want to deploy and bring the base with you. And so it's about minimizing manpower minimizing and simplifying the equipment. And so there's. If it, if an F 35 requires 10 pieces of support equipment that take up a hundred cubic feet and weigh four tons how can I make it five pieces of equipment that weigh half as much to take up half as much room?

And so it's thinking about everything from like, how do I minimize this, which to get it, to actually do its function and able to do it without, without power or Hey, if a hydraulic cart goes bad, do I have a manual pump that I can manually pump this thing up? It's all these things of how we can move move things around.

And then when you get to the platform level, we're obviously wed to the supply chains that we have with our platforms. But think about the uh, T-7 like the is, was engineered from the ground up for commonality within its parts. And so the left horizontal stabilizer is the same exact part is the right is just put it in upside down.

And so there's not a left, there's just one. And the servers that control the the main wings also controlled the tail it's the same servo. And so I only need one, not four. And so they've built an aircraft that has such a skinny supply chain that you're able to actually operate.

And that's a training example. So it's, it's optimized to be extremely low cost and easy to sustain, but the point is. Are most of the fighters right now are not developed like that. So instead we need to think about what is the flyaway package for say a 30 day operation or a 45 day.

And I kind of gets back to uh, my old days the Marine expeditionary units, one of the things that they used to do is they would have they will be able to deploy ship to shore and their logistics assumption was 30 days without resupply. And then that was how they operated. So we were going to leave and this is what we're taking, but the assumption is 30 days, not a day more.

And we need to either replace us or bring in some logistics to sustain us. And we don't really think about that as a, as an air force, we think about, getting a platform there and then figuring everything else to build a bridge to send them a little logistics to sustain, which again is you're bringing the base with you.

So that's the big difference. It also feels

**Eric Lofgren:** [01:01:31] You know,

after the, after north are built a F 20 tiger shark, but put a good amount of money into that in, in their own Iran for low sustainment costs. And then the air force is we don't want it. And they're moved on with F 22, which was the opposite, right?

Like high sustainment. We don't care about sustainment costs. We care about capability. And I think that kind of, showed a pretty big signal to everybody else. What the air force

**Mike Benitez:** [01:01:52] cared about. Yeah. If you look at a, the F one 17 is a good example. Number one is simplified and focused on one hard problem, which was Ello and basically everything else.

Like I don't need to develop a I don't need to develop a navigation system for this aircraft. I'm going to use one off of a C 30. I don't need a landing. I don't need to develop a landing gear. I could use one off an F 16. I don't need to develop a new engine. I'm going to use the F 18 engines.

So it, it is a parts bin of air of it's an aircraft built out of spare parts from other platforms that already did all the development. So the supply chains are already in place. That's one of the reasons why it was able to actually feel and operate so quickly. I think six years or five years from no kidding, like bar napkin to IOC is they leverage what do we have in the parts bin?

Let's build something out of it. And then focus on the hard problem, which was the the signature.



**Eric Lofgren:** [01:02:42] Yeah. And I often point to this and you got a pretty good memory F17. They use the engine from the , flight controls from the FCC and landing gear from the A-10 and environmental systems from the

**Mike Benitez:** [01:02:56] was, yeah, there you go.

I know it was something like that. Sorry, but it just seems

**Eric Lofgren:** [01:03:00] like that's, it makes a lot of sense to do it that way. And I think that's, you were mentioning this before in terms of kind of more agile processes, but it also lends itself to a better supply chain. And you heard about this, the old.

Air force used to in the forties and fifties, they would have a common set of broad components that you basically be recombining those in new and interesting ways. And then they were saying especially electronics is forcing us to go to this much more integrated model where all of the subsystems have to be designed in the context of the weapons system.

And that's the weapon systems approach. And that's like the fundamental approach behind the right. The plane

**Mike Benitez:** [01:03:40] program. Exactly. Modularity is the future.

**Eric Lofgren:** [01:03:42] Modularity is the future. You heard it here first, right? 30 years ago. And

**Mike Benitez:** [01:03:47] a hundred years ago, it's really like open mission systems is all about modularity, right?

It's about, Hey, if, if someone has an algorithm that goes, Hey, in a perfect world, say all of our aircraft had open mission systems and company A came out with a amazing algorithm at those auto target recognition. That's better than company B. All right guys, load company A's ATR algorithm onto all the platforms zap and okay.

I company be like. Sorry, like we found a better product. You can keep working at it, keep going for it, or, you work on something else. And so you're promoting competition and it's continual and iterative and that kind of open mission systems approach. That's really the future. I That's a software example, but there's obviously a hardware interoperability that that we can shake out, say the F 15 radar, the APJ 82.

It actually uses the antenna off of an F 15 C, which is an APG 63, but the backend, the hardware is sourced from the Navy, the F 18. So it's a, it's actually, it started one of the reasons to save costs was like, Hey, let's just use the components that exist and then put in some better processing and a bigger power supply.

And there you have it. It's been done before and industry.

**Eric Lofgren:** [01:04:57] And it looks like, the government is pushing hard to make that happen again. And we've been hearing Congress and the GAO kind of bemoan the lack of

technical data that the uh, DOD has on the F 35. But also recently we've been hearing with the LCS, like maintainers don't even have a lot of the specs to understand how to actually, maintain those ships, let alone have the necessary IP rights.

When you're thinking about this kind of modular architecture, there's this term bandied about owning the technical baseline. I wonder, w what does that actually mean in this context? If we're talking about fighter aircraft specifically, what do you think that means?

**Mike Benitez:** [01:05:31] Yeah well, I don't think it means that we're going to. Yeah. **If we instantly had a digital twin of the net 35, we would just go, thanks Lockheed. We're going to go buy or build our own at 35. I think that would happen.** There's as obviously I think sharing the information is beneficial and you can actually understand what's going on to make better informed decisions or some insights.

And Hey, how is this actually working or operating or how is it doing this? I think that's beneficial, but I don't think it's in the platform level. I think it's in the container level. And really, some things like hardware, software type stuff, but I don't think it's a near in the large component level.

There's probably sub components like, Hey, I want the IP for Maybe not the IEP. Perhaps they don't want the IEP for hydraulic servo, for instance for a wing servo for a fighter. It doesn't matter which fighter. And maybe we want the IFE because we want to have a competition that says how, who in industry can meet these specifications at half the price and twice the performance it's stretch goal.

And you have an open competition and you get a lot of smaller aerospace companies involved to design something that is maybe a better product. And maybe there's some collaboration that happens where the small company gets paid for the competition. They give their IP to someone who can produce it at scale, which is probably the original vendor and there's some licensing that happens.

So I think there's a lot of back and forth that happens with IP and there's some opportunities there, but we have so many things that have vendor locks and we just, stuck with it until we're, until we can break out of that paradigm. So it starts with software. There's a really good quote from The SOCOM conference this week, I won't spoil it.

It's actually a newsletter that comes out Sunday. So you can read it Sunday.

**Eric Lofgren:** [01:07:14] Let's talk a little bit about your newsletter. So it's called the merge. You started it and I think Ryan official, former acquisition talk guest is an editor there. Uh, So what motivated you to start that? And what are you putting

**Mike Benitez:** [01:07:25] out?

Yeah. So like most ideas start is a pain point. Number one I started it because I got tired. I I read a lot. What's going on, keep up, what's going on around the air force and really the military. And I've been doing this for 23, 20, 24 years almost now. So I'm losing track, but at

the end of the day, like I got tired of every day, I would have to say through a ton of press that really just, I didn't find valuable or it just didn't matter to me.

I don't care. As a professional as from the fighting perspective, like I don't care about the latest uniform change. I don't care that some community got fired or that something happened on the underside of the world. Some unit rotated on a deployment. There's plenty of people in outlets that are covering that and that are talking about it.

It's great. And I want to go figure that out. Like someone will tell me, and I have my own ways of keeping tabs on that, but I didn't have is. A place that had none of that. It was like, what are the things that I care about? And I'm pretty sure other people care about them too. And I bet if I had something that just had that stuff, people would actually be interested and be more informed instead of just, closing all that stuff off because it's just too much chaff to sort through.

And so when I started looking at the things that did matter, all of that stuff is covered through a, what I call outside, looking in journalism. And I don't mean that in a bad way. I think that the the defense reporting Corps is awesome and they did tremendous work and they are fine Americans, but at the end of the day, it's reporting not really insights and thoughts from inside the arena.

And so, uh, I like to say that I'm an operator who writes versus a writer who fights. So I think that's the big difference. And then the other thing is I've always been pig. I'm a lifelong learner, but I'm also a lifelong share of trying to share it, educate and inform of what I picked up along the way.

those three things put together. I figured if I started doing something that I thought was. Valuable to me, it's probably valuable to other people. And so I could find a way to share it. So that's why I launched the merge to to solve that. And write it and the it's written in the tone of a, an anonymous fighter pilot.

That's probably got a ton of experience, a little bit of pessimism and somewhat of a salty sense of humor. And so then you got a little bit of a mashup of some cement sites that you probably don't get anywhere else. A little bit of like, Hey, here's, what's going on think about, and then every now and then some opinions that you probably couldn't get anywhere else.

And it, and probably the last thing is I don't try to take it too seriously, which is why I think it kind of resonates is, it just, when you think it's getting serious, it's, there's something in there to mix it up a little bit. Just to keep you on your toes. And I don't think there's any other defense media outlet in the world right now that has a buy me a beer button.

I'm just saying it, we definitely don't take it too seriously, but I really enjoy it. And the feedback I get is good. So I'm I'm having a good time doing it. Yeah.

**Eric Lofgren:** [01:10:08] So our audience, you go to the [merge.ceo](https://merge.ceo) to check it out and sign up for it. It's actually, you actually do have a bunch of funny parts in there, and there's also like a, you always have like trivia questions.

Are there any kind of fun defense trivia things you'd like to share with our audience?

**Mike Benitez:** [01:10:22] Nice strata. You're gonna, you gonna have to wait till Sunday. Yeah, you have to sign up to get in, so you have to read it and every Sunday morning and I've got I usually have either a trivia or a history, a blurb in there just to keep everyone pretty centered.

Okay, cool. Any

**Eric Lofgren:** [01:10:36] final thoughts?

**Mike Benitez:** [01:10:37] Eric did. I was happy to be here, proud to serve. Thanks for having me. And I hope I didn't wreck your podcast. And maybe you'll have me back one day.

**Eric Lofgren:** [01:10:43] So well happy to have you back on. And you're doing great work, Mike Benitez , thanks for joining me on that acquisition talk.

**Mike Benitez:** [01:10:50] So yeah.