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ADAPTING TODAY
FOR A NEW TOMORROW

HOW TO
REOPEN AIRPORTS
IN A POST-CORONAVIRUS WORLD

Coronavirus is unlikely to be eradicated until a vaccine is found. AECOM's global aviation experts **Richard Gammon** and **Bijan Pashanamaei** examine ways the travel industry, and airports in particular, can restore passenger confidence by making travel safe.

The travel industry has been wiped out by the coronavirus pandemic. Passenger traffic at Hong Kong International Airport fell by 91 per cent in March year-on-year. At Frankfurt Airport, the reduction was of 97 per cent [1] and Heathrow estimates a 90 per cent fall in April [2]. Some airports have shut down altogether in response to severe restrictions on travel; others, like Heathrow, have concentrated operations into fewer runways and terminals. Cargo, rather than passengers, is now their main business.

It is relatively simple to shrink operations or shut things down. It is much harder to ramp up activity securely, particularly when the coronavirus is still in our midst. As governments around the world prepare to ease lockdown measures and reactivate their economies, airport operators must begin to consider what steps they need to take to allow a successful and safe reopening of terminals. How can they create a safe environment for thousands of airport staff and the millions of travellers who fly every day?

This is a huge and highly complex challenge, but not an insurmountable one. The overriding goal must be to restore confidence in airports as a safe working and travel environment.

97%
Passenger traffic reduction at Frankfurt Airport in March 2020.

91%
Passenger traffic reduction at Hong Kong International Airport in March 2020.

When considering the risk-reduction measures to achieve this, it might be useful to keep three objectives in mind:

/ The need to reassure passengers that they will be as safe as possible.

/ The need to ensure that measures and processes are as efficient as possible.

/ The need to build flexibility into decision-making: to accept that measures adopted today won't be the last, or may be replaced by others, as the pandemic recedes and our understanding of the illness improves.

Above all, this will be a learning process. Airport operators have never had to deal with a challenge of this magnitude, so the steps they take to make air travel safer today will be vital for building a more resilient travel industry — one that will be better prepared for future shocks. →

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Using simulation modelling, AECOM is investigating the limitations of existing terminals and wait times to get through security if travellers have to space 2m (6 ft) apart.
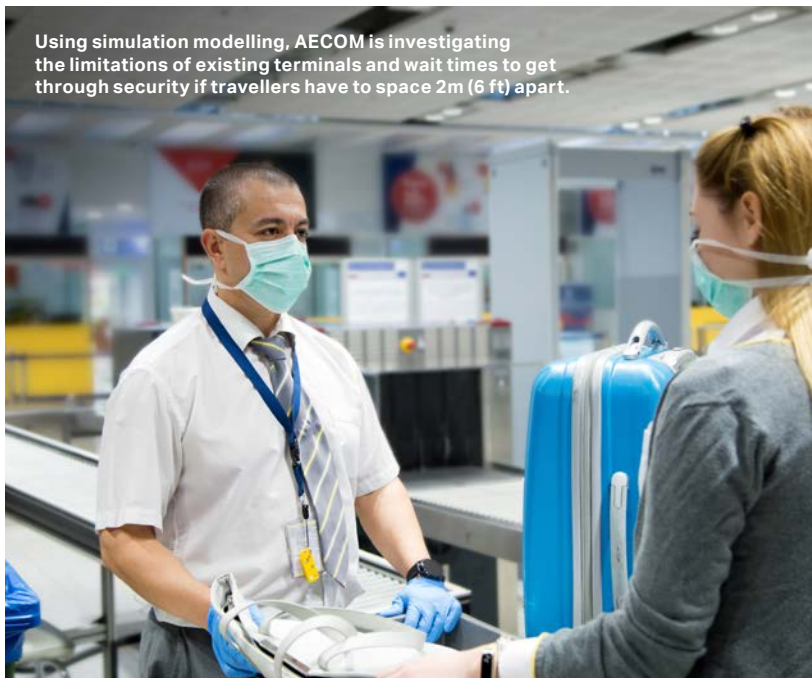
Conquering the new fear of flying

With governments discouraging all but essential travel during the pandemic, people are understandably anxious. To dispel those fears, airport operators must consider measures that will keep airport terminals clean, prioritise personal safety, reduce or eliminate unnecessary personal contact, and that allow passengers to move through the airport as quickly and safely as possible. For arriving passengers, the aim should be to get them out of the airport as quickly and as safely as possible too.

Some form of health screening for passengers prior to travel looks set to be essential. Biometric apps already exist that would allow travellers to send their health data in advance, saving time, although data privacy issues would need to be resolved. Some countries are considering issuing "health passports" or "fit for travel" documents for travellers who have developed immunity. Thermal imaging and temperature sensing technologies could also be incorporated into "screening tunnels" either inside or outside terminal buildings, effectively making them semi bio-secure zones.

It is looking probable that passengers will be required to pass a temperature scan before taking a flight. And if they are, how will body temperatures be taken, and by whom? In one international airport in the US Northeast, where AECOM is advising on reopening strategies, there is considerable debate over whether health checks need to be performed by registered nurses, medical professionals or trained airport staff. Each option has different issues but, because accuracy and reliability are important, most agree that deploying nurses might best help restore confidence in air travel.

Nevertheless, health screening for coronavirus symptoms will not detect asymptomatic carriers. As a result, and until mass testing is available, travelling will involve a certain degree of risk. The key is to progressively reduce the risk of contagion through a combination of measures until it becomes acceptable: a risk that most travellers, on balance, might be willing to take.

Density management

Mathematical models suggest that distancing will not be possible when passenger traffic recovers to 50 per cent-60 per cent of pre-coronavirus levels. Airport operators therefore face a choice: reduce capacity, or improve the management of passenger density and flows. ➔

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At another international airport in the US Northeast, AECOM is using simulation and passenger facility modelling to understand the limitations of the existing terminals and the resultant capacity and wait times to get through security if travellers have to space 2m (6 ft) apart. The results, which vary from terminal to terminal, allow the airport to understand how many passengers can be processed per hour in the space available with a modified number and configuration of lanes.

Meanwhile, airport operators and airlines could co-ordinate to flatten out and spread demand during the day in a short-term effort to reduce peaks. Airports could adopt a phased arrival approach, giving passengers a time window to arrive at their terminal. Phased boarding, with groups of passengers held in separate areas, could help reduce both congestion and density at departure gates.

Nevertheless, as travel recovers, physical distancing will be harder to achieve. On board, seating passengers apart may prove economically ruinous. As a result, measures to ensure that the risk of infection progressively diminishes the deeper one is inside the terminal take on added importance.

Will queues become longer?

Not necessarily. Inside the terminal, two factors will largely determine the safety of travel: minimising the need for physical contact and getting passengers quickly to their departure gates. The onus is on the operator to provide an efficient transit through the terminal.

Several technologies already exist that could enhance this further. They include fully automated self-service baggage drops — a one-step process where a passenger's identity is verified via biometrics; and baggage sanitization stations, using either ultraviolet or fog technologies, for both outbound and inbound bags. This will greatly improve the health and safety environment for baggage handlers. A similar approach could be used for sanitizing carry-on bags and passenger belongings. A broader use of e-passports together with more widespread application and use of biometric data could also assist.

Will coronavirus measures become a permanent feature?

Perhaps. The watchword is flexibility. Airports need to start thinking now at tactical and strategic levels about more passengers and flights. They can't wait until governments begin to lift travel restrictions or widespread international measures are agreed and implemented. Large international hub airports can in the meantime work together to drive global standards and best working practices.

The key will be to treat airport terminals like a filtering system. From outside the terminal doors to the boarding gate, a series of measures — health screens, automated check-ins, baggage sanitation, contactless security checks, among others — ought to progressively reduce the risk of exposure to the virus. If these filters are effective, to the point where operators could be highly confident that the airport environment and

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population are as sterile as possible, then perhaps the need for physical distancing would become less problematic, allowing airport operators to handle higher densities of travellers.

If and when a vaccine is found, none of this will be wasted effort. Much will have been learnt about passenger behaviour and communication, with changes that streamline the passenger journey. Air travel will be better prepared for the next pandemic as a result. WL

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