

Operations

Nick Careen, IATA SVP
Operations, Safety, Security



Passenger Perspective

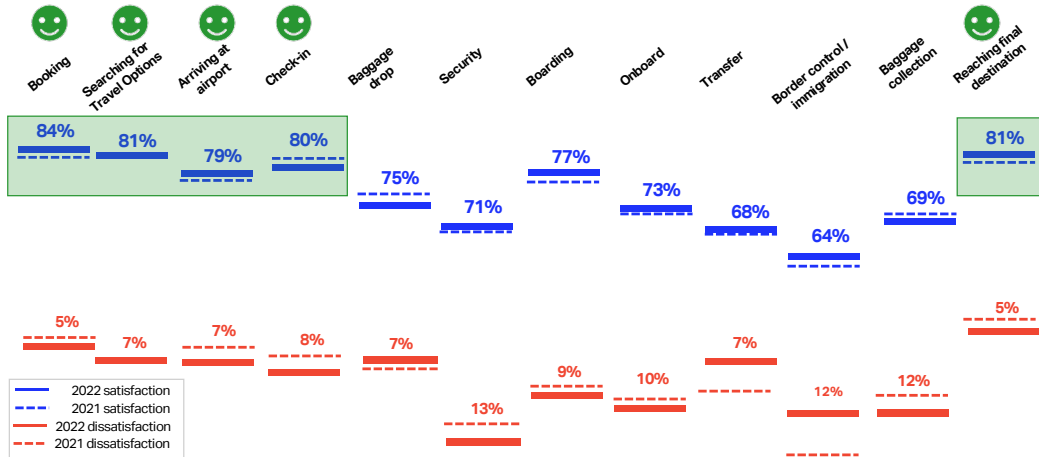
- 2022 Global Passenger Survey
- Solutions

Safety Challenges

- Ground Damage
- 5G



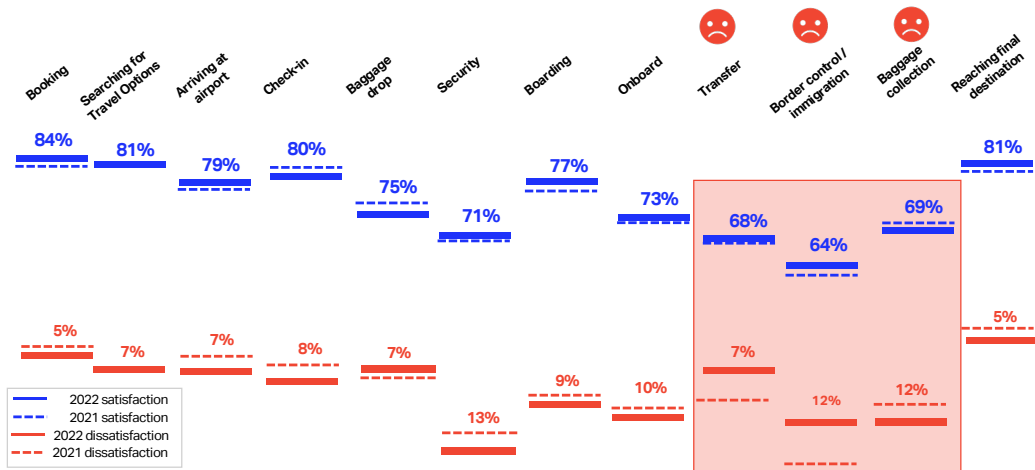
Across the travel journey, top satisfaction levels for:



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3 stress areas: transfer, immigration and baggage



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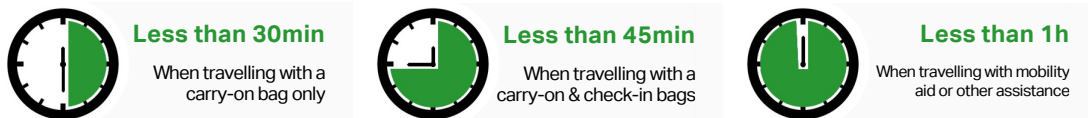


Passengers would like to get through the airport as quickly as possible

Overall time spent at the airport



Ideal time spent at the airport



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I6. Overall, how much time do you believe you usually spend at the airport?

Up to 30 minutes	5.5
30 minutes to 1 hour	21.0
1 hour to 2 hours	42.3
2 hours to 3 hours	24.6
3 hours and more	6.6

Queuing is a top improvement area

#1 improvement area for

Examples of improvement :

Security

93%

interested in a trusted program to expedite security screening

Boarding

25%

would appreciate not queuing on the jet bridge

Border Controls

20%

interested in automated solution to speed up control process

Baggage handling remains an issue



2 in 5

have had their bags mishandled



1 in 5

expressed dissatisfaction on the service provided



7

L2. ARRIVAL If your bag has been mishandled in the past 12 months, overall, how satisfied were you with the service provided to you?

Very satisfied	8.05%
Somewhat satisfied	16.37%
Neither satisfied nor dissatisfied	10.13%
Somewhat dissatisfied	4.65%
Very dissatisfied	4.81%
My bag has not been mishandled in the past 12 months	56%

(2021) L6. If your bag has been mishandled in the past 24 months, overall, how satisfied were you with the service provided to you?

Very satisfied:	16.8%
Somewhat satisfied:	26.0%
Neither satisfied nor dissatisfied:	15.8%
Somewhat dissatisfied:	20.9%
Very dissatisfied:	20.5%

T2B: 42.8%

B2B: 41.4%

T2B: top-2-boxes (Very satisfied + somewhat satisfied)

B2B: bottom-2-boxes (Somewhat dissatisfied + Very dissatisfied)

Tracking could encourage passengers to check-in bags

29%

have flown with an airline that shared baggage information

81% (+8pp vs. 2021)

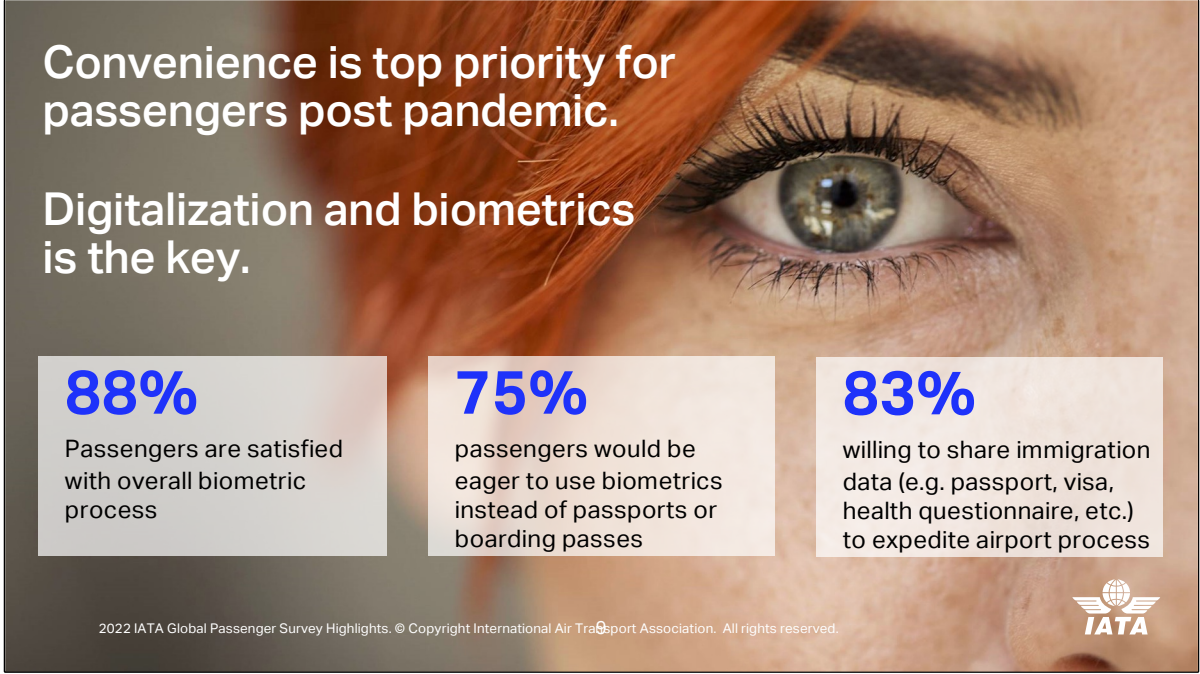
are more likely to check-in bags if it can be tracked at all times

51%

would be interested in a baggage information service

50%

have used and would be interested in using an electronic bag



Convenience is top priority for passengers post pandemic.

Digitalization and biometrics is the key.

88%

Passengers are satisfied with overall biometric process

75%

passengers would be eager to use biometrics instead of passports or boarding passes

83%

willing to share immigration data (e.g. passport, visa, health questionnaire, etc.) to expedite airport process

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- Travel during COVID-19 was complex, cumbersome and time consuming due to government-imposed travel requirements.
- Post-pandemic, passengers want improved convenience throughout their trip. Digitalization and use of biometrics to speed up the travel journey is the key.
- Passengers want to arrive at the airport ready-to-fly, get through the airport at both ends of their journey more quickly using biometrics and know where their baggage is at all times. The technology exists to support this ideal experience. But we need cooperation across the value chain and with governments to make it happen. And we need to continuously reassure passengers that the data needed to support such an experience will be safely kept.

H5. How satisfied overall were you with the biometric identification process?

Very satisfied	51.9
Somewhat satisfied	36.2
Neither satisfied nor dissatisfied	8.4
Somewhat dissatisfied	2.3
Very dissatisfied	1.2

Significant Opportunity to Improve Security Processes

- Introduction of advance screening technologies
- Regulatory framework that supports advanced technology
- Need to introduce appropriate, consistent and integrated detection solutions
- Risk-based approach to checkpoint processes
- Establish clear customer processing standards
- Dedicated global/international effort required to implement risk-based measures to manage surge volumes



Significant opportunities to improve security:

- **Introduction of advance screening technology: Many of the world's top gateway airports that have invested in CT screening technology, are seldom applying risk-based security.**
- **With risk adjusted settings, passengers need not to remove belts and shoes for example. Additionally, some 15 years after the LAGs restrictions were introduced, screening for LAGs, which is not an ICAO standard, but exists in guidance only, remains nonsensical. States continue to specifically mandate LAGs screening and often without leveraging appropriate technology.**
- Need to introduce appropriate, consistent and integrated detection solutions
- Risk-based approach to checkpoint processes
- Establish clear customer processing standards – need to develop KPIs
- Dedicated global/international effort required to implement risk-based measures to manage surge volumes

Solutions

- One ID
- Known traveler programs
- Increased automation
- Baggage:
 - Tracking
 - Electronic bag tags
 - Off site check-in



- **One ID:** is an initiative that is helping transition industry towards a day when passengers can move from curb to gate using a single biometric travel token such as a face, fingerprint or iris scan. Airlines are strongly behind the initiative. The priority now is ensuring there is regulation in place to support the vision of a paperless travel experience. One ID will not only make processes more efficient for passengers, but also allow governments to utilize valuable resources more effectively.
- We have just issued new released recommended practices on Digitalization of Admissibility which will enable travelers to digitally prove admissibility to an international destination, avoiding a stop at the check-in desk or boarding gate for document checks.
- **Known traveler programs**, increased automation, the introduction of advance screening technology and the use of biometrics are effective tools in the effort to make the airport process smoother and more efficient.
- **Known Traveler programs:** Most governments are using passenger data for immigration purposes—to secure their borders. But we should not stop there. We need to broaden the use of known traveler programs to include security, such as the US Transportation Security Administration's (TSA) Pre-check program. The TSA has shown the world that there is a better way to enhance security and make the passenger journey less stressful.
- **Increased automation:** self check in, bag drop, immigration, self-boarding with more self-service options, more choices for passengers
- **Baggage:** Tracking, Electronic bag tags off site check-in opportunities

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Safety Challenges

- Ground Damage
- 5G





Aircraft Ground Damage

Repair bill set to double to \$10 billion per year by 2035 unless preventive action is taken

- Aircraft ground damage is a significant issue that remains on the agenda of aviation executives as it compromises the safety of passengers and airport personnel. Furthermore, it has a very high financial impact on airlines' already tight budgets, as well as disrupting operations. One of the main causes of aircraft ground damage is ground support equipment (GSE) operations.
- To address this industry challenge, a study into ground damage was undertaken, focusing on damages caused by incorrect GSE operations, the associated costs, and an industry solution introduced through adoption of GSE anti-collision systems (enhanced GSE) as published in the Airport Handling Manual (AHM). The study also produced a forecast for the ground damage cost over the next 15 years and predicted a potential cost avoidance associated with a given adoption rate of enhanced GSE and disposal rate of non-enhanced GSE.
- IATA study estimates that the annual cost of ground damage could double to nearly \$10 billion annually by 2035 unless preventive action is taken.

- Most aircraft ground damage occurs when the aircraft is stationary by motorized GSE striking the fuselage of the aircraft
- The widebody aircraft ground damage rate is **10 times higher** than narrowbody aircraft, but regional jets, turboprop, and narrow-body aircraft are **30%** more prone to severe ground damage
- Belt-loaders, cargo-loaders, passenger stairs and passenger boarding bridges cause **40%** of total incidents



The study found that:

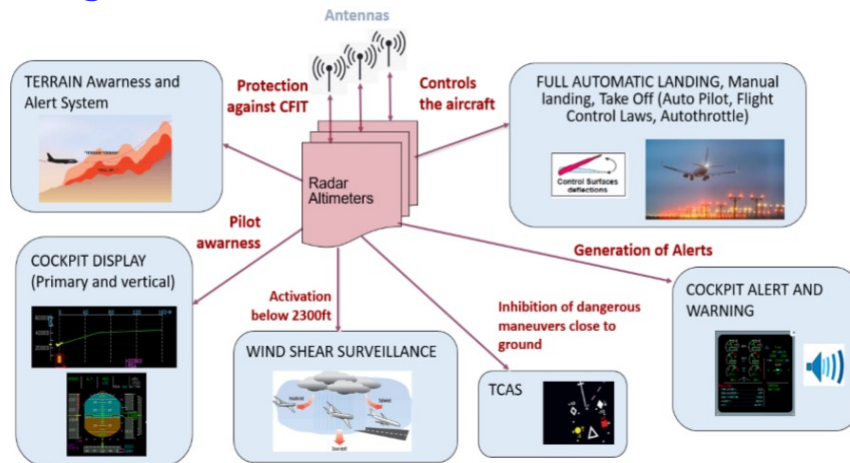
- **Most aircraft ground damage that occurs once the aircraft is stationary is caused by motorized GSE striking the fuselage of the aircraft**
- **The widebody aircraft ground damage rate is ten times higher than narrowbody aircraft, but regional jets, turboprop, and narrow-body aircraft are 30% more prone to severe ground damage**
- **Belt-loaders, cargo-loaders, passenger stairs and passenger boarding bridges (PBB), cause 40% of total incidents (Source: IATA ground damage incident data base)**
- **Transitioning 75% of the global fleet of belt-loaders, cargo-loaders, passenger stairs and PBB to Enhanced GSE, would reduce the current expected ground damage cost per turn rate by 42% (IATA estimate).**

Transition to
'Anti-collision Ground
Support Equipment'
Essential to Improve
Safety, Sustainability
and Reduce Ground
Damage Repair Cost



- Transitioning to Enhanced GSE with anti-collision technology is a no-brainer. We have proven technology that can improve safety. And with the cost of ground damage growing across the industry there is a clear business case supporting early adoption. The challenge now is to put together a roadmap so that all stakeholders are aligned on a transition plan.
- Along with reducing the cost of ground damage, the transition to Enhanced GSE will also support the industry's commitment to achieve net zero CO2 emissions by 2050 as most new equipment is electrically powered.
- Most Enhanced GSE is electrically powered, making it cleaner and more energy efficient. While the main focus of aviation's decarbonization efforts is on how we power aircraft, what happens on the ground cannot be ignored. The transition to Enhanced GSE will contribute to our industry's top priorities of safety and sustainability.

5G Potential Interference to Aircraft Radio Altimeters If Not Mitigated



- 5G will play a key role in supporting governments and policy-makers in transforming their cities into smart cities, allowing citizens and communities to realize and participate in the socio-economic benefits delivered by an advanced, data-intensive, digital economy.
- But introduction of 5G services needs to be done in consultation and coordination with industry and air safety, and spectrum regulators to ensure mitigations are in place to avoid the risk of potential interference with radio altimeters, which are crucial aircraft avionics that measure the distance between an aircraft and the ground. The radio altimeter also provides input to other critical safety, control and alerting aircraft systems.
- The Interference impact is roughly a function of:
 - 1. Power of the 5G transmitters
 - 2. Proximity of the 5G transmitters to aircraft
 - 3. Spectrum separation to radio altimeters spectrum (how close in GHz)
- Spectrum issues and regulations are typically under the authority of State spectrum regulator.
- We fully support 5G – but it needs to be deployed in a manner that allows 5G and aviation to coexist safely. This already has happened in a number of markets around the world. However, in the US market the Federal Communication Commission failed to ensure the appropriate 5G license conditions were in place before the licenses were granted to the telcos.

5G Update

United States Status

- Upcoming aircraft Radio Altimeter retrofit target dates
 - 1 January 2023: Group 2 aircraft
 - 1 July 2023: Group 3 aircraft
- FAA petition to FCC to make permanent existing voluntary mitigation measures around airports
- Mitigation measures include:
 - Exclusion zones around airports
 - Lower power levels
 - Directional changes to antennas



- **FAA is asking airlines to retrofit their aircraft in stages to be able to continue to operate into major US airports where 5G antennas are present & operating.**
- **The Group 2 aircraft include Airbus A300s, A310s, A320s, A330s and A340s as well as Boeing 737 Classics, 747-400, 757, 767**
- **Group 3 includes all other large commercial aircraft types**
- **Airlines whose aircraft operate in the US, that have not completed the required retrofit will not be able to utilize Cat 2 and Cat 3 (low visibility approach and landing) procedures at ALL major US airports after these respective deadlines have passed.**
- **We expect most airlines to meet 1 January 2023 for Group 2 aircraft. The 1 July 2023 target date for Group 3 aircraft is totally unrealistic, given the thousands of aircraft that require avionics upgrades, where in some cases there is at present no certified solution, and the supply chain is problematic.**
- **Non-US carriers are at a disadvantage vs US carriers in procuring retrofit kits because of the size of the market.**
- **At the same time as it is requiring retrofits, FAA is petitioning FCC to require 5G telco companies to reduce signal power permanently around US airports**
- **Unless this is done, FAA believes that no existing retrofit solution—including those currently being installed-- will protect against potential interference from 5G antennas operating at full power.**
- **Other countries are seeing opposition from telcos to power restrictions on future spectrum auctions– Canada and Europe are examples**

Different approaches

- 5G already introduced in several markets with little to no impact on airline operations.
- IATA continues to advocate on behalf of the industry with state telecom authorities, ICAO, ITU
- Recently Canada and Brazil have taken steps to protect RadAlts from 5G interference.



- Markets where 5G telecommunications services have been successfully rolled out with little to no impact on airline operations include Brazil, Canada, France, Thailand, the United Kingdom, Japan, South Korea, Australia and India
- IATA and other aviation stakeholders continue to work through ICAO and the ITU to safeguard aviation safety
- While some governments have provided protection there is increasing pressure in some states to allow 5G without mitigations to protect aviation