

Distributing Covid-19 vaccines - how the aviation industry prepared for its biggest logistical challenge yet

The demand for Covid-19 vaccines has seen airlines tap into years of experience to transport pharmaceutical shipments, using cutting-edge technology to distribute vaccines safely



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South Africa began the first phase of its Covid-19 vaccination rollout programme on 17 February 2021, with healthcare workers across the country now lining up to receive their shot.

While administering the vaccine to thousands of South Africans is a significant achievement in the country's fight against the pandemic, shipping these life-saving vaccines by air formed a critical step in the overall distribution process.

Months of preparing for take-off

Transporting pharmaceuticals and vaccines by air is not a new concept. The scale, speed and ultra-cold shipping and storage facilities required to deliver Covid-19 vaccines do, however, present notable challenges to the airline industry.

McKinsey estimates that vaccinating the 7.8 billion people that make up the world's population will require up to 15,000 flights to ensure global coverage for the next two years. The International Air Transportation Association (IATA) estimates that distributing the vaccine and providing a single dose to the world's population would require 8,000,747 cargo aircraft.

Airfreight has always played an essential role in distributing vaccines. While this form of transportation has been tried and tested, the overwhelming challenge lies in transporting the Covid-19 vaccines in controlled, low temperatures.

Airlines typically use containers with cooling capabilities to transport pharmaceutical products. Unfortunately, not all airlines have the necessary temperature controls to protect vaccines from being vulnerable to flight delays and other unforeseen events.

To prepare for the biggest logistical challenge the air cargo industry has ever encountered, airlines dedicated vast resources to exploring innovative distribution systems, conducting trial flights to test the process of shipping vaccines, and training staff on the ground.

Guidelines were set out for vaccine distribution by IATA, including measures governments and airlines had to implement to ensure industry preparedness. These guidelines include re-establishing air networks to ensure adequate capacity is available for vaccine distribution, temperature-controlled infrastructure to ship the vaccines, and training staff to handle time and temperature-sensitive vaccines.

Countries welcome global vaccine distribution solutions

By drawing on the many years of experience in handling and flying pharma shipments globally and building on these existing capabilities, airlines like Cathay Pacific not only successfully carried over 1,222,192 tons of cargo in 2020, despite the extraordinary circumstances but also adapted and designed an effective vaccine distribution system that is in line with IATA guidelines.

Cathay Pacific along with its subsidiaries Cathay Pacific Service Limited and Hong Kong Airport Service Limited received airport-wide recertification of IATA's CEIV Pharma accreditation at Hong Kong International Airport and is now using its network of 20 dedicated freighters and cargo bellies of passenger aircraft to distribute vaccines globally.

To ensure vaccines are shipped safely and efficiently, the airline uses a first of its kind, next-generation track-and-trace system called Ultra Track. The fully operational and functioning solution uses low-energy Bluetooth readers to monitor the temperature, GPS location, and humidity of the vaccines during flights – giving shippers and forwarders near-real-time visibility of vaccines to ensure they remain within their transportation temperature ranges.

The system works in tandem with the newly established Operations Control Centre (OCC) based in Hong Kong. Working in shifts, the OCC team monitors shipments 24/7, and can take proactive steps to intervene should any cargo start to experience temperature deviations, delays, equipment malfunction or damage on the ground.

These safety measures result from months of preparation and form a vital part of effectively transporting vaccine shipments, like Cathay Pacific's first vaccine shipment to Hong Kong as well as humanitarian bodies such as UNICEF's introducing initiatives to work with leading airlines to deliver vaccines around the world.

Vaccine shipments will help the aviation industry recover

While the pandemic has led to the largest decline in passenger travel in aviation history, the opportunity, and ability, to carry vaccines in passenger aircraft will support the commercial case for renewed passenger operations.

Airlines' ability to safely and efficiently transport vaccines across the world is a turning point for the industry and ensures millions of people receive their lifesaving shot.