

EPISODE 278

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[0:00:08] IP: Hello, and welcome to episode 278 of AvTalk. I am Ian Petchenik, here, as always with –

[0:00:17] JR: Jason Rabinowitz. Ian, how happy are you that you are traveling this week in the US?

[0:00:25] IP: I honestly don't think that I could be any happier than I am, that I was not traveling, especially Friday, Saturday, or Sunday of this week.

[0:00:35] JR: Or Monday, or Tuesday if you happen to be at Delta Pass. We're getting a little ahead of ourselves. But how are you otherwise?

[0:00:42] IP: We'll get there in a minute. You know what? I mean, I'm okay, all things considered. A little coming out of a hidey hole after what happened last week. I thought this was going to be a much different show. I thought that we were going to go full in on Farnborough. We had some great stuff lined up and still do, but we're just going to talk about a bunch of other stuff first.

Later in the show, we're going to talk. Well, my colleague, Chris Lomas sat down with Gary O'Donnell who has led the Airbus A321XLR Programme from the beginning. They chat about the A321XLR receiving EASA type certification, what went into that? What leading an aircraft program is like? And where the A321XLR goes from here, now that it has been certified by EASA and looking forward to delivery to the revised launch airline, Iberia, later this fall. That's coming up later in the program.

[0:01:44] JR: That's exciting. It's been a long time since we've had in interview, and we're coming in hot with this one. This is a particularly good opportunity here.

[0:01:53] IP: Absolutely. Yeah, I'm looking forward to hearing Chris and Gary's conversation later in the show. We'll tie that into what's going on at Farnborough right now. Let us rewind to Friday.

[0:02:05] JR: Which feels like an eternity ago at this point.

[0:02:08] IP: I just want to point out that Friday, so we're recording on Wednesday the 24th of July. Friday the 19th of July was 12 years ago.

[0:02:18] JR: At least. There's no way to prove how long it's been, because your computer might still be broken, so you can't pull up the calendar. We have no way to know. But what happened here was –

[0:02:28] IP: Unknowable.

[0:02:30] JR: Unknowable. Early Friday morning, a company that I have never heard of before, and you've probably never heard of before, but a lot of corporate IT security outfits have heard of before called CrowdStrike. I'm sure you've heard this story a million times by now. CrowdStrike released an update to its IT security software, which led to the great blue screening of death. Every sector in almost every part of the world that isn't sanctioned away from having this company do its IT security, which I guess Russia, and I don't know, some other countries lucked out in this case, but there were impacts across every sector from aviation to 911 call centers, to railroads, really anything that was Windows –

[0:03:20] IP: Anything running windows.

[0:03:22] JR: - and use this technology came to a halt. That doesn't mean everything stopped. Some airlines either didn't use Windows for the core of their technology, or some airlines may not have had automatic updates turned on, and were able to, thankfully, fly under the radar, in this case, so to speak, and they weren't impacted at all by this case. What happened is the CrowdStrike is basically an IT infosec piece of software that's layered on top of Windows that has very, very high-level access to what's known as the kernel in Windows. This update, a very

minor update, apparently, or a very minor flaw in this update went wrong. That sent anything Windows-based with the software that received that update into an unrecoverable boot loop.

When you have all of your systems, like these major airlines do, based on Windows and that all stops, the entire operation comes to a stop. It's not just the gate agents' computers stopped working, or the flight information screens stopped working. It was the core technology of the entire airline operation that stopped working. Once they figured out what had happened, they had to figure out and get directions on how to resolve that, which apparently was very time consuming, very involved to get these core systems operating.

Some airlines were able to recover a lot faster than others. American, Delta, United, at least in the US all had major impacts on Friday morning, but most of them were able to do what they needed to do to get the operation back to some semblance of normal. Other airlines, mainly Delta, could not get a hand on the situation and things snowballed out of control, and have just recovered today on Wednesday, July 24th, where Delta's operation has finally stabilized.

[0:05:22] IP: Yeah. What made this particularly bad for Delta was that Delta's crew scheduling system was taken offline. That has previously happened to another airline, Southwest. Two things went really wrong for Delta here. One, it took their crew scheduling system offline. Because of how long it took to re-enable all of these computers, because each computer, each box had to be done manually. You had to go in, delete a line of code, and restart the machine for each machine. I was actually talking with my friend earlier in the week, who works in IT for a very, very large healthcare provider.

[0:06:08] JR: Buy them a drink.

[0:06:10] IP: He did not have a good weekend, because he spent his entire weekend working. He works on servers. Thankfully, he just had virtual machines and was able to do things virtually, but it was still very time consuming. He had teams going floor by floor in hospitals around the country, rebooting individual machines.

[0:06:27] JR: That's what made it so much more complex for airlines, because yes, there are servers that run things, like crew scheduling and aircraft tracking. Down to the individual airport

level, there is way more behind the scenes running Windows on little PCs than you would think. Pretty much every single sign in display and touchpoint that has any technology embedded in it, apparently, runs on Windows. Every single one of those little devices, a human being has to physically go to this machine and fix it, which is not something – I don't know if that's ever happened before, realistically? Probably not.

[0:07:05] IP: Yeah, I don't know. I mean, I guarantee there's going to be 20 years from now, there's going to be a screen in an airport somewhere that still has the blue screen of death from these weekends.

[0:07:16] JR: Absolutely. Globally, there will always be a screen somewhere displaying to the public, a blue screen of death as a result of the CrowdStrike update.

[0:07:25] IP: A living museum.

[0:07:26] JR: Because there are some machines that companies will just deem, this thing is too remote, it's not important enough to physically send a human being out there to fix. It lives that way forever now.

[0:07:37] IP: The other thing about Delta's issues is an issue that Southwest didn't really have to deal with, because if you're a Southwest pilot, you fly the 737. For the most part, if you're a Southwest pilot, you can fly pretty much every single Southwest plane. If you're a Delta pilot, that's not true at all. Delta's fleet complexity is so much greater than Southwest's, that even getting this system back online wasn't enough. Even getting the system talking to the other systems that allowed the crew schedulers to have a full complement of pilots and a full complement of flight attendants for each flight, that wasn't enough, because then you have so many pilots and flight attendants who have to work specific aircraft out of position. That's why it took so much longer.

That's not to say that it's not worth investigating why it took so long. The Department of Transportation has announced that it's definitely looking into what happened, more so along the lines of, "Why didn't you take care of the passengers like we told you you had to first?" But we'll get to that in a moment.

Delta's operations, like Jason mentioned, have started to recover, stabilized today. Yesterday was the first inkling of success that they had, they had turned the corner, but it sure seemed like over the weekend, they were going to have to reset the entire network. For everybody's sake, I'm really glad that that's not what had to happen.

[0:09:12] JR: It came damn close to it. I mean, there were moments over the weekend where you've refreshed the cancellations for Delta's operation and it would just jump by 100, and then 100 again and then 100 again. It was not a good situation. It's going to take a long time for them to clear the backlog of passengers and bags who people keep telling me, I didn't get where I was going, but my bag did four days later, even though they know I never made to my destination. How do I get my bag back? I don't know. Someone's going to have to figure that out, but it's going to take a long time.

[0:09:47] IP: Oh, boy. Oh, boy, oh, boy. Let's talk about Delta's communications regarding –

[0:09:55] JR: What communication?

[0:09:56] IP: Okay, that was easy conversation.

[0:09:58] JR: Yeah. You would think that Delta would have taken some learnings back from Southwest's meltdown in 2022 into 2023. Seemingly, that did not happen. I don't know if Delta was too arrogant about the situation, or thought, "We're Delta. We're better than the competition. We don't need to lower ourselves to the degree that Southwest did." Of course, that is not true. Delta's customer service was apparently quite poor throughout the situation. Lines of hundreds of people deep, core technology failing even when the systems were brought back up. Passengers were just simply unable to rebook themselves, or cancel.

Or, I think, Brian Summers reported that his family was flying on Delta. Even though he knows all the tricks in the book as someone like him would, he wasn't able to rebook his family, because there was phantom availability that you see it's there, you go to book it and then it disappears before you can actually get it to confirm. Really frustrating time for passengers, and the releases that Delta was putting out really never took any responsibility for this issue beyond

saying, due to the CrowdStrike issue and because of the CrowdStrike issue, and because of a third party vendor technology issue, without ever saying, “Yeah, the technology went out, but our own systems were unable to coop and unable to recover for days, unlike American, unlike United, unlike all of our other peer airlines.”

Literally, around the world, Delta was the only airline of this size with lingering issues this long, they just never really apologized. Finally, today, on Wednesday afternoon, they relented about reimbursing passengers for alternate travel and hotel expenses. But that took days and days and days to do. They went about it really poorly. Just conflicting messaging on their website about whether or not they would actually cover stuff like that. There's not a dedicated portal to submit expenses, like Southwest did back in 2023. Just overall, really an unimpressive response from an airline that's supposed to be this premium brand, that just days before this incident in its earnings report, which was quite good, said that, “The Delta brand is strong. Our passengers are loyal, because they know we're reliable. They know they can trust us.” It turns out, when push comes to shove, none of that was actually true, which is really disappointing.

[0:12:33] IP: Yeah. I mean, Delta's, and we've talked about this rather recently, Delta has positioned itself as the premium airline. They've gotten into this upward spiral with United, where each is arguing that they are the premium airline in the US. When push came to shove this week, where were they as the premium airline?

[0:12:58] JR: Well, their CEO right now is in Paris at the Olympics, which is a hotly debated topic today, whether or not Ed Bastian should have done that. I mean, the airline is in a very fragile state. There are still passengers not where they're supposed to be. There are probably tens of thousands of bags, definitely not where they're supposed to be. Personally, I think that sends a really poor message that the job is not done. Your entire company has been stretched thin, stressed out there on the front lines, helping passengers with limited capabilities. Before this disaster of operations is really behind them, their CEO is off at the Olympics.

Granted, Delta is a major sponsor, but did he really have to get out there for the opening ceremonies and opening day? Could he have not delayed it a bit further and just gotten out there, even if just ceremonially get out there and help some passengers on the frontline be visible, because he has not been visible at all, whatsoever, which was a major critique of

Southwest's C-suite during its own meltdown. It's just another case here of Delta seemingly having learned nothing from the Southwest meltdown, not all that long ago. Really just disappointing across the board.

[0:14:14] IP: Yeah. I think that it's absolutely worth mentioning that Delta's frontline employees have done a fantastic job.

[0:14:21] JR: Whether or not they wanted to, they weathered the storm, and they helped out their passengers, because that's their job, and that's what they did. What their CEO was doing behind the scenes? I don't know, presumably something, but nothing in the public eye, which is just not good.

[0:14:36] IP: Yeah. We've mentioned Southwest a couple of times in the show already, but let's talk about what happened, well, 10 days ago now.

[0:14:44] JR: Again? I feel like, we have to replace the bi-weekly Boeing bungle with the bi-weekly Southwest, what did they do now segment.

[0:14:52] JR: The same thing they did before, which is incredible to me. Again, there's an investigation that will hopefully get to the bottom of why this happened. It could be entirely different reason. What happened is very much the same as what happened in Oklahoma, which is very much the same as what happened in Hawaii, which is a Southwest Airlines flight flew way too low for where it was supposed to be. The FAA is currently investigating this incident that occurred on the 14th of July, when Southwest flight 425 was on approach to Tampa International Airport in poor weather, and it flew as low as 150 feet, 4.8 miles from the runway threshold. That's according to the Granular ADS-B data that we downloaded and processed after the fact.

The pilots conducted a go around and ended up diverting to Fort Lauderdale. Then the flight returned to Tampa a short time later after spending some time in Fort Lauderdale and landed without incident. When they were flying over the north side of the Campbell Causeway, on approach for runway 10 at Tampa, you're supposed to be at roughly 1,200 feet. They were at 150 feet.

[0:16:13] JR: I'm pretty sure there are some ships out there that are taller than 150 feet. That's really concerning.

[0:16:21] IP: I mean, this again was caught by air traffic control and a low altitude alert that they received in the tower. They said, "Southwest 425, check your altitude." They did, thankfully. Air traffic control asked, "Are you going to go around?" Then Southwest, "Yeah, we're going to go around." They went around and then went to Fort Lauderdale. Weather at the time was poor, but I'm not sure that comes anywhere close to explaining why they were at 150 feet, nearly five miles from the runway. To that point, the FAA has opened a wider investigation of Southwest, something that I think Jason's been calling for for weeks now.

[0:17:09] JR: Not just me. I don't think it's just me, but there's been –

[0:17:12] IP: But you're the only other one on the podcast is what I'm saying.

[0:17:14] JR: That's true. If not me, then you.

[0:17:16] IP: You have not been alone in your request.

[0:17:21] JR: As this came up, there have been reminders of other Southwest and since, like the flight that almost came a little too close to the LaGuardia Tower. I totally forgot about that one. That wasn't all that long ago either. It's just been overwritten in my brain by these other events that keep coming up. There is something rotten at Southwest. This is not just a sporadic thing every couple months. This is a string of very close calls, very close together that is very alarming.

Yes, I have been calling for increased oversight of Southwest, just like the FAA did with United, not all that long ago. My question was, what would it take to get this increased oversight of Southwest like they had for United? Because that was unprecedented. There was no checkbox, or saying, "Okay, if you have this many events of this severity, we're going to have increased oversight." It just happened. I was wondering why wouldn't this happen for Southwest? Apparently, someone at the FAA was paying attention and said, "Yeah, maybe we should look into this, because this is not good."

Southwest keeps coming a breath away from a major tragedy. In this case, again, if not for an alert air traffic controller, noting that this flight was too low, and if not for the radio frequency, not being blocked to transmit to the flight saying, “Hey, altitude alert. You're too low,” because there was a very chatty exchange leading right up to this transmission saying, you're too low, this could be a very different story. Things should never be getting that close so many times, especially with this very, very short frequency between incidents. It's just too much.

The quote is that the FAA has increased oversight of Southwest Airlines to ensure it is complying with federal safety regulations, and agency spokesperson said to the Wall Street Journal, who first reported it. Then the FAA goes on to say, safety will drive the timeline. What we don't know is if this is the same level of scrutiny that the FAA assigned to United, which was actually quite severe at the time, which limited United's ability to induct new aircraft into the fleet and also, open new routes, which actually ended up in them canceling a few routes outright for the summer season, which is a big deal. We'll have to see what, if anything, the FAA is going to do with this increased oversight.

I welcome it. I know Southwest welcomes it. No one wants these incidents to be occurring like this, but I'm glad somebody is finally paying attention, or at least if they were paying attention before telling the public, “Hey, we've been paying attention to this the whole time, we're going to do something about it.”

[0:20:00] IP: Yeah. I mean, to me, it seems like, this is a very good step for the FAA to take, given the fact that it seems like the increased scrutiny of United came from, in my mind, less serious incidences.

[0:20:19] JR: Oh, far less serious incidents. The United incidents were really spurred by the media and public reaction to the media reports, because things kept happening on video. The notorious video of that wheel, or the tire bouncing off of, I think it was the 777 leaving from LAX. Had that not been caught on video, it would have been a nothing burger, and no one would have cared about that. But things kept happening on video. Then, of course, there was, I think they – one of their crews drove a 73 MAX into a ditch in what was it? Houston?

[0:20:52] IP: Houston?

[0:20:53] JR: Which is not good. Not good. You shouldn't do that. But things kept happening, but they were little maintenance things that kept piling up on top of each other. On the other hand, Southwest is, their crews keep almost flying perfectly good airplanes into terrain, which is not good. That is a much bigger deal. It's harder for the public to get upset about it, because they can't see it, it's harder for them to get upset about it. Thankfully, these things are coming out into the public. We know they happen. I guess, the question is, what else is happening that we don't know about? That's what the FAA is going to be looking.

[0:21:26] IP: There you go. Today in Kathmandu, a Saurya Airlines CRJ-200 crashed shortly after takeoff. This aircraft was not tracked by FlightRadar24 via ADS-B, though we did receive some MODE-S data from the aircraft. Video from the airport shows the aircraft taking off and then immediately rolling to the right before crashing after the end of the runway on the east side of the runway there. Initial reports indicate that 18 people were killed. One person survived the crash, the captain, who was taken to the hospital. There have been reports that this was a test flight of sorts.

[0:22:10] JR: That rain all sorts of questions, though.

[0:22:13] IP: Yeah, looking at the list of who is onboard, I don't know if that's the case. I wonder if there was a distinction being made between a charter flight, or something. We're going to follow this one a bit more closely to see if it was, in fact, a maintenance flight. That just seems erroneous reporting to me.

[0:22:30] JR: Yeah. There's even just a few hours ago, there's reports coming out of local news media saying, the plane was in route for a complete engine check at the maintenance hangar at another airport, but what were 18 people doing onboard a flight like that? I don't know. This is exactly what the investigation will look into. What we do know is that apparently, this was not a commercial flight, so there were not commercial passengers onboard this aircraft, but still 18 people is tragic. That's awful.

[0:22:59] IP: We'll keep an eye on this. The Nepalese investigators do a very good job, unfortunately, because they're often busy.

[0:23:07] JR: Yeah. Kathmandu is no stranger to incidents.

[0:23:11] IP: We'll keep an eye on this one and have more in the coming weeks.

[0:23:14] JR: Let's change the tune.

[0:23:15] IP: Absolutely. Let's completely shift gears. After a good long while of what's happened over the past few days, talk about what we were going to talk about in the first place, which is pretty much all good news. Let's shift gears and go to the UK and talk about Farnborough. We're going to start with the A321XLR certification, which happened just before the beginning of the air show. My colleague, Chris Lomas sat down with Gary O'Donnell, who's the A321XLR program head to chat all things about Airbus's longest-range single-aisle aircraft. We'll be right back with Chris and Gary.

[CHRIS AND GARY]

[0:24:02] CL: Gary, first of all, thanks so much for taking the time to talk to us. It's been really interesting to hear more about the XLR and your experience of leading that program. You're ahead of the A321XLR program. Firstly, tell me a little bit about what that looks like day to day. What do you actually do?

[0:24:18] GO: Okay. Yeah. And thanks for the interview. My role really spans everything from the initial spec of the aircraft and the supporting the sales, right through to developing the aircraft, developing the industrial system, which is the factories, the jigs, the tools and supporting the team to develop the entry into service, the customer support areas. Then at the end of the day, I have to make sure that the engineering drawings are delivered to the production sites. The production sites have the means and the tools to build the aircraft and all the components. At the end, to be able to get that certified and deliver it to the customers in a good way. Really, it's the full 360 span of everything that's needed to develop a program.

[0:25:04] CL: Great. What does the certification and the entry to service the XLR mean to you personally, having seen that journey from start to finish?

[0:25:13] GO: For me, I've been in a very lucky position, because I started the development of the XLR right from day zero. Right from the initial question, if we could do something with the 321 to make it fly longer. After, for me, six years, because we did a study for a year before we launched it. Six years of my life, I've seen everything from the initial ideas right through to having this aircraft certified. Along the way, and the bit that really motivates me is every week, every meeting, working with teams from all over the world to face difficulties, find solutions to the problems and have the little wins every week.

The big milestones, like first flight certification, first delivery are very, very important to me and the business. To be honest, I get more joy and motivation from our dealings every single week with all those people, engineering suppliers, industrial certification, everybody, customer support. It's a huge, huge milestone. It's the end of a long journey. It's bittersweet. You're finishing those great relationships and great discussions. On the other side, you've got the sense of accomplishment of something huge that you've really taken an aircraft development from zero to delivery.

[0:26:29] CL: Absolutely. You mentioned there some of the difficulties you faced. We're really interested to hear about some of those. What were some of the challenges that you come across in this process, particularly in terms of, first of all, of achieving the certification and then perhaps, going forward to entry to service?

[0:26:45] GO: Yeah. When we launched the aircraft in 2018, we had spent a lot of time looking at all the previous developments that Airbus has done and looked around the way the industry worked. We took a very proactive view on how we launched the aircraft in terms of, we had some strong values around collaboration with everyone who needed to be involved. That needed some sharing overall transparency, including really early engagement with the authorities and making sure the team were quite balanced, well-being, mental health, physical health.

We used the project to instill a lot of strong values in the way we work, which was fortunate, because not so long after that, we had COVID. We developed this aircraft through COVID. From one week to the next, the team disappeared back to their homes, right across the globe. We had to operate for some months in that mode, before we could get our offices into a way to accommodate the teams safely back in different groups at different times. That was completely unforeseen, of course. But trying to develop an aircraft and not slow down so much during that period was very, very interesting.

Then midway through our development, we had a change in strategy from the certification authorities, the airworthiness authorities, both in America with the FAA and EASA. We had to pivot, whilst we had aircraft in the fall flight test ready to take off. We had to really pivot and understand how do we now completely adapt, keeping our collaboration transparency and the willingness to make sure we do the right thing and absorb that. Then we had the war in Ukraine, which had a big impact to a lot of our businesses, a lot of the factories could be built, several factories as part of the XLR. We had a huge amount of jigs and tools which are made of steel.

The supply chain got hugely disrupted. I think we've been tested numerous times on this project, and I think it's a testament to how the team came together at the start with the values and this closeness and this openness that we were able to ride over the top of some of those things with huge support from our very senior management to keep the XLR moving. Any aircraft development is tough. You face a numerous technical issues that you have to manage every day. But then, with the XLR, we had those global issues on top, which we're putting extra pressure on our back. I think to be at the situation where we're now certified is a huge, huge testament to the way the teams work, as well as their technical skill.

[0:29:22] CL: Absolutely. Interesting to hear how those supply chain issues don't just affect the components that go into the aircraft, but the components that build the aircraft as well. Really interesting perspective. Of course, to hear that you're probably, I think, the only manufacturer from start to finish there, who's developed a design throughout the pandemic. Really interesting to hear. The aircraft's now certified. We're mere probably weeks away from the first flight with Iberia, which we're very excited about. What will you and the team be focusing on in that time and run up to the first flight?

[0:29:52] GO: I've got four key objectives in the way I manage the project. The first one is we have to make sure that everything is fully certified. We have the certification, the type certification of the aircraft behind us, but we still have a lot of customization mods for that the airline need. We have other aspects that we need to certify, a lot of detail parts after the type certification before EIS. We still have the certification. In front of us, we have of course, the Pratt certification, which comes towards the end of the year.

Depth and cert and engineering is still a very strong activity that we need to continue to polish. The second workstream is making sure that all of the industrial activities are finalized, which means that all the little lessons, all the little fixes, which are not affecting the aircraft, but affects the efficiency of the production system, we have to fix those and seal them in documentation and make sure that the process runs smoothly.

Then the third part, which is maybe the biggest part for entry into service is making sure all of the customer documents are there, the flight manuals, the repair manuals, etc., etc. We have thousands of those documents to make sure we transfer to the airline. Then the fourth one, for me, the first delivery to Iberia is a big event, but I've got hundreds of aircraft to build. I've got a number of factories that I need to finish in order to ramp up. The biggest challenge for me is the ramp up.

I'm making sure that all of the engineering learning is done, that all of the manufacturing processes are very mature, that all of the customer documents for all of those future airlines are ready, and then we need to keep the machine moving. The EIS is a big event, but it probably takes 20% of my focus today, because everything else for the future ramp up and the success of all those extra airlines is still a huge amount of work.

[0:31:49] CL: You're always looking for the next step. You're always planning two, or three steps ahead.

[0:31:53] GO: At least, yeah. My job is to really, number one, enable and support the team to do the job today. But mostly, to look and anticipate the next year, the next two years to make sure that anything that could go wrong, we test it in a test center today, and that could be building physical mock-ups of new things that are coming to make sure that they're very, very mature

and the operators, the production operators have the chance to play with it before we drop it into the main shop floor. Always looking forward.

[0:32:23] CL: Just then, actually a question, whilst I think of it on the documentation side of things, you mentioned there's thousands of these documents. First of all, interesting, what are those documents actually contain? I know there's a lot there, but what are the really important things? Are they mostly digital, or do we still have to legally provide a lot of paper documents actually?

[0:32:43] GO: They're all digital from our side. Then it really depends on the airline what they want to receive. Some do take paper. We do work with a lot of paper, and it's one of our ongoing workloads to make sure that we convert everything to digital. It's not so much the being able to create it digitally, it's already happened for years. It's been able to embed it in an airline, because those documents, if you think maintenance manuals are one of the key documents, which basically, like with a car, or anything you buy, any product you buy, you get your instructions of use. The maintenance and the operations manuals are very important.

We then have the most technical specialist manuals, like the structured repair manual. If an airline has a problem in service, there needs to be clean documentation of what you can and cannot do. Of course, we support this from our base to make sure that we can support those discussions. There's flight ops manuals, there's the operation of the aircraft from the pilot's perspective. Every single thing that you can consider to run an airline is documented, including the crews, etc., etc.

Yeah, we have to make sure that for each one of those changes, for each one of those documents, we run a complete set of tests, of dry runs, of simulations to make sure whenever we release those manuals and then base our training on those manuals that everything works smoothly. It's a huge, huge document chain.

[0:34:07] CL: What kind of simulations are we talking about there, in terms of, I guess, preparing for every eventuality when the aircraft is in service? Can you give an example of what do those simulations might look like and how you run that?

[0:34:18] GO: If I give a good example of the maintenance manuals. In order to have a maintenance manual of something that's fresh on the axle, or the rear center tank, or a different access area, we have to give the maintenance crews direction on the right tool to use, and we need to make sure that those tools are capable of being easily accessible to the fastener, or the part that we're trying to fix. We need to make sure that the weights of the parts are not too heavy for the maintenance teams to be able to handle and lift and position.

What we do for that, we have a lot of 3D simulations, augmented reality, virtual reality that we use in our test areas to make sure that before we have built the aircraft, virtually, we can go through the ergonomics, the human factors of how to fix the aircraft, so that before we design it, we know it can be maintained. Those simulations are very, very important before we freeze our design to make sure that in service for 20, 30, 40, 50 years, that the maintenance crews can still operate comfortably to do the job.

[0:35:22] CL: Fantastic. Having to think about the, now more on the passenger side of things, we're talking about putting a bunch of people on an A321 and flying them long haul, on an airframe which has just traditionally been used for a short to medium-haul routes. Do you think passengers are going to notice any difference being on that aircraft for that length of time?

[0:35:42] GO: I think, one of the main differences, I think, people will see, I get the pleasure of working with most of our airlines, if not all, on the layout that they're putting in the cabin. When you walk onto a normal single-aisle aircraft, you're expecting to see a pretty standard single-class layout for most people, and you know what you're getting. Whenever we look at the majority of the airlines that we have show the XLR to, and you see some videos online of American Airlines from what they're offering, we can see the same for Iberia, our first customer, they're going to see a very nice business class, premium economy class, and the economy class that they are used to today, even the same economy class they see on a 330neo.

The one thing we can't do in developing a single-aisle aircraft is by definition, we can't put two aisles in it. We can't have a wide body with two aisles. The one main difference is compared to a 330, it's a single aisle. In terms of thermal comfort, the comfort the passengers will see, it's the same as we have on a 330. In terms of the seat, when you're actually sitting in your seat,

economy, premium economy, or business, it's the same as you're going to see sitting on a 330. You'll just have less people beside you.

In terms of the services that the airlines are planning to offer, it's very similar to a 330. This is a baby 330, and it's the big sister of a 321LR. We're really servicing that gap, that transition for airlines, so they can go from a single-aisle seamlessly up and touch a 330. On one side, we don't want the passenger experience to be significantly different than another long-range Airbus aircraft. On the other side, because it's a single-aisle, they'll notice those premium situations on a single-aisle aircraft.

[0:37:31] CL: That homogeneity between the 330 is really interesting. Essentially, you look at it as, as you said, the biggest sister of the LR and the baby A330. I think that's a great way of exacting it, yeah, the passenger experience. Finally, the XLR is frequently tipped as a game-changer in terms of long-range, narrowbody capability. What impacts do you think the XLR will actually have in practice on the market in the short to mid-term?

[0:38:02] GO: For me, as the program manager, I see the XLR as a machine that can be used by airlines for transporting people. That's really my objective. What we've tried to do in designing that aircraft is to make it as flexible as possible. I think we'll get three, maybe three different types of use. We'll get the airlines who are growing new routes, and they're going to try routes into places that are long-range, that maybe a 321LR cannot reach, but maybe so far, they're not fully confident that they have the passenger volume to go for a 330, or a 350. They're able to take these long-range routes on an XLR and then have the test, have the growth for bigger volumes in the future.

I think, for me, this is one area, and this is going to be very, very big for the XLR. We see a lot of the airlines we're talking to in different regions of the world are talking about opening up routes into areas that they simply cannot fly today, because they can't justify it. This is one area. The second area, I think, will be for some airlines, they'll have the flexibility of a long-range aircraft that in the winter can fly skiing, or can fly to specific areas. In the summer, they can pivot and fly to hotter climates. This flexibility of being able to fly different routes in different seasons is also a big area.

Then you have then, really, and it's about flexibility again, I'm going to say the same word. It's about airlines who know their routes, but they can fly the XLR on a two, on a four-hour journey, or they can fly it on a 11-hour journey. They have a machine that really can stretch short-range, as we do today, right up to long-range. Having that machine in your fleet gives you a lot of confidence and a lot of support that it can stand in, where something else can't operate, it can stand in, but in itself it can be a real strong workhorse with multiple turnarounds per day.

[0:39:56] CL: Great. Really flexible products overall. Well, Gary, it's been fantastic to talk to you. I think we're all really excited to see the aircraft into service, which we're eagerly anticipating with Iberia very soon. It's been fantastic to talk to you. Gary O'Donnell, Head of the H321 XLR Programme. Thanks for speaking to us.

[0:40:16] GO: Thank you, Chris. Thank you very much.

[END OF CONVERSATION BETWEEN CHRIS AND GARY]

[0:40:24] IP: Welcome back. Now that the A321XLR is certified, the next step is getting onboard. Delivery is scheduled for later this fall. Hopefully, we'll get a date soon. Then Jason, we're going long haul –

[0:40:38] JR: To Boston.

[0:40:39] IP: - with Iberia. To Boston. Yeah, so the first routes aren't necessarily XLR specific routes, but it looks like they could go even further.

[0:40:49] JR: Well, it's not even the originally intended airline, let alone anything that really leverages the capabilities of this aircraft. But for those of you, I know there are a few of you out there saying, "Transatlantic on a narrowbody aircraft. Bah, no way. That's uncomfortable." I retort by saying, shut up. It's fine. I've done it. I flew JetBlue earlier this year on not an XLR, but an LR, from Amsterdam to New York. It's fine. It's no different than a widebody. It's fine. If the price is right, you will deal with it. I don't see how 33 on a narrowbody is any worse than 343 on a 777, or what are – okay, it's worse than 242 on an A330, but it's not bad. You'll be fine. You'll survive. If I did it, you can do it.

[0:41:43] IP: All right, there you go. Let's look at some orders from this year's Farnborough air show.

[0:41:49] JR: There were a lot. I did not see this coming.

[0:41:53] IP: It seems like we're going to be in a lull, but nowhere near even the low, low tally of the 2022 Farnborough air show, and not even in the same universe's last year's Pairs air show, but still some healthy numbers.

[0:42:07] JR: I'm just going to say, Boeing came to play.

[0:42:10] IP: They did indeed.

[0:42:11] JR: Unexpectedly dominated the Farnborough air show. We don't know what the commercial deals are here. We don't know if Boeing was giving these aircraft away for free, or buy one, get 10 free, maybe. But whatever they did, it worked. Boeing cleaned up. Airbus was barely and also ran in this air show, which is a real weird role reversal.

[0:42:33] IP: It certainly is a change from the past few air shows and the biggest announcements. Boeing taking a full, more than 60% of the total number of orders. Airbus taking just a third.

[0:42:47] JR: Also, ATR was there.

[0:42:49] IP: We'll talk about them in a little bit in the context of competition. The 787, the big winner so far with orders for 50, the 777X, also picking up some orders. Interestingly enough, this was part of a large previously undisclosed order.

[0:43:09] JR: Our favorite airline. Undisclosed airline.

[0:43:10] IP: From our favorite airline. Undisclosed That's Qatar Airways picking up 20 more. Some things that we already knew about, including Japan Airlines, firming up some orders, but

also, some new orders from Japan Airlines. Korean Air taking some 777Xs, as well as some 787-10s. National Air Cargo becoming a 777-freighter operator with four lux air picking up a small handful of 737-10s, eventually. Virgin Atlantic definitely camping into the Airbus order book with further A330neo options.

[0:43:52] JR: That was my favorite. Virgin Atlantic announced an order for seven A330neos, while on an A330neo at Farnborough, which is pretty cool. I mean, how often do you announce orders for an aircraft, while you're on that same aircraft? That's pretty cool.

[0:44:08] IP: That should be the standard, Jason.

[0:44:10] JR: It should always be the standard, especially for aircraft that haven't yet been delivered to anyone. Unfortunately, the 777X was not able to attend this year's Farnborough air show.

[0:44:20] IP: Then Berniq Airways, which is a Libyan airline, becomes the first Libyan A320neo operator with a firm order for six A320neos. A scattering of orders, some very interesting orders, but nothing huge. Turkish saying that it's not going to order another six billion planes anytime soon, because they're working on engine pricing. Look for that one in the future. We're recording on Wednesday, so you never know, there could be a Thursday surprise. But very likely that we've seen most of the orders come through, and Boeing coming out well ahead of Airbus in this year's Farnborough air show.

[0:45:05] JR: Yeah. Really unexpected. Some other interesting orders, Drukair ordering the A321XLR, the freshly certified A321XLR. I guess, they'll be embarking on long haul operations. That's not just a new aircraft order, but an entire new, I guess, business model for that airline, which is pretty cool.

[0:45:24] IP: Yeah. Let's see, what else happened at the air show? Embraer, not big on the order book this year, but big on the updates.

[0:45:34] JR: Yeah. The E195-E2 has had a few changes. Not the hottest selling aircraft, and we'll get to that in a moment. But the E195-E2 specifically has had its range boosted from 2,600 to 3,000 nautical miles, which opens up some interesting possibilities for that aircraft. The new

max take off weight for that aircraft is 62,500 kilogram, which combined with the lower fuel burn of its engines provides this range improvement, which is pretty cool. They're also reporting 10% improvement in geared turbofan engine time on wing, which is, I don't know, the bare minimum we expect at this point. Yay. That's cool.

Most interestingly, is that Embraer out of nowhere announced the E2 enhanced takeoff system, which is an automatic takeoff system that they say, produces a more precise and efficient rotation moment and flight trajectory, reducing the required field length and pilot workload. Meaning, more payload, more range from challenging airports. They give an example saying that the E2 departing, let's say, from London City would have an added 350 nautical miles, which could be interesting. But then, the image that they provided of the enhanced takeoff system, which is basically an auto takeoff system in action, sure looks like it's putting that aircraft into a dangerously steep climb, potentially stalling the aircraft. I'm sure that is not to scale, but it was a really weird image to show off. I don't like it.

[0:47:19] IP: I get what they were going for.

[0:47:22] JR: But that picture should probably be to scale.

[0:47:24] IP: Yeah, like show me what the difference is. Is there an 18-degree climber? Is it higher than that? Is it lower than that? How does this work? If it is to scale, that's more frightening than I think them just putting a bad image together.

[0:47:38] JR: But I'm excited to be onboard an aircraft that pulls a 45-degree climb. That could be fun.

[0:47:45] IP: Right.

[0:47:45] JR: Why not?

[0:47:47] IP: Having been on an aircraft that has climbed at 45 degrees, you're not getting out of your seat, I'll tell you that.

[0:47:52] JR: No, that's fine. That's fine. We'll get to cruising altitude that much quicker, so I can, I don't know, get some peanuts, or whatever in Embraer E2 airline serves. Meanwhile, on the other end of the spectrum at Embraer, the E1 is getting some love, because the airlines in the US cannot quit the E1 for seemingly ever at this point, since the E2 is too heavy for US regional airlines. The E1 continues to be turned out at ridiculous rates, and they are making the E1 look a lot more like the E2 on the inside. On top of adding additional seats on the E2, the E1 will also mimic the E2 in terms of much larger bins, so they'll have a one-to-one overhead bin ratio, as well as mood lighting. Isn't that nice?

[0:48:42] IP: The mood lighting, I could take a leave, I suppose. But the bins thing, now you're speaking my language.

[0:48:48] JR: Yeah, that's nice. Having been on a couple of E175s recently, they are remarkably the same now as they were 20 years ago. I'd imagine Embraer didn't think it would still be churning out the E1 forever, like it seems to be destined to be doing. It's good that they're going back and really giving the venerable E1 some love, because it's not going away anytime soon.

[0:49:15] IP: We talked about Boeing's multiple orders and growing order book at Farnborough. What we should also mention is flydubai's unorder, anti-order? Protest letter.

[0:49:33] JR: flydubai did not order any aircraft at Farnborough this year. I guess, wanted to get in on the action and said, "Whoa, whoa, whoa, whoa, whoa, whoa. We see things are going really well for Boeing here at Farnborough. But let's just remember, things are not going so well for existing customers who were expecting deliveries of aircraft." They put out a press release during Farnborough on July 22nd. The headline reads, "flydubai's expansion plan stunted by extensive delays in Boeing's aircraft delivery schedules." The subhead says, "The Dubai based carrier announced that no new aircraft are joining its fleet for the remainder of the year, following the latest update it received from the manufacturer. The carrier are set to review its expansion plans due to the ongoing delivery delays."

All the aircraft that flydubai had taken this year were apparently, actually supposed to have been delivered previously. flydubai will take no new aircraft this year. It's going to have to rethink its network plan and possibly cancel some routes outright. It ends by saying, "flydubai urges

Boeing to honor and renew its commitment to meet its delivery obligations.” Not too often you get an airline, not just putting out a press release saying, “Hey, Boeing. You're screwing up really badly,” but also, to really rain on their parade during the air show. That's bitter, and I like it. That's good stuff.

[0:51:00] IP: Someone is very, very upset.

[0:51:02] JR: I mean, I'd be upset. If you were a passenger of flydubai, you should be upset, too.

[0:51:10] IP: Let us wander our way back across the ocean and visit New York, which is soon to become –

[0:51:16] JR: I live there.

[0:51:18] IP: - in a certain way. Jason, explain why if you're flying through New York this week, you might be in for some headaches.

[0:51:29] JR: Well, specifically Newark. If you're a passenger who flies through Newark, often, you're probably saying, “So what? That's already the case. This is already what happens.” Well, the FAA's New York Center N90 has been chronically, or New York TRACON has been chronically understaffed for years. Part of the solution at the FAA to remedy that was to move Newark's airspace over to Philly's Center, where apparently, staffing is a bit easier. This has been back and forth. Chuck Schumer, the Senator had gotten involved and stopped that for a while. But it now seems like, finally, this coming weekend, Newark's airspace will be reassigned to Philly.

A pilot for one of the airlines that does a lot of flying in and out of United, sorry, in and out of Freudian slip there, in and out of Newark. Come on, if we're talking about Newark, we're talking about United. They have some information saying that this coming weekend, July 27th, that transition will finally occur from New York Center over to Philly. It may not be super, super smooth. Newark gets constrained a lot quicker than the rest of the New York airports, but that may be even worse during this transition for “near term.” That could mean anything, days,

weeks, months, don't really know. But while other New York airports are doing fine right now, Newark may be in not great shape. When the weather here takes a south turn, Newark could really be in bad shape for the coming future.

I reached out to the FAA for a comment to confirm this and asking after them asking, "Who are you and why are you emailing us?" They have not yet responded to my clarification request. It does seem like this is finally happening, which in the long term will be good, but there will be near term pain for Newark passengers. Maybe fly out of LaGuardia the rest of the summer.

[0:53:33] IP: Nothing really new for frequent travelers at Newark.

[0:53:37] JR: It's finally happening.

[0:53:38] IP: Deeper pain.

[0:53:39] JR: Yeah, deeper pain for long-term gain, hopefully, is the plan.

[0:53:43] IP: There you go. Let's close the show by going across the city into JetBlue's home turf of –

[0:53:51] JR: LaGuardia Queens.

[0:53:52] IP: New York, JFK. They are just not going to fly a whole bunch.

[0:54:01] JR: They're also going to fly a whole new bunch of stuff. JetBlue's been in not great shape recent years, since the court struck down the Northeast Alliance operation with American and then struck down the Spirit merger. JetBlue's had to make some moves and it's had to make some moves pretty quickly to get back to profitability and figure out what it wants to do in the new reality. Some of that involves starting up service at Islip. Today, it was announced that they will actually spin up a lot of new service out of Providence and Manchester, New Hampshire. Also slash and burn some cities entirely.

JetBlue will be entirely closing Charlotte, Minneapolis, San Antonio, Burbank, Tallahassee, which it just started flying, I think, in January of this year. Palm Springs and one of the Caribbean islands. I can't remember which one exactly. This is a slash and burn announcement. Actually, they didn't announce this. The announcement was all about, "We're expanding service in the Boston region with Manchester and we're increasing service from Western New York, the bread and butter out of Buffalo, Syracuse, and Rochester." They didn't actually announce publicly these full-station closures, but things leak pretty quickly. It's pretty shocking to see major cities, like Boston to Charlotte, Minneapolis, San Antonio. They're gone entirely Burbank as well. I think JetBlue served Burbank for decades at this point, but not anymore after October of this year.

[0:55:38] IP: It's a big adjustment. I mean, some interesting new services and a lot of new Northeast flying, and a lot of what seem extraneous routes going away in extraneous cities.

[0:55:51] JR: If by extraneous, you mean, no more intra-West Coast flying, which is really what's happening here, which is probably good. But man, airlines like Alaska have really turned up the heat on JetBlue. They have retreated back to the core operation of Northeast US to Florida and the West Coast. Let's see if that brings them back to profitability. I hope so.

[0:56:16] IP: Good luck to JetBlue. We will have a final update at Farnborough next week. My colleague, Chris, is there during the show this week. He's going to put together some things and we'll find out if anything more happened after we hit stop on the recording button, which always happens. We'll see what else goes on the rest of this week.

This weekend, I've said it in the past couple of weeks, but this weekend on Saturday, I'll be up at Oshkosh. Feel free to drop us an email at podcast@fr24.com, if you want to meet up at Oshkosh on Saturday, if you're going to be there, and then we'll start looking forward to what's next for the rest of the summer and into fall. For now, this has been Episode 278 of AvTalk. I am Ian Petchenik, here, as always with –

[0:57:03] JR: Jason Rabinowitz. Thanks for listening.

[END]