

Testimony of APEX/IFSA CEO Dr. Joe Leader

Chairman Larsen, Ranking Member Graves, and Members of the Subcommittee.

My name is Dr. Joe Leader and I proudly have served since 2015 as the Chief Executive Officer of APEX, the Airline Passenger Experience Association, one of the largest international airline associations in the world. During my tenure as CEO, APEX came together with IFSA, the International Flight Services Association, giving us a combined history of 96 years of proudly advancing nearly every major airline and valued supplier worldwide.

I am before you today because I believe deeply in the advancement of airline passenger experience. Like each of you, I began my journey as an airline passenger. Twenty years ago, while working as a high-tech executive, I was featured in a magazine as an airline's most frequent flyer. As a part of that honor, I met with the airline CEO and shared with him a page-long list of ideas on how the airline could better serve its customers. They implemented nearly every single idea.

With that introduction, please allow me to address the subject of "The Airline Passenger Experience: What It Is and What It Can Be?" APEX neutrally tracks, verifies, validates, and certifies ratings for over 1 million flights across approximately 600 airlines globally for the Official Airline Ratings™ via Triplt, the leading travel management app worldwide. Only 1 in 17 airlines makes it to APEX Five Star status while another 1 in 17 reaches APEX Four Star Status. I am proud to share that the United States reached an incredible milestone last year as Alaska, American, Delta, Hawaiian, JetBlue, JSX, Southwest, Spirit, and United all reached either Four or Five Stars status as independently rated by their passengers. Spirit Airlines has proudly joined me today at this hearing to share how their "invest in the guest" philosophy has improved their independently verified passenger ratings thereby advancing themselves to an APEX 2020 Four Star airline.

In good news for all Americans, the inflation-adjusted cost of air travel has dropped by approximately 50% over the past two decades¹²— keeping air travel costs lower than historic totals even after including all ancillary revenue fees.³ From a dynamic market perspective, competition has driven US airlines to offer more variety in types of passenger experience than ever before⁴. Innovation has enabled US airlines to offer better options to their customers including the disabled⁵. To that end, APEX served a leading role in the US Department of Transportation's ACCESS Advisory Committee advancing closed captioning and audible description options. Voluntarily, US airlines have been placing these enhancements across new in-flight entertainment systems in both seatback screens and bring-your-own device options. For better accessibility, manufacturers are creating better options for improved ease-of-access for wheelchair bound passengers.⁶⁷ This resonates personally for me with the Paralyzed Veteran's of America testifying here today as

¹ Belobaba, P., Hernandez, K., Jenkins, J., Powell, R., & Swelbar, W. (2015). Productivity trends in the US passenger Airline Industry 1978-2010. *Transportation@MIT*, 1-24. Retrieved from

https://transportation.mit.edu/sites/default/files/documents/MIT_Air_Passenger_Report.pdf

² IATA. (2019). Economic Performance of the Airline Industry. Retrieved from

<https://www.iata.org/contentassets/36695cd211574052b3820044111b56de/airline-industry-economic-performance-dec19-report.pdf>

³ Hill, Catey (March 26, 2019). Marketwatch. "The uncomfortable reason you're seeing dirt cheap airfares right now." Retrieved from <https://www.marketwatch.com/story/the-uncomfortable-reason-youre-seeing-dirt-cheap-airfares-right-now-2019-03-26>

⁴ Kim, S., Kim, I., & Hyun, S. S. (2016). First-class in-flight services and advertising effectiveness: antecedents of customer-centric innovativeness and brand loyalty in the United States (US) airline industry. *Journal of Travel & Tourism Marketing*, 33(1), 118-140. DOI: <https://doi.org/10.1080/10548408.2015.1038420>

⁵ Most studies report complaints by disabled. This study shows a reduction in complaints by one airline, and other positive remarks alongside complaints. Major, W. L., & Hubbard, S. M. (2019). An examination of disability-related complaints in the United States commercial aviation sector. *Journal of Air Transport Management*, 78, 43-53. DOI: <https://doi.org/10.1016/j.jairtraman.2019.04.006>

⁶ The level of implementation is still low. See United States Government Accountability Office, GAO. (2020). Few U.S. Aircraft Have Lavatories Designed to Accommodate Passengers with Reduced Mobility. *Aviation Consumer Protection*. Retrieved from <https://www.gao.gov/assets/710/703687.pdf>

⁷ Taylor, Stephanie (February 12, 2020). APEX: "New Aircraft Lavatory Concept Is Accessible to Passengers in Wheelchairs."

my wife personally served a quadriplegic before becoming a medical doctor and my father proudly served in the U.S. Army and flies frequently with my family using his wheelchair.

What does the future bring for US airline passengers? Our customers will enjoy flights more than ever with expanded entertainment and connectivity options. The number of aircraft with in-flight entertainment screens worldwide will continue to increase while “bring your own device” options will surge to cover nearly all remaining commercial US aircraft this decade⁸⁹. As an example of innovation, each new screen installed by Delta weighs approximately 2 pounds less than its predecessor saving millions of gallons of fuel despite even more screen size for passengers¹⁰. New technologies from our key airline suppliers will make future seatback screens nearly as thin and light as seatback hard plastic. Seating advancements have enabled passengers 2” to 3” more legroom than historic seats in existing space.¹¹ US airline ticket prices should continue to track lower than the rate of inflation as airlines now burn 53.7% less fuel per passenger¹² than the 1990s. This helps benefit our passengers, our airlines, and our world with a carbon emissions reduction averaging 2.3% less each and every year for the past decade alone¹³. Our US airlines are voluntarily spending tens of billions of dollars enhancing airports to better serve their customers including implementation of face-matching from the US Department of Homeland Security that securely interlinks with our airlines without any transfer of photos¹⁴. Other new technologies being deployed by our airlines are advancing to complete journey management including ground transportation, automated bag tracking all along your journey¹⁵¹⁶, and remembering personal preferences for food and beverage ordering in-flight. This is only the beginning of a decade of advancing one-to-one airline customer service.

While I recognize that this merely scratches the surface of advancements, I look forward to your questions so that I may share innovations that our airlines and key suppliers are advancing to best service customers across the United States and around our world.

⁸ Delta continues to invest in seatback screens rather than BYOD. Modolo, K. (n.d.). 3 ways Delta Flight Products is revolutionizing aircraft interiors. *Delta News Hub*. Retrieved from <https://news.delta.com/3-ways-delta-flight-products-revolutionizing-aircraft-interiors>

⁹ *APEX Experience Magazine* (April-May 2018)

¹⁰ Delta Professional. (April 25, 2019). How Delta’s new wireless IFE tech helps cut emissions. Retrieved from <https://pro.delta.com/content/agency/in/en/news/news-archive/2019/april-2019/how-delta-s-new-wireless-ife-tech-helps-cut-emissions.html>

¹¹ Chartered Institute of Ergonomics & Human Factors (September 2019).

¹² IATA / ATAG Geneva Meeting (January 2020)

¹³ IATA. (December 12, 2019). Carbon Emissions Per Passenger Decrease More Than 50% Since 1990. Retrieved from <https://www.iata.org/en/pressroom/pr/2019-12-12-01/>

¹⁴ Abandoned. See Metz, R. & CNN Business. (December 5, 2019). Homeland Security drops plan to use facial recognition on traveling US citizens. CNN Business. Retrieved from <https://edition.cnn.com/2019/12/02/tech/homeland-security-facial-recognition-citizens-at-airports/index.html>

¹⁵ Delta News Hub. (n.d.). Delta introduces innovative baggage tracking process. Retrieved from <https://news.delta.com/delta-introduces-innovative-baggage-tracking-process-0>

¹⁶ IATA. (June 2, 2019). Resolution: RFID Baggage Tracking Set for Global Deployment. Retrieved from <https://www.iata.org/en/pressroom/pr/2019-06-02-05/>

How Tript are Captured

Example: Spirit / United

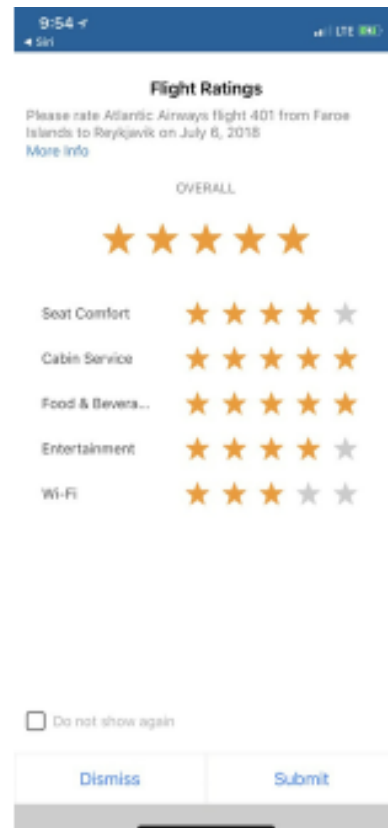
- Tript simply organizes all portions of a trip without ever competing directly with airlines as a booking channel; enables check-in via any airline
- Tript groups the Spirit flight, hotel, restaurant, and United flights as a single trip
- Tript allows everyone to rate flights, but APEX only accepts ratings that are validated, APEX verified, and certified by our outside auditor



Easily Rating Every Airline

Example: Atlantic Airways

- Faroe Islands based airline using Airbus 319/320 aircraft made it as 2020 APEX Four Star Low-Cost Carrier in Official Airline Ratings
- Example here booked via third party booking service after Atlantic Airways website would not easily sell tickets to US resident
- Tript picks up the itinerary sold via any channel and activates ratings upon landing



2020 Official Airline Ratings Winners

FOUR AND FIVE STAR RECIPIENTS OF THE 2020 OFFICIAL AIRLINE RATINGS™ *(All Listed in Alphabetical Order)*

FIVE STAR GLOBAL AIRLINES

- Aeroflot
- Aeroméxico
- Air New Zealand
- American Airlines
- All Nippon Airways
- Asiana Airlines
- Cathay Pacific
- China Airlines
- Delta Air Lines
- Emirates
- EVA Air
- Japan Airlines
- KLM Royal Dutch Airlines
- Korean Air
- Lufthansa
- Qantas
- Qatar Airways
- Singapore Airlines
- SWISS International Air Lines
- Turkish Airlines
- Virgin Atlantic

FIVE STAR MAJOR AIRLINES

- Air Astana
- Air Tahiti Nui
- Alaska Airlines
- Avianca
- Bangkok Airways
- Copa Airlines
- Hawaiian Airlines
- JetBlue Airways
- Kuwait Airways
- Middle East Airlines
- Royal Brunei Airlines
- Virgin Australia
- Vistara

FIVE STAR REGIONAL AIRLINES

- Aeroméxico Connect
- JSX

FOUR STAR GLOBAL AIRLINES

- Aerolineas Argentinas
- Air France
- Air Italy
- British Airways
- China Southern Airlines
- El Al
- Etihad Airways
- Finnair
- LATAM Airlines Group
- LOT Polish Airlines
- Scandinavian Airlines (SAS)
- Thai Airways International
- United Airlines
- Vietnam Airlines

FOUR STAR MAJOR AIRLINES

- Aer Lingus
- Air Europa
- Austrian Airlines
- Caribbean Airlines
- Fiji Airways
- Gulf Air
- HiFly
- Icelandair
- Kenya Airways
- Malindo Air
- Oman Air
- Philippine Airlines
- SriLankan Airlines

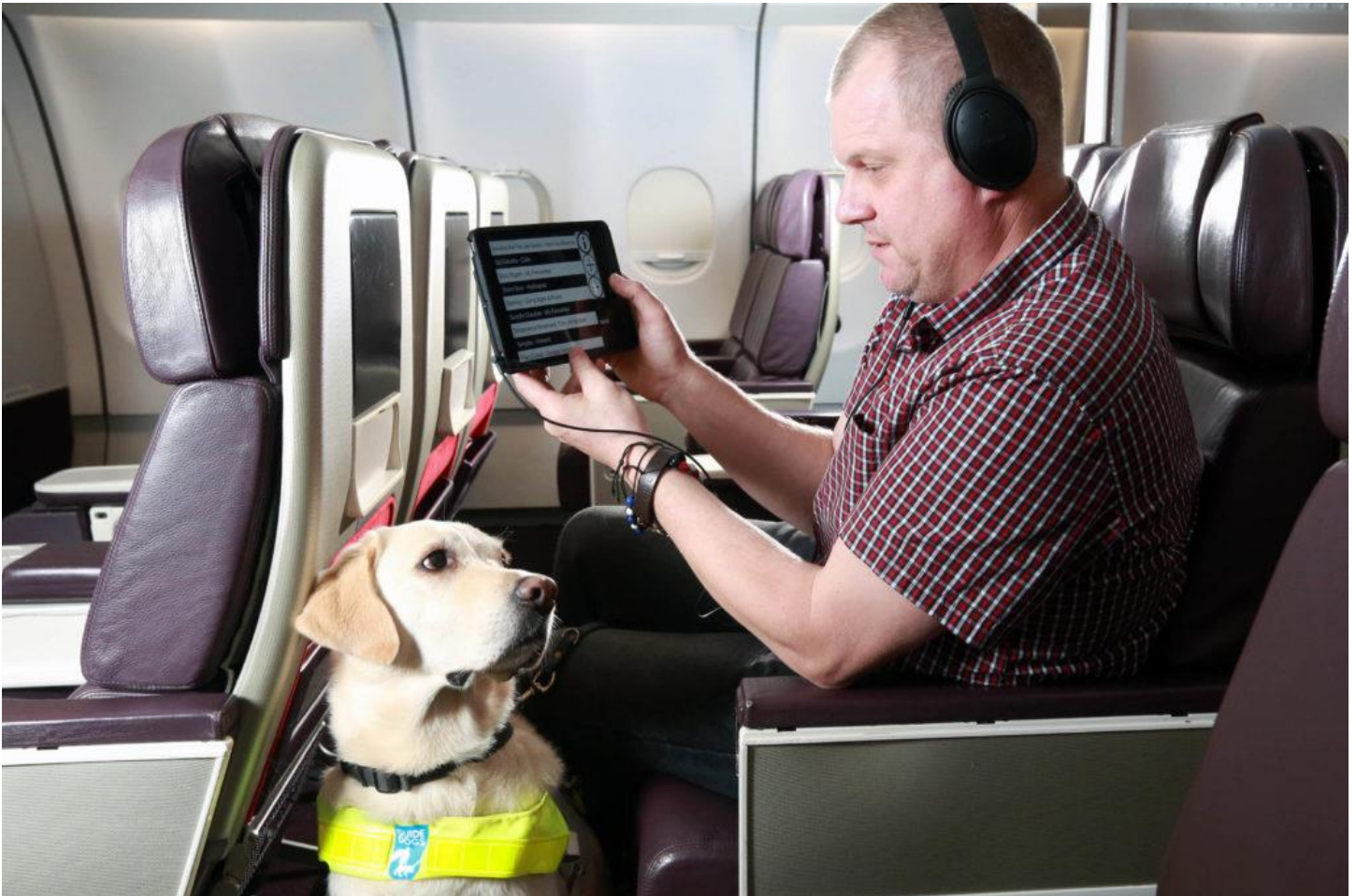
FOUR STAR LOW-COST CARRIERS

- Atlantic Airways
- Citilink
- GoAir
- Interjet
- Norwegian
- Southwest Airlines
- Spirit Airlines
- WestJet

[And the 2018 Crystal Cabin Award Winners Are...](#)

11 April, 2018 in [Industry](#) Written by [Caroline Ku](#)

APEX CEO Joe Leader was on the judging panel and also presented the IFEC award.



IFEC award winner: Bluebox aIFE: Accessible IFE for passengers with visual impairment – Bluebox Aviation Systems (cooperation partners Virgin Atlantic Airways & The Guide Dogs for the Blind Association)

Entertainment for All! United Airlines' New Accessible Inflight Entertainment System Wins Crystal Cabin Award

April 04, 2019

CHICAGO, April 4, 2019 /PRNewswire/ -- At this year's annual Aircraft Interiors Expo in Hamburg, Germany, United Airlines was awarded the Crystal Cabin Award for Inflight Entertainment and Connectivity for its new onboard entertainment interface, which recently debuted on the airline's 787-10 Dreamliner fleet. The highly coveted award, which is the standard by which airlines, manufacturers, suppliers and design and engineering firms are judged, recognized the efforts of United and its partners at Panasonic Avionics to provide customers with what is the most accessible airline entertainment system in the world.

"Accessible and relevant inflight entertainment plays a major role in customers enjoying their flying experience and we wanted to create a system that all United customers could enjoy, including customers who have varying vision, hearing or mobility requirements," said Toby Enqvist, senior vice president of customers at United. "Together with Panasonic, we spent three years building a system that is truly inclusive, and we look forward to adding it to more aircraft soon."

This new system offers the world's most extensive suite of accessibility features on seatback entertainment, which accommodates any level of vision, as well as provides support for customers with hearing and mobility issues. These features include:

- Text-to-speech with reading granularity options
- Customizable voice volume, speed and pitch
- Explore by touch features including screen magnification, customizable text size, high contrast text options, color correction options and color inversion options
- Custom messaging tailored for customers with hearing disabilities
- Additional navigation options for mobility impaired passengers who are unable to swipe or use handset features

The system also provides the following enhancements that improve the overall experience for all customers:

- Split screen capabilities that allow customers to watch a movie and view the flight map simultaneously
- A relax mode that lets customers customize a selection of soothing videos and relaxing audio playlists
- Movie and television recommendations based on remaining flight time, previously watched content and movies and shows that have been added to a customer's favorites list

[New Aircraft Lavatory Concept Is Accessible to Passengers in Wheelchairs](#)

12 February, 2020 in [Comfort](#) Written by [Stephanie Taylor](#)

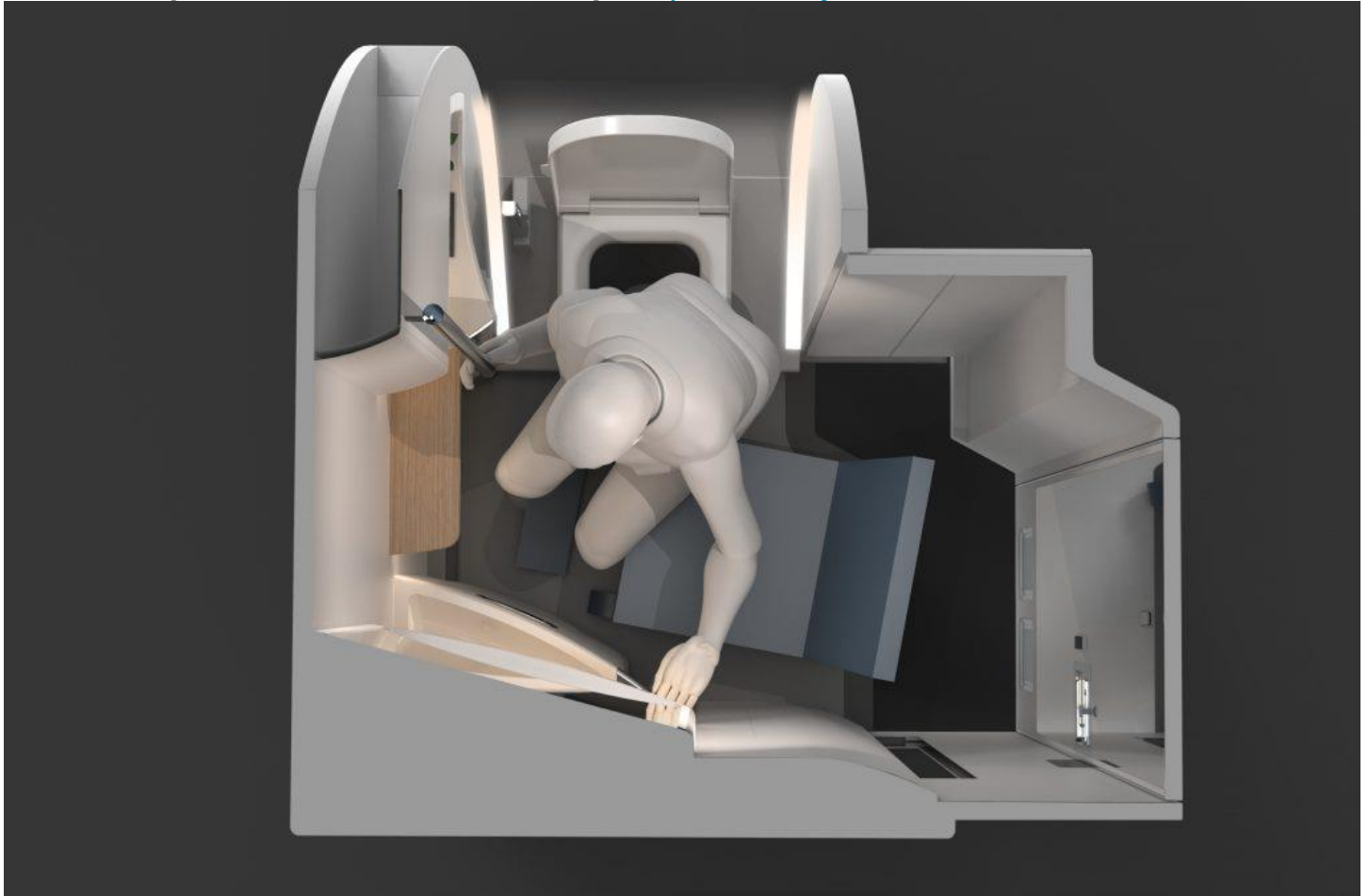


Image via Acumen Design Associates

Acumen Design Associates and ST Engineering have jointly developed ACCESS, which they describe as “the world’s first expanding aircraft lavatory,” to improve the flying experience on single-aisle aircraft for passengers with reduced mobility (PRMs). As narrow-body flight times grow in length, the need to make lavatories more easily accessible is imperative.

In certain countries, there’s currently no legislation regarding the availability of an accessible lavatory on narrow-body jets, but arguably, there’s more need for the facility than ever. With new aircraft types such as the Airbus A321XLR featuring a range of up to 4,700 nautical miles, narrow-body jets are now capable of flying longer, even [transatlantic routes](#).

Daniel Clucas, senior designer at Acumen Design Associates (Acumen), said: “Many PRMs avoid flying because of the compromises they have to make – especially when

using the on-board lavatory. During our research, we heard first-hand how those who do fly will even avoid using the lavatory altogether if possible.”



Standard ACCESS footprint. Image via Acumen Design Associates



Expanded ACCESS lavatory footprint. Image via Acumen Design Associates

ACCESS has been designed for line-fit or retrofit on Boeing 737 and Airbus A321 aircraft with input from accessible aviation consultant and founder of Rocket Girl Coaching, [Mary Doyle](#); campaigner, lobbyist and founder of Flying Disabled, [Chris Wood](#); and entrepreneur and founder of [easyTravelseat](#), Josh Wintersgill, among others.

During the research process, Doyle stated, “I believe there are four main things that can improve the onboard experience: more space, highly sanitized work surfaces, greatly improved physical supports for unassisted transfer and anti-slip flooring. And whilst lavatories serve a functional need, I believe they should look beautiful too, in keeping with excellent customer experience.”

The resulting solution created by Acumen and ST Engineering uses a moving wall to offer PRMs 40% more space than a standard lavatory module.

Clucas explained, “The standard lavatory is 33 inches wide with a 20-inch wide doorway. ACCESS fits into that footprint, so it doesn’t take up any additional cabin space, but in its expanded state is 51-inches wide, with an extra-wide entranceway of 24 inches.” This allows for passengers in a wheelchair to enter the lavatory independently, rather than having to be transferred behind a curtain. It also provides enough room for a carer or family member to enter the space, if necessary.

According to Clucas, the process of expanding or shrinking the lavatory, which is carried out by a crewmember, takes a matter of seconds using a latch on the outside wall of the lavatory and leaves enough room for people to move around in the galley.

The expanded lavatory opens into the entranceway in the aisle at the rear of the aircraft, and covers what Clucas refers to as “the assist space” – where a crewmember would stand in the event of an emergency. “In the same way business-class cabin doors have a back-up mechanism; we will need to prove there is an adequate fail-safe that can stow the lavatory away in the event of an emergency while it is in its expanded state,” he noted.

ACCESS builds on a previous product created by Acumen and ST Engineering, the ARC lavatory upgrade kit, which was [shortlisted for a Crystal Cabin Award](#) in 2019. Similar to ACCESS, the Zen-inspired Boeing 777 lavatory design featured “cutting-edge hygiene technologies – such as antimicrobial surface finishes, touchless faucet and flush mechanisms and under-floor membranes to remove odors – combined with floor-to-ceiling lighting and minimalist, curved architecture to create a striking interior,” Clucas said. ACCESS also includes features such as vertical, horizontal and fold-down grab bars and a lowered sink height.

Making IFE Installations Count

A look at in-flight entertainment installations from 2014-2026.
Source: Valour Consultancy

*Number of active IFE systems

Global Installed Base* of IFE Systems



Global Installed Base* of Seatback Systems by Geographic Region



Global Installed Base* of Wireless Systems by Geographic Region



New IFE Installations Including Linefit and Retrofit



experience

Single- and Twin-Aisle Split

Seatback: 40% single-aisle, 60% twin-aisle
Wireless: 94% single-aisle, 6% twin-aisle

Airline With Most Wireless Installations

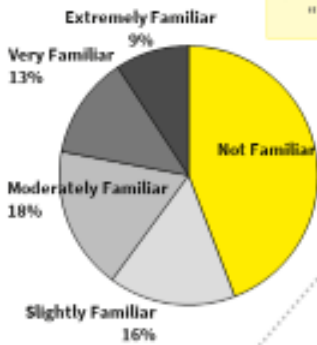
Delta Air Lines (approx. 1,200 as of the end of 2017)

Influential Events in IFE

- 2011** First wireless IFE systems emerge.
- 2014** AirFi launches first portable wireless IFE system.
- 2014** Philippine Airlines decides to install a wireless IFE system across its long-haul fleet of A340s and A330s.
- 2015** Lufthansa Technik partners with Qantas to develop a seatback mount for tablets.
- 2016** Delta Air Lines becomes first US airline to offer wireless IFE content for free.
- 2016** More than 70 Eurowings aircraft are equipped with Lufthansa Systems' BoardConnect Portable.
- 2016** American Airlines offers wireless IFE content for free.
- 2016** Emirates announces plans to install 4K screens at every seat on the one hundred fifty 777X aircraft that will enter its fleet by 2020.
- 2017** Philippine Airlines announces the return of seatback screens on eight A330s.
- 2017** American Airlines ditchs seatback screens on one hundred 737 MAXs in favor of wireless IFE.
- 2017** SkyLights' VR headsets launch on Air France's 777s for business-class passengers, and on Joon's A340s as a rental service.

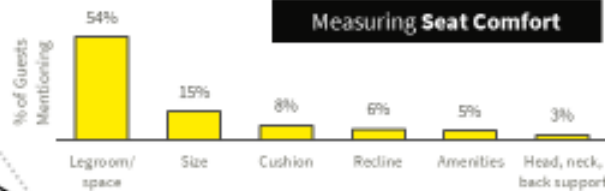


How familiar are you with the term "seat pitch"?



What do people *think* seat pitch is?

Seat pitch is commonly (and inaccurately) defined by fliers as a seat's **recline or angle**, or **distance or space** between seats.



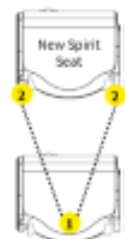
Top Elements of Seat Comfort

The Chartered Institute of Ergonomics & Human Factors has pioneered a metric that reflects passenger comfort...

Usable Legroom

The distance between:

1. The **middle point** of the seat cushion
2. The **furthest point** of the curved back on the seat in **front**



Defining Seat Pitch

Only ~5% of fliers are able to recall the true definition of **seat pitch**, the space between one point on one seat and the same point on the seat in front of it.

