

**EPISODE 29**

[INTRODUCTION]

**[0:00:05.4] IP:** On this episode of AvTalk, Gavin Werbeloff steps in for Jason as we dig into the numbers around some recent aircraft orders, and we send Jason to Hamburg for the Aircraft Interiors Expo.

***[0:00:15.2] SM:** I'm disappointed that they didn't open the chilled champagne bottles that were directly below the cookies.*

[INTERVIEW]

**[0:00:20.5] IP:** Hello and welcome to Episode 29 of AvTalk. I am Ian Petchenik, and not here for the first time with Jason Rabinowitz. Jason is off in Hamburg, Germany at the Aircraft Interiors Expo and we're going to hear from him a little bit later in this show.

Today, I am joined by Gavin Werbeloff, who is a contributing writer for Runway Girl, a professional numbers guy, and we'll get to that a little bit later in the show, a wildlife photographer and a good one at that, and an avgeek uber nerd.

Gavin, thank you so much for sitting in the other chair and joining us for the show.

**[0:00:55.1] GW:** Thank you for having me. I can't believe it took you 29 episodes to get rid of Jason.

**[0:00:59.6] IP:** I've been trying since episode 2, and I had to send him to Germany to do it. But we did it. He's gone. Wait. He's coming back later in the show.

**[0:01:06.9] GW:** With no thanks to British Airways and Virgin Atlantic.

**[0:01:08.7] IP:** Yeah. We're going to have him explain why he did that in the next episode, but he did some interesting booking things as he always does. I feel like anytime he travels, I know we're in for a good story, because it's going to be screwed up somehow.

**[0:01:22.7] GW:** Yeah. I mean, just don't ask him about TAP Portugal.

**[0:01:26.4] IP:** Never. There are few things you don't ask Jason about; TAP Portugal and making his bed, but we'll move beyond that and just dive right in to some news of the week with the big news for air traffic, or at least it sounded like big news and it turns out it's not so big, is EASA, the European Aviation Safety Agency, issued — I mean, it sounds very important, a rapid alert notification that was published by Eurocontrol, which is the umbrella organization for air navigation in Europe, that the Eastern Mediterranean and the Nicosia FIR is— “operators should exercise due consideration” when planning flights in that area.

So the Nicosia FIR is basically centered around Cyprus, and the alert notification was in reference to a escalation in rhetoric and possible air strikes or cruise missile launches from the Eastern Mediterranean into Syria. So they've said, “There might be missiles. You shouldn't fly there.”

That sounds very ominous, but the reality is that there weren't very many flights in that area to begin with, very few flights. No outside commercial carrier besides Middle East Airlines transits Syrian airspace, and they have now said that they're going to not transit Syrian airspace and started today — We're recording April 12<sup>th</sup>. They said starting today they're going to fly around. So they've added basically 30 to 45 minutes to their flights that are east of Beirut-based airline. So they've added 30 to 45 minutes. They now fly around to the Sinai Peninsula and through Egypt to get to where you're going to points east. Kuwait Airways has said, “We're just going to cancel our flights to Beirut for the time being and see what happens as far as the situation progresses.

Most of the general media took this as saying, “No one should fly over Syria,” and they're clearing out the airspace, and that had already happened. It's been years. I don't even know the last time that a carrier besides Middle East Airlines and carriers based in Syria flew over Syria.

**[0:03:41.7] GW:** Yeah. When things started getting bad, and they've been bad. I can't believe it's been 7 years. Everyone just sort of stopped serving Damascus, and it kind of stayed that way. Lebanon has its own colorful history, and MEA, that's their home base and they're comfortable flying in and out, but a lot of the traffic had dissipated out of there already. It's not like there had to be tons of re-routings or changes to operational plans.

**[0:04:13.2] IP:** Exactly. Some of the other airlines that service Beirut and Tel Aviv generally, they have decided to instead of flying back to north across Cyprus, they've just decided to go south and around. Those aren't new routes. They're just consistently choosing to do the southern route back to Europe now. It's not like there was some sort of massive recalculation among the global airline population to change routings here, anything like that. I think the news was more a reminder than anything else, but it will be interesting to see what happens if anything in that area and as well as how long this particular notification or alerts stay in place.

The original listing for 72 hours, but we'll see if that continues or is reissued. But we're definitely keeping an eye on it, but to say that it's brand new and huge news I think was a bit overblown especially by a lot of traditional media that saw a warning as a prescription against air traffic where it was just kind of an exercise due consideration. Just keep your eyes on this.

**[0:05:25.7] GW:** Yeah, and I think a lot of that went along with — The UN Security Council was discussing the goings on in Syria, particularly in Homs this week. You started to see similar Syria's rhetoric coming out of London and Paris regarding what's been going on in Syria, and it started to come out of Washington as well. It makes a lot sense that they started give everyone fair warning, because we don't know what's going to happen, and whatever does or doesn't happen could be happening right now.

**[0:05:55.0] IP:** Right. It's certainly something that everyone needs to be aware of, but I think that the way it played, at least the way that I was feeling some request from median things like that was that Syrian airspace is suddenly all clear and that's certainly not the case, because it's been that way for years. That's something that I think is important to keep in mind, that this isn't something brand new. It's just a continuing effort to keep everyone safe. Always a good thing, but just something to be aware of.

At the top of the show, I mentioned that you are a professional numbers guy. So let's talk about some numbers. American Airlines placed an order for 47 new 787s, replacing their aging, I won't call it elderly, but aging fleet of 767s. They took, or will take, 22 787-8s and 25 787-9s starting in 2020 and '23, and then they added 28 options on top of that order.

So I said a bunch of numbers. Gavin, if you'd be so kind to explain any and all of that.

**[0:07:04.0] GW:** I think there's some important backstory to all of these. A few weeks ago there were stories put out that Airbus were saying, "We're not going to be winning the current American Airlines wide body composition. Boeing is going to places with — It's pricing that we're just not willing to go."

So before American and U.S. Air merged, U.S. Air had placed an order for 22 A350-800s, which over the course of the development of the A350 program, that particular model has pretty much been — It's gone. There are no more active orders for it. It wasn't very popular to begin with, and Airbus sort of convinced everyone who had ordered it to convert their order to something else. Sort of the last holdouts were Hawaiian who a few weeks announced they were canceling that order and ordering 787s, and U.S. Air, I'm not sure if it was U.S. Air management or American management who are the same thing, because the management moved over, converted that order to A350 900s, and that order has been pushed back a number of times. The first deliveries were initially supposed to be this year. Although the last round, they were supposed to be this year.

So Airbus announced that they were not going to be winning that order. Then on Friday, late in the day —

**[0:08:24.8] IP:** Very late in the day.

**[0:08:27.3] GW:** We got this announcement that American had ordered 47 787s, and I don't think that was a terrible surprise, but there are a number of things about this order that are very interesting. First is the number of 787-8s, which is 22, and I think American already operates 20. That's a really big fleet of 788s, and that has not been the greatest seller. Jon Ostrower is the

best person to explain this, but while the 788 and the 789 look very similar, underneath the skin they are very, very different airplanes. For its size, the 789 is lighter and a better overall performer, because United is using 787 9s for Houston, Sydney and LA, Singapore, which are really, really long stage lengths. Air New Zealand just announced they're going to be flying Auckland-Chicago direct. These are really, really long flights, and the 787 9 is a really, really efficient plane.

The other interesting piece of this goes back, and we're going back to October of 2008 when American's initial 787 order was placed. Just to give you context, the 787 was famously rolled out on July 8<sup>th</sup>, 2007, 7-8-07. Didn't fly for the first time until December of 2009, and there were a number of development delays. A lot of the first 20 planes were known as the terrible teens, because they needed a lot of reworking.

October of 2008 was a very dark time in the 787 program and not a very happy Boeing plant in Everett or Boeing headquarters in Chicago. American announced an order for 42 planes with a further 58 options, and the timing is important because American had a lot of leverage. They were a stamp of approval. I wouldn't go so far as say American had to have that order — Sorry. Boeing had to have that order, but it was an important for them. We can surmise that American secured very, very attractive pricing.

They didn't just secure the pricing of the planes that they ordered. They also secured the pricing of the options. Now as years go by and those options are made outstanding, there are escalations and those options might expire. The base price of those options was based off of what the order was at.

Fast forward to now, and Boeing made a point to say that this was a brand new order and not an options exercise, which was interesting, because American have 58 options. They could have exercised 47 of those to buy all these new planes. So when Airbus said Boeing was taking the pricing to a place that it couldn't go, there was something on my part that this was simply because American was exercising options and the pricing had been locked in 2008, but we come to find that this is actually a brand new order.

Is there a reason that what deal was American getting on these planes? Was the point to take airplanes off of the Airbus order book by giving American unbelievable deal? We really don't know. But the other interesting thing is that the order was announced very late on Friday and it wasn't an accident.

**[0:12:18.2] IP:** Yeah, or was it?

**[0:12:19.7] GW:** Or was it? Well, American, their hand played by Boeing, because Boeing accidentally or not accidentally, we'll never know, tweeted out about the order.

**[0:12:30.9] IP:** What was it? A tweet or did they like post — I thought they had posted like a splash page on their homepage or something like that and then I think it got picked up.

**[0:12:39.4] GW:** Yeah, but then it got taken down, but at that point the cat was out of the bag. So American —

**[0:12:44.9] IP:** Screenshots live forever.

**[0:12:45.3] GW:** Exactly. Ask Jason about that. At that point, American chose to acknowledge the order. Forbes had an article out in the days after that said that this was all a mistake, that American was actually waiting for Airbus to make an announcement of the cancellation before they announced the Boeing buy, which is interesting in and of itself, because I have never seen an instance where an air framer went out of its way to make an announcement or press release about a cancelled order, and the closest thing I can think of is when Virgin Atlantic's 68380s were on sort of a perpetual deferment and everyone knew that they were never going to be delivered, but the order stayed on the books. Lo and behold, that order was converted to A350 1000s.

So we haven't seen any announcement from Airbus, but it really begs the question, well, if they were going to announce that this was not just a cancellation, but a cancellation and conversion or a cancellation new order. What would that be for? Because American already has an order, an outstanding order with Airbus for 100 A321 Neo's and none of those have been delivered yet,

and they just announced that they weren't going to take Airbus wide bodies. So what could it be?

**[0:14:12.1] IP:** That's one of the really interesting questions about this, because the news that kind of got buried in this order was that Americans also deferring deliveries of 737 Max indefinitely. 40 737 Max 8 deliveries that were due in the early 2020s. So that piques my interest, because Airbus is holding — I assume they're still holding on to some money that U.S. Air paid for the A350 order. So there's a down payment with Airbus. There's a deferment with the 737 Max, but there's also that outstanding. So I mean I don't — I'm not an aircraft financier, but can you take down payment money and put that towards a couple of A321 Neo's and then just kind of quietly let it drift away or is that continue down payment for something new. I guess that's something that we'll have to wait and see.

**[0:15:08.6] GW:** I have no idea. The interesting is that those 100 A321 Neo's going back to the last time American made a big narrow body order. They did 100 737 800s to be followed by a 100 737-8 Max's, and then 130 A319s and A321 COs to be followed on by 130 A320 Neo family planes. They didn't specify which Neo variant they would be getting. We've sort of concluded that they're A321 Neos just because the 319 Neo has not been that popular, and the 320 Neo sits in the same space as the 737 Max 8.

**[0:15:59.3] IP:** Yeah, it's a very curious situation and it's something that I think speak a lot of interest or may be just, I think, a lot of people said, "Oh! New 787 order. That's really great." But thinking about it this way is, "So where's the rest of the money going?"

**[0:16:11.4] GW:** I mean, airlines are not in the habit of walking away from deposits. Let's put it that way. Sort of watch the space. Who knows?

**[0:16:19.6] IP:** We could talk about another deposit so to speak. IAG just put a deposit down perhaps on Norwegian Air Show, which is a fascinating thing to me. This happened this morning, really. So IAG, the parent company of British Airways, Iberia, etc., put a stake down in Norwegian and as kind of a precursor to possibly buying them out.

**[0:16:47.1] GW:** I mean, we can only — Who knows? I mean, it's fast. Again, fascinating.

**[0:16:53.7] IP:** The answer is always “who knows?”

**[0:16:56.8] GW:** The whole scaring of the industry that Norwegian has caused particularly in Europe is fascinating. The responses have varied from our favorite rooftop bar Joon to Level, the creation of Level, which is in another IAG subsidiary which is getting below the surface on that one is odd because it's using ex Iberia planes, and at least the last time I checked was using Iberia pilots with I think [inaudible 0:17:23.3] or Iberia flight crews, but will somehow be transitioning to being operated by Open Skies when Open Skies shuts itself down next month.

**[0:17:36.9] IP:** For those listening thinking that the airline industry doesn't make any sense, you are correct.

**[0:17:42.7] GW:** It's hard to keep track of. I remember having to wade through — Not having to. I remember wading through French webpages with Google translate trying to figure out where the air operating certificate for Open Skies was registered, because the thought was it might have — When this was now set, it might be a Brexit implication, but no. It's a French air operating certificate. But it's fascinating because everyone's been trying to figure out how to counter Norwegian.

IAG started Level, which is A3 3200s operating primarily out of Barcelona, which is the Norwegian long-haul hub. I think the first two routes were Los Angeles —

**[0:18:30.8] IP:** The first was Los Angeles.

**[0:18:31.9] GW:** And Buenos, and there are certain things that don't make sense to me, because once Iberia and British Airways and American got their antitrust immunized joint venture a few years back, Iberia started serving LAX from Madrid within A3 4600, and that flight never really caught fire. From daily to four times weekly, to three times weekly and year round and then three times weekly seasonal in the northern summer, and the notion that the customers, the Level and Norwegian are going after are more time sensitive than cost sensitive is a bit odd, because it would be far easier for Iberia or Level or whatever IAG subsidiary would be to simply price a one stop itinerary from Barcelona changing planes in Madrid and getting on



the Iberia A340 600 that's heading to Los Angeles anyway. That capacities flying anyway, why is it necessary to start bringing in more capacity from a city that's 30 minute flight away?

**[0:19:44.8] IP:** Yeah. I mean, IAG has struggled and I guess all legacy carriers have struggled. Lufthansa has been a little bit more insulated, but the Lufthansa group has also had to deal with kind of a low-cost insurgency. So dealing with this — And we talked about this — Oh, gosh! I don't know how many episodes ago now when Jeremy Dwyer-Lindgren was aboard the first 737 Max delivery for Norwegian and how new aircraft are kind of opening up even more of a whole in the previously well-entrenched legacy carriers where you've got new aircrafts that can perform new missions. Like you said, the 787-9 is an extremely efficient aircraft and well-suited for a lot of these routes, and Norwegians got a bunch of them and they also now have a 737 Max that they're taking across the Atlantic, which is, it continues to be a very interesting thing as far as a use case for new aircraft.

So there is a sense of adding capacity, sure. But I think your point about is additional capacity necessary versus why not just price the flight differently?

**[0:20:49.0] GW:** Yeah, and I think the moves that IAG airlines have made to counter Norwegian have been a lot more pronounced. I mean, just thinking back. British Airways opened Oakland, Gatwick-Oakland, Gatwick-Fort Lauderdale, and restarted Gatwick-JFK to directly compete with Norwegian, and the fact of the matter is in the airline business, certain carriers have advantages and certain carriers have disadvantages. Historically, upstart carriers have a labor cost advantage, because they don't have as — The tenure of their employees is shorter. So in terms of what their salary is, obligations for healthcare or pensions, they're all lower. As airlines mature, sort of your cost per employee rises.

The flipside of this is that mature airlines as supposed to upstarts historically have had a cost of capital advantage. They can borrow at lower interest rates. They can raise capital more easily, because the implied risk is lower. Post-financial crisis — Getting real nerdy here. The zero interest rate environment.

**[0:22:08.3] IP:** We did promise that you are a professional numbers guy. We did promise that.

**[0:22:10.3] GW:** Yes.

**[0:22:13.0] IP:** This is new ground for us. So I'm enjoying it, because Jason and I are decidedly not numbers guys. So it's good to have someone in who actually can explain these kinds of things.

**[0:22:22.6] GW:** I just thought you're trying to get rid of Jason. I didn't realize you actually wanted me.

**[0:22:25.9] IP:** That too.

**[0:22:28.3] GW:** But post-financial crisis with interest rates being held for so low so long, we've seen that cost of capital advantage that the legacy carriers have had go away, and all they're left with is this labor cost disadvantage. So from all in chasm perspective, cost for available seat mile, the legacies, they've got a pricing floor that's higher than Norwegian because of their employee cost.

Now, Norwegian has been growing at such a clip and they're pricing their flights so low that their breakeven load factor is much higher than a lot of other carriers. If you look at British Airways, 15-year-old 777 200ER that they are flying from Gatwick to JFK, well that thing has paid off, and even if it's not paid off, they're much farther along the cost to keep it sitting around is much lower than it is for Norwegian's brand new 787-9.

There's a bit of a waiting game going on and we've seen Norwegian have some really poor financial results of it the last few months. I wouldn't go so far to say that they're hemorrhaging cash, but they're really having a hard time filling these seats, and when you start out at such a low cost for the passenger to begin with —

**[0:23:56.7] IP:** There's only so far you can go.

**[0:23:58.2] GW:** Exactly. There's only so far you can cut before an individual flight is a lost maker even at 88% full. So it's fascinating. I was listening to a podcast yesterday with the Holly Hegeman and even she called this a dysfunctional industry.

**[0:24:16.6] IP:** If anyone can call it a dysfunctional industry, I think she has the right to.

**[0:24:19.7] GW:** She also had the guts to call out Bob Crandall in a written letter, which I don't think I sure don't, even though he's retired. I don't. Yeah, it's fascinating. We'll see what happens. But I was also sort of following this on should IAG go ahead and call it enveloped Norwegian. I could see particularly the flight attendants unions that represent Iberia, British Airways, Air Lingus flight attendants start to get very, very nervous and aggressive, because the flight attendant contracts, they are basically subcontracting out a lot of their flight attendant operations for long-haul or at least they were as of last summer. I'm not sure if that's changed, but a lot of that was done in a sort of roundabout manner from much lower rates than it would cost to hire the same flight attendants on a European contract. So if this is the new way things are going to be done, I could see labor relations getting very fractious at IAG.

**[0:25:24.8] IP:** There are no fewer than 1.7 billion moving parts to this, and we will definitely keep on this, because this could be a really big deal or it could turn into nothing, because this is the airline industry and nobody's assured of anything.

Let's take a quick break and throw it over to Jason and Seth Miller who are in Hamburg, Germany right now for the Aircraft Interiors Expo, and they're going to fill us in on some of the things that we're likely to see in airplanes in the near future and some things that are pretty cool, but we'll probably never see. So we'll throw it over to them and Gavin and I will be back in just a few minutes.

**[0:26:11.7] JR:** So we are here at the Aircraft Interiors Expo. Yes, I just had to look at a sheet of a paper to remind myself where I am. We're in Hamburg, Germany at the annual mega conference that is all things, as you would imagine, aircraft interiors. I think we were here for episode three of the podcast, I think give or take last year, where we talked to Gogo. A lot of his changed in a year, I think. There is a lot of vendors. There are a lot of new people here, a lot of old faces are changing, and I'm here with Seth Miller —

**[0:26:46.2] SM:** And I am not Gogo. So that too has also changed last year.

**[0:26:49.0] JR:** That also has changed.

**[0:26:49.6] SM:** Although I wasn't Gogo last year either.

**[0:26:51.3] JR:** No. You were never Gogo, but I'm here with Seth Miller. He has a new site called PaxEx.aero where he basically writes coherent words about all the things I am thinking about all the time about aircraft interiors, amenities, connectivity and seat power and all that stuff.

**[0:27:06.3] SM:** Other people think it too, Jason. You're just the incoherent one.

**[0:27:08.4] JR:** Right. Yeah. I'm very tired, but I'm always tired on this podcast. So, perfect. So let's breakdown the show real quick. We have a list of things that we like, but what's top of your mind?

**[0:27:20.0] SM:** Top of my mind, and it's on the list, so that's good news, is I feel like we spent a lot of time justifiably complaining about how seats are getting tighter.

**[0:27:30.7] JR:** But they're also getting better at the same time.

**[0:27:31.9] SM:** But they're also getting better, and you it's easy to look at the numbers and say, "Oh, I used to get 32 inches of pitch, and now I get 30 on a good airplane." That must be an awful experience. I don't want to sugarcoat and say, "No. No. No. 30 inches is a great experience," but with the newer seats, at least from a space perspective, I think what we're seeing is that your sort of your knee room space, your shin room space really actually hasn't gone down.

I think there's a window where it did a little bit, because the seats weren't small enough. But now the slim line seats are actually getting to the point that you are getting some of that knee room and shin room back, and we sat in these seats at a number of vendors boost this week at 28 and 29 inches and admittedly only for 3 to 5 minutes at a time.

**[0:28:26.4] JR:** Yeah. I'm not going to seat in that tradeshow seat for seven hours.

**[0:28:30.4] SM:** Right, but they're also not supposed to be at that pitch on those flights for 7 hours. They're supposed to be at the pitch on the flights for two hours, three hours, maybe four. In some places it will be five. There's going to airlines that stretch it — Airlines that stretch things all the time now too. What I think we ended up with though is that it's not quite as awful as it used to be.

**[0:28:52.6] JR:** Right. This has been a trend we're seeing at this show for number of years, is that you had some smaller entrance to the market who are really innovating, bringing seats that were more livable of tighter pitches, which kind of forced the big incumbents to get our act together and offer something new and improved and now we've been seeing it for a couple years, but now it really seems like it's really taking hold.

**[0:29:15.1] SM:** Yeah. So, I mean, some of the vendors — Miris is installing on Air Asia. They actually find it flying now. They've got a handful of airplanes installed, and we talked about these seats. I'm sure we talked about it last year. You should have — We have talked about them a lot over the years. They're going to be on 300 Air Asia plains going forward. We sat in the 29 today, maybe 28.

**[0:29:36.9] JR:** 28 or 29. I don't remember which one.

**[0:29:38.5] SM:** We sat on 28, I think, and it was the gentleman in front of us was 6"2' and he sat down and his knees hit the seat in front of us. You're at 6"1'-ish, had like a half inch gap, and me at 5"11"-ish had like a two inch gap. Is it great? No. But at 29, 28 inch pitch, I didn't have my knees in my chin. Their seat through some interesting design and some work they've done is actually reasonably well-padded and really comfortable for being a short haul, not supposed to be the most luxurious product ever seat. They also have a long haul version that's way more padded —

**[0:30:11.9] JR:** But narrower.

**[0:30:13.0] SM:** A little narrow, because that's the aircraft type. Air Asia does nine abreast on their A330s instead of eight abreast.

**[0:30:18.2] JR:** It's only about 16.9, 17 inches wide and we felt each other's shoulders. It was not ideal.

**[0:30:24.4] SM:** We rubbed elbows so to speak. That was not great, but again, the pitch portion of it, which is usually where people are complaining, wasn't awful. The padding and the new layout, the new design they have for this is, a little more padding on their long haul version than on the short haul because it's longer flights was reasonable.

Yeah. I'm not going to say any of these are Barcaloungers. None of these are going to be the super crazy padded whatever we had in the 70's, but oil cost more and planes crash a lot [inaudible 0:30:53.0].

**[0:30:53.0] JR:** They even took away their retro seats that they had on display. Even those are gone from the booth.

**[0:30:57.2] SM:** That's true. That was Recaro. Sorry. That was Rockwell Collins.

**[0:30:59.9] JR:** Rockwell — No. That was Recaro.

**[0:31:02.0] SM:** Is it Recaro?

**[0:31:02.4] JR:** Yeah.

**[0:31:03.0] SM:** Okay. Yeah. We sat in the Recaro. New product. Their 29 inch pitch and I reclined into you and it was awkward.

**[0:31:09.9] JR:** Yeah. The BL 30 something —

**[0:31:13.3] SM:** 710.

**[0:31:14.5] JR:** Yeah. No one will ever know.

**[0:31:16.5] SM:** Pick some numbers. Throw some letters on it. Maybe it's a Nokia phone. They sold a bunch of phones, so we should probably pay attention out a little bit. But it's — Again, we sat in that seat. I think we sat in the 29. I reclined into you. I think the seats shouldn't recline that much on a short haul flight.

**[0:31:31.3] JR:** Yeah. The recline on that seat was way too much.

**[0:31:34.6] SM:** But if you put it towards up to a lower recline level, it actually would have been reasonable. Again, you're not going to use a laptop on that. Depending on the airline, there may be a tablet holder that could work.

**[0:31:43.0] JR:** Yeah. That got a lot of response on Twitter, is, "Oh my God! I won't be able to use my laptop in economy with these seats." You [inaudible 0:31:49.5] use your laptop in economy for a decade at this point.

**[0:31:54.6] SM:** I would argue you probably never could if you had anything bigger like an 11 inch or 12 inch laptop.

**[0:31:59.8] JR:** These pipedreams of people who are trying to work on their laptops in economy, that's why economy plus exists on airlines that offer in most do. In economy, just stop dreaming about using your laptop. It's not a thing that's going to happen anymore.

**[0:32:12.6] SM:** But I think with a tablet holder and whatnot on some of these, you get some benefit. Again, it depends on the airline if they put a tablet holder in the seat or not [inaudible 0:32:19.7] power in the seat or not, all of those things. But it can be done. It's not the worst in the world. Again, we did it there. We did it at [inaudible 0:32:27.1] like we said. Who else have we sat in? We sat in —

**[0:32:31.0] JR:** Rockwell.

**[0:32:31.9] SM:** Rockwell Collins, which used to be B/E Aerospace. They have rebranded for this year. We sat in their 29 inch and 30 inch seats.

**[0:32:36.8] SM:** They're all quite livable these days.

**[0:32:39.0] JR:** Even with them, we actually sat in the new long haul Aspire product, which United is going to have delivered on its 772s later this year if I remember correctly.

**[0:32:49.1] SM:** Later this week apparently. Is it on that aircraft?

**[0:32:52.4] JR:** I believe so.

**[0:32:53.2] SM:** Okay. So, very soon. Maybe already be in service by the time you're listening to this podcast.

**[0:32:57.2] JR:** That's true.

**[0:32:57.9] SM:** That was actually a pretty nice long haul seat, and we sat in that pitch at 29 or 30, I think.

**[0:33:05.2] JR:** United will probably do 30 to 31 inch.

**[0:33:07.6] SM:** It was — I don't want to say luxurious, but it was damn close.

**[0:33:09.6] JR:** That was nice. Speaking of nice things, we've talked about cookies.

**[0:33:15.4] SM:** You want to go straight there?

**[0:33:16.0] JR:** I'm jumping to the bottom of the list. I want to talk about cookies.

**[0:33:19.0] SM:** Cookies are delicious.

**[0:33:19.2] JR:** Cookies are delicious.

**[0:33:20.8] SM:** What makes cookies matter?



**[0:33:21.8] JR:** What?

**[0:33:22.4] SM:** Being warm.

**[0:33:22.8] JR:** Yeah. Rockwell Collins who used to be B/E Aerospace who will soon become UTC or whatever. There's a lot of name changing, switching around going on here. But they have this new technology where they can build into the side of a galley, a heating — What do they call it? I forgot the technical term. I'll have to look it up, but it's basically a tiny chip.

**[0:33:44.7] SM:** Like a superconductor.

**[0:33:45.5] JR:** it's a super conductor chip. They have a special name for it that they put in the edge of the side of the galley insert and it can either heat or cool passively without refrigeration or anything.

**[0:33:56.9] SM:** It's a much lower amount of electricity consumed?

**[0:33:59.3] JR:** Right.

**[0:33:59.3] SM:** And no fans.

**[0:34:00.6] JR:** Right. So they don't need large refrigeration units or anything, but what they did demonstrate was basically a self-served cookie station. So they envisioned —

**[0:34:10.3] SM:** The flight attendants would bake cookies, but then they'd put them in this cookie warmer.

**[0:34:14.1] JR:** Right, in this warming thing so you could just walk up, grab a hot fresh baked cookie and they actually had hot fresh baked cookies on the stand.

**[0:34:21.8] SM:** At 8:30 in the morning. It was spectacular.

**[0:34:23.6] JM:** It was a great breakfast, part of any nutritional breakfast.

**[0:34:26.4] SM:** Yeah. I'm disappointed that they didn't open the chilled champagne bottles that were directly below the cookies, because if you're going to do breakfast of champions, you —

**[0:34:32.1] JR:** Chocolate chip cookies and champagne.

**[0:34:33.4] SM:** And it's the Peltier effect.

**[0:34:35.4] JR:** There it is.

**[0:34:37.9] SM:** It's a neat thing. It's basically like a six-inch deep unit, so it's relatively small. It can bolt on to the side of a galley that already exists so the airlines can add it on without decreasing flight attendant access, without really getting in the way of people doing to the lab. It's one of these things, it's like this is an add-on that, yes, it costs some money, add some weight. There's all these things, especially like for the airlines that actually want to really be nice to their passengers. It's available today and it's really cool, and like the way the cooling and the heating works, maybe it stops being — Champagne bottles. I was lobbying for ice cream sundae self-served bowl could get a little messy.

**[0:35:13.4] JR:** I could see the cookie situation being a problem if they bake a batch of a dozen cookies and they put it in the warmer where everyone's going to smell it, get up and run to the galley and they want to get a cookie.

**[0:35:21.2] SM:** Remember, no loitering or queuing in the galley or lavatory areas.

**[0:35:23.9] JR:** Right. It's safety regulations.

**[0:35:24.6] SM:** That's right.

**[0:35:25.5] JR:** [inaudible 0:35:25.6] nonsense.

**[0:35:27.6] SM:** Yeah. I agree with you that that was definitely very cool. Very, very cool.

**[0:35:31.5] JR:** Outside of the box thinking, and it's just like this little half inch by half inch chip that produces heat or coolness. I don't even know, but cold, but it was very interesting.

**[0:35:41.7] SM:** Creates heat and sucks it away from you.

**[0:35:42.9] JR:** Basically.

**[0:35:43.9] SM:** Sucker instead of a cooler.

**[0:35:45.3] JR:** Yeah. So now I'm going to the middle of the list here. The Airbus zodiac [inaudible 0:35:45.3] birth bunk bed thing.

**[0:35:53.7] SM:** Lower storage bins.

**[0:35:55.7] JR:** Lower human storage receptacle.

**[0:35:58.9] SM:** Yeah. We got that whole joke that humans are self-loading cargo.

**[0:36:02.9] JR:** They really can be a self-loading cargo now.

**[0:36:05.8] SM:** The theory here is from Airbus and sort of the industry across the board is that cargo is down, cargo shipment — Or shipments, cargo shipments is not down, but capacity in dedicated cargo wide body fleets is up. We got 748s, Qatar Airways just bought a bunch. actually during the show announced an order for 5 more 777 freighters, and it's really interesting to see how that capacity is growing, but what that means is airlines that depended that are passenger airlines that used to depend on filling the belly with cargo on a lot of routes. They're starting to see that revenue wait.

**[0:36:39.0] JR:** Empty space.

**[0:36:39.9] SM:** Empty spaces. How do they start to recoup some of the revenue now that they're missing because of this, and they've got all these empty bin spaces down below. Rather than putting those giant LD3s or whatever bins filled with bags below, or cargo, the idea is that

they can put sort of semi-permanent install these things and put bunk beds or a movie studio or a bar or any — A playground, but bunk beds is really the thing that's going to sell it.

**[0:37:08.9] JR:** Yeah. You're not going to see a movie studio or an office type thing down there, I don't think. Unless it's a business jet of some sort, but bunk beds and some of these flights that the industry is doing, now Qantas, Perth to London. They want to do Sydney to New York nonstop, 17, 18, 19, 20 hour flights. If I'm in economy, I would pay good money to go down to one of these things and basically take a nap on an actual bed.

**[0:37:38.0] SM:** Yeah. Listen. I don't think that there's anyone out there you'll find flying an economy on an ultra-long haul flight that says, "No. I don't really want a bed for a couple of hours."

**[0:37:47.9] JR:** If they said that, they'd be lying.

**[0:37:49.8] SM:** Most likely. There'll be plenty of people demanding. There are a bazillion reasons this won't work. There's a couple of reasons it will also potentially, but there's a lot of justified skepticism in the industry, justified skepticism around whether these will really fly or not, starting with there's not that much ceiling height downstairs.

**[0:38:09.4] JR:** Right. It's only — What?

**[0:38:10.7] SM:** 1.6 meters.

**[0:38:11.6] JR:** Yeah.

**[0:38:12.7] SM:** Because it's a semi-permanent. If they installed it permanently, which they're not going to do that, but on the 330s, Thomas Cook has done this. They put the labs downstairs on the 346. Lufthansa's put their labs downstairs. Those are full height. Those you can make work. There's something about with like the rail kits and everything else installed. The cargo bins that would have these kits are smaller. So will it work if you have to go downstairs and then like hunch over to get all the way to a bunk? That's going to be challenging. There's evacuation questions. There's a lot of questions about whether this is legit or not, and let's not forget that

the fly transpose that was part of the Airbus Silicone Valley thing was basically this, but for the upper deck. Just suspended, because it was never going to fly.

**[0:38:56.1] JR:** Right, but upper deck is a big, big difference.

**[0:38:58.2] SM:** Upper deck is a bigger difference. It is a big difference between the upper deck and lower deck, but the fact that this came out literally like weeks after transpose said, “Ha! Ha! We’re done. Thanks for playing alone,” raises additional questions in my mind. I think it’s a great concept to talk about. It’s obviously something I want desperately, and I think it’s good that some people are talking about ways to continue moving the industry forward in unique and challenging ways that can increase revenue for the airline, can increase passenger comfort, can not screw things up too much, but it’s still unclear that we’re actually going to get there. This isn’t Skyrider that I’m going to go out of my way in the saddle thing that I’m going to go out of my way and say, “This will never fly.” But I’m pretty skeptical.

**[0:39:36.9] JR:** And we’ve seen plenty of that at this show that we look at and say, “This will never fly. Why are you here wasting our time?” I can see a few just from where we’re sitting right now.

**[0:39:45.0] SM:** Don’t name names.

**[0:39:45.7] JR:** I’m not going to name names.

**[0:39:45.7] SM:** I already screwed up the name once.

**[0:39:49.1] JR:** Let’s talk about that really, really briefly. EAN is European Aviation Network, which is basically Europe answered to Gogo’s air to ground network. It’s a network that doesn’t rely on — Well, technically, doesn’t rely on satellites. We could talk about that real quick.

**[0:40:06.4] SM:** Yeah, they acknowledged that they could run the whole thing up from the ground. I mean, they’ve been saying that for a while now but —

**[0:40:10.6] JR:** They’re not supposed to.

**[0:40:12.5] SM:** Well, they're not supposed to run it that way, whether they're supposed to say it or not, who knows?

**[0:40:16.8] JR:** They have a couple of hundred cell sites spaced all throughout EU, member countries as well as Norway and —

**[0:40:24.7] SM:** The Balkans — Sorry. The EU is EU, plus Norway, Sweden and — I don't know if Iceland's included — or not Iceland, England.

**[0:40:31.8] JR:** Yeah, UK.

**[0:40:33.1] SM:** No. [inaudible 0:40:33.8] Iceland is not EU, but they're Schengen? I don't know.

**[0:40:36.7] JR:** They're not it. Anyway, basically they have a bunch of ground networks with the equipment that points up instead of down at people, and it's an LTE-based network and it's being installed right now on IAG member airlines. That's BA, Welling, Iberia and we've been hearing about it for years, but it seems like we're finally ready to see some actual competition when it comes to Wi-Fi on European short haul. We got to go up to one of the towers here in Hamburg, sort of. There's a big, huge tower, the —

**[0:41:12.3] SM:** Hurst. His name is Mr. Hurst, the gentleman who discovered or had a huge part in developing electricity and alternating current.

**[0:41:20.2] JR:** There you go. We went up to the top of the tower, saw some of the equipment, Nokia's 5G equipment. We weren't allowed to take any pictures, because apparently it's a secret. But that was cool. They have a couple of hundred of those throughout Europe and they're finally launching.

**[0:41:33.8] SM:** Yeah. That'll finally go live. I mean, they've got some hardware installed on roughly 100 aircraft. We can't get a confirmation of an exact number, but no one's smacked us around for a second for 100. I think we're pretty close there.

**[0:41:47.3] JR:** Lastly, this is actually the last thing we saw at day two of three of this show, was Lufthansa's systems board connect portable IFE system, which is basically a steaming entertainment and shopping system that works over Wi-Fi that they more or less just put in overhead bin and close the bin and leave it. That's the extent of the system. They can also plug in into aircraft power so it can work without having to rely on batteries. But they have this interesting thing that I always wondered how these systems that aren't plugged into the aircraft physically know where they are, because you go on to the portal and you see like the flight map. You see where you are in relation to the world, speed, heading and all that and it looks a lot like Flight Radar 24, except you don't see all the other aircraft. You just see yours, and I wondered how do they get that information. It turns out they actually use an ADSB receiver in their little board connect package, which is basically — What? It looks like a tablet that they just kind of —

**[0:42:48.3] SM:** Yeah, it's like a six inch tablet —

**[0:42:50.2] JR:** Bolted in some equipment on.

**[0:42:50.9] SM:** It's a six inch tablet that's been rubberized hardened for sort of more aggressive travel. Then they mounted on another kit so it slides into this mounting bracket correctly. The mounting bracket has a power core on it so it lasts in whatever, but it also has this ADSB receiver apparently, and I don't know if maybe that's part of the mounting bracket or what, but somewhere on that box, obviously the antennas could be very small.

Somewhere on that box is a receiver that it doesn't have to be very big, because the signal is coming [inaudible 0:43:19.1] — The call is coming from inside the house. The signal is coming from onboard the plane. The ADSB transmission that's coming off the aircraft gets picked up among other things by this box on the plane and it knows which plane it is. They have some fancy software that helps them figure that out, because it also picks up signals from passing aircraft and other things and they're working on getting that even more reliable, but they literally are transmitting the data to the people on the plane, the same as we see it on FR24.

**[0:43:47.6] JR:** Yeah. Super interesting. I never really thought about it, but —

**[0:43:51.4] SM:** It's a great way to do it.

**[0:43:51.8] JR:** Whatever works. That's really an innovative way to do it. That's about all we got for you here this year. If we see anything really super cool on day three, I'll be sure to mention it next time we get around to recording a podcast in about two weeks. But, Seth, thank you very much for joining.

**[0:44:08.3] SM:** Pleasure as always to be here.

**[0:44:10.0] JR:** Where can we find you?

**[0:44:10.8] SM:** As you said at the beginning of the call, paxex.arrow, all about the passenger experience.

**[0:44:16.3] JR:** You need to print up some business cards already.

**[0:44:17.9] SM:** And actually do a business out of this, but hey, what the hell.

**[0:44:20.8] JR:** Yeah. That and on Twitter @WandrMe.

**[0:44:23.5] SM:** W-A-N-D-R-M-E.

**[0:44:25.9] JR:** That's it. You had to think about that for a second, didn't you?

**[0:44:27.5] SM:** I like to pause and make sure people understand where the letters are missing.

**[0:44:30.9] JR:** Nice. Thanks for joining me and this is probably the part where Ian would like me to toss it back to him in some sort of transition way, but back to you, Ian. Off to Ian. Bye.

**[0:44:49.4] IP:** Jason and Seth sound like they're having quite a bit of fun in Hamburg and hopefully —

**[0:44:53.8] GW:** Way too much fun.



**[0:44:54.9] IP:** Exactly. So hopefully we we'll hear more what their — They're still exploring, and so on the next podcast we'll hear a little bit more about what they got up to and some of the things that we're actually likely to see on the aircraft. I don't think we're going to see sleeping births in the cargo hold anytime soon, but the idea, it's an interesting one.

**[0:45:14.3] GW:** I mean, it would be nice. I'm with you though. I think the evacuation restrictions are going to be the biggest problem there.

**[0:45:22.1] IP:** As anyone who is ever seen the movie Air Force One knows, and of course this is installed on most planes. There's an escape pod.

**[0:45:28.4] GW:** Of course.

**[0:45:29.0] IP:** So why not just have it as an escape end? No. I'm kidding. No one right in and say — I was kidding. I was kidding. There are no escape pods for commercial aircraft that we know off. Anyway, at the top of the show I mentioned that you were a contributing writer for Runway Girl, a professional numbers guy. So we've covered those two. We haven't talked about wildlife photographer and we haven't talked about avgeek uber nerd, and as far as that goes, you did an incredible amount of flying last year in a very short span of time.

**[0:46:02.3] GW:** Yeah. I think my overall numbers for the year were about 98,000 miles, which is not, consultant is going to go, "Pfft!"

**[0:46:11.9] IP:** It's a lot of flying, but we're not talking in the to 200,000, 300,000 miles a year, flying on Monday, flying on Thursday every week kind of thing.

**[0:46:20.7] GW:** Right. The big crunch was that about 58,000 of it occurred in less than 90 days.

**[0:46:27.6] IP:** That's a lot of miles in a little bit of time.

**[0:46:28.5] GW:** Yeah. It was a lot, lot, lot of flying. That was three trips to Europe and two trips to Africa via Europe

**[0:46:41.3] IP:** I'm assuming that the trips to Africa were for the wildlife photographer portion of your —

**[0:46:46.4] GW:** Well, one was, and the other one is my capacity as a professional numbers guy.

**[0:46:51.1] IP:** Aha!

**[0:46:52.8] GW:** So it was definitely a mix. It got off to a bit of an inauspicious start as my wife and I got stuck in London against our will when the big British Airways IT meltdown happened.

**[0:47:06.7] IP:** Oh, right! Right.

**[0:47:08.0] GW:** In May, which was highly unpleasant to say the least.

**[0:47:11.9] IP:** That was the, “Oops! We unplugged something,” about them.

**[0:47:15.4] GW:** Yes. We haven't heard anything about what actually happened, but yeah it was, “Oops! All the systems went down. Everything.” So that was not so fun. Spent way too much time on British Airways 747s.

**[0:47:28.7] IP:** Which are not the youngest 747s on the block.

**[0:47:32.3] GW:** I mean, as far as passenger 747s, they are, because there just aren't that many of them around anymore.

**[0:47:37.3] IP:** Okay. That's fair.

**[0:47:38.4] GW:** They had some — I think the newest ones are like 1999 deliveries, 1998 deliveries. Almost all the ones I was on have been refurbished with the Panasonic IFE, which was very, very much appreciated because a large portion of British Airways fleet has a AVOD, AVOD system, AV on demand system that dates back to I think 2002.

**[0:48:04.1] IP:** You can put the tapes in. No, not quite that old..

**[0:48:08.0] GW:** But it's still like 4x3 aspect ratio. It's still like an old television. Yeah, there was that. I got to fly on some cool planes that you don't really get to fly on that often. I got to fly in a twin otter, which I love, which are really great planes that you find flying in and out of dirt strips lot in like Canada, rural Canada and Central Africa and Alaska and places like that where you don't have a lot of paved runways, and they are really powerful and can take off with a very high load in a very short distance. So that was definitely, definitely fun. I loved my little twin otter ride out to the Maasai Mara for the what is the greatest wildlife show on earth, the great wildebeest migration, which was a lot of fun and a lot of wildebeest. They move in large groups. I think I saw like 50,000 in one afternoon once. It was pretty insane.

**[0:48:58.9] IP:** We'll have to put a link in the show notes to some of that.

**[0:49:02.5] GW:** Okay, sounds good. But it's funny, my numbers impulsiveness or compulsion. I'm sure which one. not I'm not a psychiatrist or a psychologist, but I sort of logged all my flights and I've been using a website for a number of years that all of a sudden I saw it was now part of Flight Radar.

**[0:49:21.1] IP:** Aha! How about that? So what you're referring to is now called My Flight Radar 24. It used to be Flight Diary and a few years ago, or last year now, we gave it a little bit of love and upgrade and added kind of more power to the statistics computation and gave it a facelift and things like that and brought it under the Flight Radar 24 envelope. No. It's a great site I think for anyone who's interested in in numbers behind flying, but who also just wants to keep track of where you're going and things like that.

I use it to keep my family members happy when I'm flying somewhere. So I'll go be on the plane and I automatically send — I don't have to do anything. So if the plane doesn't have Wi-Fi, I don't have to worry about it, but I'll punch in the flight number beforehand and then it automatically sends a Facebook message or a tweet or something that says, "I'm taking off from. I'm going in." You can also send one that says, "I landed," because I formally would get yelled, "I've no idea where you are," and so this makes it very easy. Yeah, it's a lot of fun, and I

think we added some cool graphics to give you a sense of what you're flying, how you're flying there, and you can download a route map that kind of shows you where you've been over the year or years depending on how long you've been using the service.

**[0:50:47.4] GW:** I'm looking at my profile now, and I am at 1,206,325 miles.

**[0:50:54.6] IP:** There you go. How many would the distance to the moon, I guess, is the —

**[0:50:58.4] GW:** 5.05 times to the moon.

**[0:51:01.0] JR:** There and back.

**[0:51:03.1] GW:** A few times. No. I'm just there. I need to log another half time.

**[0:51:08.4] IP:** Yeah, you're stuck on the mood right now. That's a fair point.

**[0:51:11.0] GW:** Exactly. Although what's interesting is that it shows like your top aircraft by number of flights and miles, and I'm looking at mine and over a quarter of those 1.2 million miles have been on 747 400s.

**[0:51:24.0] IP:** I would say that's unusual for most people. I think the top overall is the 737 family from pure longevity and ubiquity. But I want to go back to the moon for a second and space, because I want to close on something that is really cool. The Virgin Galactic VSS Unity, their spaceship 2 had its first powered flight last week, and it was really fun to watch because you can track it on Flight Radar 24. So it's really fun, sort — We'll get to that part in a second. White Knight II, the carrier ship that's basically a giant airplane that carries this spaceship in between two fuselage sections before kind of dropping it and then VSS Unity starts its rocket motors and away it goes. You can track them together, and so you these two icons sitting on top of each other for a little bit and then they separate, and that's always fun to watch.

Up until now, they've separated and then they flown and landed back in the Mojave Desert. Last week, VSS Unity first powered flight hit its rocket motors, pulled up into an 80° incline flight and

hit Mac Mach something. I forgot. It was like 1.87 or something like that, and went up to 80 somewhat thousand feet.

We didn't quite show that on the site, and so I was like, "Well, that's interesting, because we have data, but it seemed like it was hitting some sort of a ceiling." So I checked with our developers. Our MLAT tracking is designed to track commercial aircraft, which don't fly above 8/10ths the speed of sound, 8/10ths if we're lucky and certainly don't fly above 60,000 feet.

When we looked at the data we're like, "Why are we getting this interesting data?" and it turns out that there's some sanity checks that a rocket equipped with a Modes transponder fails. So the system was like, "This can't happen. You're wrong. It's not doing that." So I asked if there is something we could do for the next flight to maybe get a little bit more data, and it seems like there might be some work that we can do, but we'll see if anything can be done to —

**[0:53:32.9] GW:** I wonder if you could convince them to put an ADSP transponder in it.

**[0:53:36.6] IP:** That would be nice. I would love to be able to do that, and it's something that I wouldn't say no to. But we talked about this before I think in a previous episode where it'd be cool to have an ADSP transponder on a spaceship, but we'll get there eventually, I hope, because this is a reusable aircraft. So it's going to have to come back through the National Airspace System and it basically lands on a runway. So hopefully it'll eventually be equipped with an ADSP transponder, but we'll see all in due time, I guess.

**[0:54:08.2] GW:** So basically what you're saying is that just like a Tesla, Flight Radar 24 has an insanity mode.

**[0:54:16.2] IP:** Hopefully. Hopefully, one day. Gavin, I want to thank you so much for joining us, especially for your numerical insight. I think a lot of our listeners — Not a lot, but more than a few have written in saying, "Let's get into the weeds a little bit more on numbers and things like that," and so you've been a very, very welcome addition to our insights about what's going on in the commercial aircraft space. I was like hearing about your travels, because they're just so many of them. Thanks for joining us and hopefully we can have you back on a few trips.

**[0:54:49.2] GW:** Thank you for having me. Hopefully we can send Jason to Germany more frequently.

**[0:54:52.7] IP:** I mean, we can send them somewhere. I am Ian Petchenik, here with Gavin Werbeloff for the first time and hopefully not the last. Jason will be back next episode from Germany we hope, and we'll talk to you then. Thanks so much for listening.

[END]