
THE BIG TWIN
WWW.BIGTWINFREIGHTER.COM
MORE VOLUME, LESS COST,
GREAT RANGE & COMMONALITY
AERCAP Cargo
IAI
777-300ERSF
BIG TWIN


THE BIG TWIN
WWW.BIGTWINFREIGHTER.COM
MORE VOLUME, LESS COST,
GREAT RANGE & COMMONALITY
AERCAP
Cargo
IAI
777-300ERSF
BIG TWIN

aviationbusinessnews.com
VOLUME 21 • ISSUE 1 • FEBRUARY/MARCH 2022

Airline CARGO Management

Connecting the air freight community

FREIGHT FORWARDING OUTLOOK

What are the key trends for the year ahead?

ONLINE REVOLUTION
How e-commerce is reshaping the air cargo business

OPEN & SHUT CASE
The vital importance of cargo door modifications

AIR CARGO IN 2022
Facing the future with renewed optimism

Editor's Letter

In the 2007 Pixar movie *Ratatouille*, Remy the rat reflects that "the only thing predictable about life is its unpredictability". That wisdom is gained after the rodent protagonist goes on an unlikely journey to become a top chef in Paris. But it feels like it might also have been a lesson learned for anyone involved in the air cargo industry over the past couple of years.

That could certainly be the case for freight forwarding companies, who have faced immense pressure over capacity challenges and have had to adapt to changing market conditions. Our cover story is a freight forwarding outlook (p20), and we discovered that companies are facing the future with confidence having navigated the Covid-19 crisis and positioned themselves to make the most of new trends and technologies.

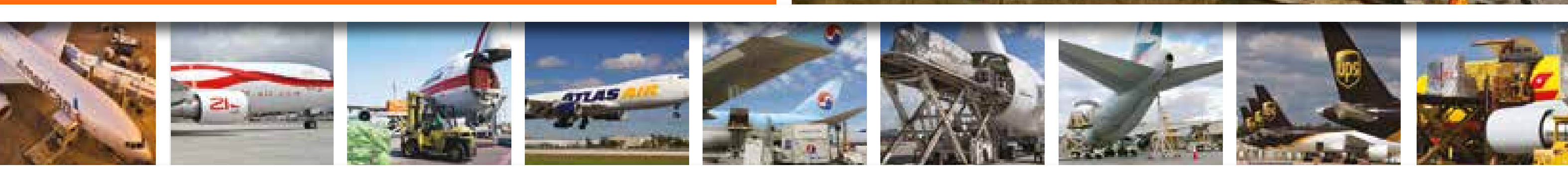
One of these prevailing trends is the rise of e-commerce, and many freight forwarders are investing in their capabilities in this area. They must also meet the ever-increasing consumer demand for shorter delivery times. E-commerce is a topic that affects everyone in air cargo, and in a separate feature (p26), we investigate how it is reshaping the business as a whole.

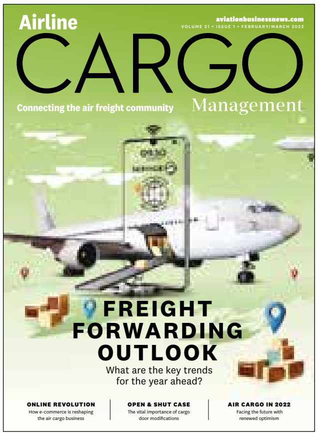
We also attempt to look into the future in areas besides freight forwarding in this issue. TIACA director general Glyn Hughes provides an overview of the topics impacting the air cargo industry in 2022 in the association's regular column (p18), and Peli BioThermal's Adam Tetz focuses on the cold chain sector in his contribution to 'Industry voices' (p16).

In *Ratatouille*, Remy is only able to achieve his dream of becoming a chef by working with Alfredo Linguini, a lowly and largely ignored restaurant employee. I think another lesson from the Covid crisis has been that closer collaboration between companies can yield better results for all parties. Each member of the supply chain has a crucial role to play in any shipment. Hopefully the momentum gained in this area during the Covid crisis will be put to good use in meeting industry-wide sustainability goals, which will certainly require different stakeholders to work closely together.

Despite our best efforts in this issue to provide a guide to the future, it will inevitably remain unpredictable, as Remy says. Strange things can and do occur – such as global pandemics (and rats becoming chefs) – but with fingers crossed we can now look ahead to the rest of 2022 with renewed optimism. There will be some interesting and rewarding times ahead.

Jason Holland
EDITOR
Jason.Holland@realresponsemedia.com





Cover image design: Phil Couzens

EDITORIAL TEAM

EDITOR
Jason Holland
jason.holland@realresponsemedia.com

STAFF WRITER
Luke Chamberlain
luke.chamberlain@realresponsemedia.com

CONTRIBUTORS
Paul E Eden
Kevin Rozario

ART DIRECTOR
Phil Couzens

SUB-EDITOR
Heather Ford

PRODUCTION MANAGER
Barnaby Moore
barnaby.moore@realresponsemedia.com

COMMERCIAL DIRECTOR
Anthony Wilkinson
anthony.wilkinson@realresponsemedia.com

COMMERCIAL MANAGER
Victoria Keeble
victoria.keeble@realresponsemedia.com

CEO
Chris Pitchford
chris.pitchford@realresponsemedia.com

For subscriptions & enquiries:
Barnaby Moore
barnaby.moore@realresponsemedia.com
All enquiries
+44 (0) 20 8444 2554

Printed in the United Kingdom by Micropress.

Airline CARGO Management

Published by
Real. RESPONSE MEDIA
Unit 4D, Cally Yard,
445 Caledonian Road,
London, N7 9BG

Contents

FEBRUARY/MARCH 2022

6


20


26



42

REGULARS

6 Business briefing
A round-up of news highlights from the air cargo sector

12 Trend watch
New solutions, certifications and aircraft are driving innovation

14 Industry voices
Air cargo leaders and subject matter experts share their views – featuring Menzies Aviation's Rory Fidler and Peli BioThermal's Adam Tetz

18 The TIACA column
Familiar themes might dominate the air cargo industry in 2022, while digitalisation and sustainability are expected to play an increased role

FEATURES

20 Freight forwarding outlook 2022
A continued capacity crunch, an increased focus on digitalisation, and the possibility of mergers and acquisitions are among the key trends for the rest of the year

26 Online revolution
How e-commerce is reshaping the air cargo business and how companies can meet demand for ever shorter delivery times

32 Open and shut case
Investigating the vital importance of cargo door modifications – and why reliability is everything

38 Keeping safe
How is global air cargo security ensured and what are the major issues facing the industry?

42 Green sky
Envirotainer has introduced a new container solution with a smaller CO_2 footprint while also investing in sustainable aviation fuel

BUSINESS BRIEFING

DATA

A stellar year for air cargo

Full-year air cargo performance figures from the International Airport Association (IATA) showed the second-biggest year-on-year improvement in demand for air cargo since 2010.

In 2021, demand (measured in cargo tonne-kilometres) increased by 6.9 per cent compared to pre-Covid levels and 18.7 per cent compared to 2020 – outpacing the 9.8 per cent rise in the global goods trade by 8.9 percentage points, the association said.

"Air cargo had a stellar year in 2021. For many airlines, it provided a vital source of revenue as passenger demand remained in the doldrums due to Covid-19 travel restrictions," said IATA's director general Willie Walsh.

"Growth opportunities, however, were lost due to the pressures of labour shortages and constraints across the logistics system. Overall, economic conditions do point towards a strong 2022."

Capacity in 2021 (measured in available cargo tonne-kilometres) remained 10.9 per cent below pre-Covid levels, with bottlenecks remaining at key hubs.

Walsh added: "Some relief on supply chain constraints occurred naturally in December as volumes decreased after peak shipping activity ended in advance of the Christmas holiday.

"This freed capacity to accommodate front-loading of some Lunar New Year shipments to avoid potential disruptions to flight schedules during the Winter Olympic games.

STRONG DECEMBER DEMAND ADDED TO A STELLAR YEAR FOR AIR CARGO IN 2021, IATA SAID

+18.7%

Y-o-y increase compared to 2020

"And overall December cargo performance was assisted by additional belly-hold capacity as airlines accommodated an expected year-end boost to travel. As shortages of labour and storage capacity remain, governments must keep a sharp focus on supply chain constraints to protect the economic recovery."

IATA outlined the following economic conditions for supporting air cargo growth:

- Global goods trade rose 7.7 per cent in November, compared to pre-crisis levels. Global industrial production was up 4 per cent over the same period.
- The inventory-to-sales ratio remains low. This is positive for air cargo as manufacturers turn to air cargo to rapidly meet demand.
- The cost-competitiveness of air cargo relative to that of sea-container shipping remains favourable.
- The recent surge in Covid-19 cases in many advanced economies has created strong demand for PPE shipments, which are usually carried by air.

60

60 million roses were flown out of Ecuador, Colombia and Kenya onboard Qatar Airways Cargo special charters and flights in the run-up to Valentine's Day

15

Cargo volume at Brussels Airport grew 30 per cent in 2021 compared to 2022 – its best performance in 15 years with 843,140 tonnes of freight transported through the airport

LOGISTICS

UPS expands healthcare capabilities

UPS Healthcare will open its first dedicated healthcare logistics facility in Giessen, Germany, in early 2023.

The 24,680sq m facility will house more than 30,000 pallet positions capable of storing a range of healthcare products between 2-8°C, 15-25°C, and up to -20°C.

The facility will add to UPS' existing 1 million sq m of dedicated healthcare warehousing across 134 GDP/GMP compliant facilities in 30 countries around the world.

"This new facility will serve some of the fastest-growing healthcare markets in the world," said UPS Healthcare's president Wes Wheeler.

"By opening our first facility in Germany, we're investing in our customers, whose latest pharmaceutical, biotech and medical device products require an end-to-end range of quality specialist storage and handling service."

The facility's proximity to UPS' European air hub at Cologne Bonn Airport and UPS Healthcare's European hub in Roermond will provide its customers with shorter domestic and global transit times – and will offer next-day delivery to 80 per cent of Europe, the company said.

"THIS NEW FACILITY WILL SERVE THE FASTEST-GROWING HEALTHCARE MARKETS IN THE WORLD"

in brief

- CMA CGM Group is to purchase four A350F freighter aircraft. The firm order brings the shipping and logistics company's total Airbus fleet to nine aircraft, including four A330-200Fs and one A330-200 to be converted into a freighter. The A350F features a large main deck cargo door and a fuselage length optimised for cargo operations, Airbus said. More than 70 per cent of the airframe is made of advanced materials resulting in a 30t lighter take-off weight, the manufacturer added.

- China Airlines has ordered four 777 Freighters, with the order valued at US$1.4 billion at list prices. The airline hopes the new aircraft will enable it to "capture new market opportunities as global air cargo demand continues to grow". "The 777 Freighter has played a critical role in our efforts to maintain profitability during the pandemic, and these additional airplanes will be an integral part of our long-term growth strategy," said China Airlines' chairman Hsieh Su-Chien, noting their operational efficiency and reliability. "Our fleet modernisation programme will enable us to deliver added value to our customers, especially as the global supply chain continues to evolve."

- Cargo airline Atlas Air Worldwide has purchased four 777 Freighters. The new aircraft will join the airline's existing fleet of 14 777s and 49 747 Freighters. "We are excited to expand our fleet and service offering for our existing and prospective customers with these four new 777s," said Atlas Air Worldwide's president and CEO John W. Dietrich.

FREIGHTER CONVERSIONS

HAECO Xiaman to provide P2F work for 321 Precision Conversions

HAECO Xiamen has signed an agreement with 321 Precision Conversions to provide passenger-to-freighter conversions for its A321-200PCF programme.

The conversion work will be performed at HAECO Xiamen's facility, and was due to begin in February 2022.

321 Precision Conversions' president Gary Warner said: "Since 2009, HAECO Xiamen has been a great partner on our 757-200PCF programme demonstrating high quality and efficiency.

"Expanding the A321-200PCF conversions into HAECO Xiamen was an easy decision as we continue to expand our conversion kit capacity to meet high customer demand. We look forward to a long and successful partnership."

HAECO Xiamen's chief operating officer Jacqueline Jian commented: "The partnership with Precision started in 2009 and thanks to Precision for their trust, we are delighted to see our cargo conversion partnership extended from Boeing 757 to Airbus 321.

"We look forward to providing a wider service to 321 Precision Conversions with our comprehensive capability including parts manufacturing."

HAECO Americas meanwhile commenced provision of its conversion service for 321 Precision Conversions at HAECO's Lake City, Florida facility in the USA in January.

"WE CONTINUE TO EXPAND OUR CONVERSION KIT CAPACITY TO MEET HIGH CUSTOMER DEMAND"

FREIGHTER CONVERSIONS

EFW re-delivers first A330P2F to Altavair

Leasing company Altavair took delivery of Elbe Flugzeugwerke's (EFW) first Airbus A330 passenger-to-freighter (P2F) converted aircraft in January. The re-delivery is the first of a series of freighter conversions that EFW will carry out for the company, which has ordered several A330P2Fs, comprising both the A330-200P2F and A330-300P2F.

"This investment reflects our belief that the A330 will be the premier freighter going forward in this segment," said Altavair UK's president and managing director Paul Newrick of the orders.

4,200

EFW's first re-delivery to Altavair is the A330-200Ps2F variant, which offers a gross payload of up to 61 tons and a range of up to 4,200 nautical miles.

With the new converted aircraft, Altavair customer MasAir Cargo will build up a new Airbus freighter fleet, becoming the first airline in the Americas to operate the Airbus widebody P2F, and the first in the world to operate the two Airbus A330P2F variants.

"We are delighted to re-deliver our first converted freighter of 2022 to new customer, Altavair, for operation by MasAir Cargo," said EFW's CEO Andreas Spearl.

"The A330P2F programme is considered popular, delivering best-in-class capability and fuel efficiency. We are confident it will serve Altavair and MasAir Cargo well."

274

AirBridgeCargo Airlines saw a 274 per cent increase in digital bookings in 2021 compared to 2020

2

Low-cost British international airline flypop brought its second cargo aircraft into service in January

1.66

Total cargo volume at Amsterdam Airport Schiphol grew by 15.7 per cent in 2021 compared to 2020 – up to 1.66 million tonnes

CARGO CONTAINERS

A special digital report on container quality

Air cargo containers are vital to the successful transport of pharmaceutical products. Any let up in quality or reliability has implications for every stakeholder in the distribution chain.

Airline Cargo Management has collaborated with air cargo solutions specialist CSafe Global to produce a timely guide to the process of transporting time- and temperature-sensitive pharmaceutical products with respect to container quality, highlighting the challenges and pitfalls and how to overcome them.

This special digital report – which has been designed to be visually striking and easy to read, while featuring videos, illustrations and interviews – also focuses on the technologies that go into providing end-to-end visibility of the shipments in these containers; preventative maintenance techniques; and the ongoing training that ensure best practices are adhered to.

VISIT *rrm.maglr.com/csafe to view the special digital report on cargo container quality*

SOFTWARE

Ethiopian Cargo launches new booking system

Africa's largest cargo service provider Ethiopian Cargo and Logistics Services has launched a new air cargo booking platform.

The new online system enables the airline's customers to check flight schedules, space availability, loadability of freight, and make real-time bookings.

"We are committed to start walking the long walk of taking out paper from the entire air cargo process by digitalising the logistics value chain," said Ethiopian Airlines' group CEO Tewolde GebreMariam of the new initiative.

"Taking out paper from our logistics value chain is not only convenient and hassle free for customers, but it delivers more efficient operational excellence and achieves long-term sustainability goals. Our online booking platform will be crucial in empowering direct cargo customers and forwarders with reliable access to our cargo capacity inventory."

"TAKING OUT PAPER FROM OUR LOGISTICS VALUE CHAIN DELIVERS MORE EFFICIENT OPERATIONAL EXCELLENCE"

CARGO CONTAINERS

Skycooler awards 10-year ULD repair contract to Unilode

Temperature-controlled airline container specialist Skycooler has awarded a 10-year repair maintenance and digitalisation contract to Unilode.

Under the terms of the agreement, Skycooler's temperature-controlled containers will be repaired at Unilode's EASA and FAA-certified repair stations, initially in the UK.

Further locations will be added to meet the needs of Skycooler's growing network, said Unilode, who will also equip the containers with digital tags for greater supply chain visibility.

Skycooler's chief executive officer Jorgen Veslov said: "Long-term planning capabilities, reliability and availability of containers are key success factors in our business as our temperature-controlled container leasing operations are integrated within our customers' supply chain management. Our repair agreement with Unilode will allow us to guarantee quick turnaround times of three to seven business days to our customers. Additionally, Unilode's digital container tags, reader network and customer dashboard will provide Skycooler with real-time fleet visibility. Unilode will ensure consistent repair quality, compliance and transparency, and we look forward to our long-term partnership."

Unilode's chief commercial officer and managing director Marc Groenewegen added: "Our new 10-year agreement includes both our repair and digital services as Skycooler has recognised the benefits that Unilode's digital ULD tags with geolocation and various sensor capabilities can provide for its temperature-controlled container fleet.

"This reflects and confirms the aviation market's acceptance of Unilode's digital technology and proves the versatility of our digital solutions that can be used for standard and special ULDs, such as temperature-controlled containers.

"We look forward to facilitating Skycooler's growth with Unilode's repair and digital solutions."

10

↑

Temperature-controlled airline container specialist Skycooler has awarded a 10-year repair maintenance and digitalisation contract to Unilode

TERMINALS

New Schiphol terminal to put dnata "at the forefront of modern air cargo operations"

Lödige Industries has been awarded a contract to supply dnata's new cargo terminal at Amsterdam Airport Schiphol. The move to a new terminal building was necessitated by construction measures at Schiphol to improve airport infrastructure, dnata said. The building is scheduled to become operational in 2024 and has been developed by Schiphol Commercial Real Estate and designed by the architectural firm DP6.

The building will be equipped by Lödige Industries with a fully automated system to "secure future growth", dnata said.

Two separate automatic storage and retrieval systems (ASRS) with twelve stacker cranes are used in the terminal for import and export, and 2,500 pallets can be stored. An additional storage for up to 700 ULDs is served by four elevating transport vehicles (ETVs). To ensure flexible and scalable ULD transport within the terminal, dnata said it would also deploy seven intelligent automated guided vehicles (AGV) developed by Lödige Industries, which will be used for the first time on a large scale.

Smart gates will be another feature of the cargo terminal. These automatically record the volume and weight of all incoming shipments through 3D scans and significantly speed up handling.

Trend **watch.**

New solutions, certifications and aircraft are driving innovation in the air cargo industry

01

A hat-trick of certifications

Etihad Cargo has become the first airline in the Middle East and third globally to hold the International Air Transport Association's trilogy of Centre of Excellence of Independent Validators (CEIV) Live Animals, Fresh, and Pharma certifications. The certifications will improve animal welfare and safety through quality and risk management, and enhance standardisation and professionalism in the handling and transportation of live animals in a multimodal environment, the carrier said.

02

Digital evolution

Menzies Aviation has appointed Filip Nekvinda as senior vice president of digital & innovation, a newly-created role. Nekvinda most recently served at IKEA and Procter & Gamble, where he led digital transformation projects. He will now lead Menzies' digital strategy and drive forward its digital capabilities. Key focus areas include employee engagement, operational efficiency and helping Menzies and its customers achieve carbon reduction targets by digitising processes.

"Collaborating with customers to achieve digital transformation goals is essential"

03

Ensuring high standards

Lufthansa Cargo has been re-certified by the independent auditing company SGS in accordance with the Cargo iQ Standards for quality management along the air freight transport chain. The comprehensive audit included an extensive documentary pre-audit as well as a detailed examination of the implementation of the described quality assurance procedures in all processes, Lufthansa Cargo said.

In a three-year cycle, this ensures that Cargo iQ members implement the high standards and specifications of the International Air Transport Association community of interest. The last audit of Lufthansa Cargo took place in 2017, and preparations for this year's audit had already been underway since last year.

04

EXPANDING BOUNDARIES

Volga-Dnepr has successfully transported 16 tonnes of special liquid medical oxygen equipment onboard an Il-76TD-90VD aircraft to a construction site for a future plant built by Medical Oxygen.

"The experience and expertise of our team enables us to expand our boundaries from air freight to more complex integrated logistics solutions," the company stated.

05

Pharma endorsement

Menzies Aviation has received certification from the International Air Transport Association (IATA) to handle time- and temperature-sensitive pharma products at London Heathrow and Budapest Ferenc Liszt International airports.

The Centre of Excellence of Independent Validators for Pharmaceutical Logistics accreditation now formally endorses Menzies' ability to handle high-value, time sensitive and temperature-controlled pharmaceuticals transported into and out of the two airports. The company expects to see an increase in pharma volumes through its 10,000sq m warehouse facility at Heathrow.

"The accreditations show our commitment to enhancing and adapting operations"

08

New heights

Qatar Airways has ordered up to 50 of Boeing's new 777-8 freighter aircraft – which represents the largest freighter commitment in Boeing's history by value. The Middle Eastern airline will be the launch customer for the new aircraft, having placed a firm order for 34 jets with options for 16 more.

Boeing said the 777-8 freighter will have a payload capacity "nearly identical" to the 747-400 freighter, but with a 25 per cent improvement in fuel efficiency, emissions and operating costs, enabling "a more sustainable and profitable business for operators".

06

Dangerous goods

IAG Cargo has adopted the International Air Transport Association's (IATA) newly-developed digital system for automating the acceptance of dangerous goods shipments. 'DG AutoCheck' facilitates the acceptance of dangerous goods by checking all the regulations, rules and guidance contained in the IATA DG regulations and converting them into an automated validation system. IAG Cargo said it would be able to check compliance more quickly from its Heathrow hub.

07

Sustainable flying

DHL Global Forwarding has signed a purchase agreement with Air France KLM Martinair Cargo (AFKLMP) for 33 million litres of sustainable aviation fuel (SAF). The three-year cooperation is expected to save DHL Global Forwarding 80,000 tons of carbon dioxide emissions by blending SAF with regular aviation fuel for AFKLMP flights. The initiative forms part of Deutsche Post DHL Group's sustainability roadmap, which aims to spend €7 billion on green technologies by 2030 and reduce all logistics-related emissions to zero by 2050. "This deal is a great opportunity to accelerate our joint sustainability efforts," the companies said.

09

LOGICAL STEP

Amelia International has leased an ATR72-212F (MSN 461) from TrueNoord – the Slovenian airline's first cargo aircraft – in a four-year operating lease agreement. MSN 461 will be based in Ljubljana, Slovenia. Amelia International is a specialist in ad-hoc charter and regular regional flights. The company's managing director Matija Krajnc said developing cargo capabilities was a "logical step".

10

New deal

UPS has entered into a multi-year agreement with Boeing for the purchase of 19 767 Freighters. Based on the 767-300ER passenger jet, the 767 Freighter can hold up to 52.4 tons of revenue cargo with intercontinental range.

UPS was the launch customer for the 767 Freighter in 1995, and since then has ordered 91 of the aircraft. Commenting on the agreement, UPS' US operations president Nando Cesarone said: "Our plan to purchase 19 aircraft and take delivery between 2023 and 2025 aligns with the strategy and capital expenditure forecast shared during our June 2021 Investor and Analyst Day. It also supports our sustainability efforts by making our fleet more efficient and improving reliability."

"These new jets will enable UPS to meet near-term and long-term cargo demand"

USHERING IN A NEW ERA OF CARGO HANDLING

Menzies Aviation's vice president cargo technology **Rory Fidler** says unlocking the potential of technology is the key to dealing with high volumes of cargo

"Technology can offer solutions to help deal with the high volumes the air cargo industry is facing, from the digitisation of paper trails to warehouse automation"

Rory Fidler is vice president cargo technology at Menzies Aviation
menziesaviation.com

The air cargo sector is currently running at peak capacity, and despite the continued delay in belly capacity coming online, these levels of cargo won't be reducing anytime soon. Technology can offer solutions to help deal with the high volumes the industry is facing, from the digitisation of paper trails to warehouse automation.

Whilst the sector is beginning to explore these tools, there is a huge amount of untapped potential when it comes to cargo technology, which can support the industry's increased need for speed, efficiency and effectiveness. The four most promising areas are artificial intelligence, robotics, remote process automation, and centralised data centres.

A more intelligent way of working

Artificial intelligence (AI) is currently in the spotlight, with the cargo sector waking up to its potential use cases. Widely deployed across other industries, AI is not yet available at a production level for cargo applications, despite its vast potential for boosting efficiencies and automating cumbersome processes.

However, there is some progress being made. For example, key data and digital enhancement solutions are being utilised by companies such as Speedcargo. The logistics technology specialist is making big strides in Singapore, developing a solution that uses AI to accurately measure dimensions. This in turn will increase the total pallet utilisation during build processes as all available space will be utilised efficiently. Looking ahead, the use of intelligent cameras to monitor screening points, employee ingress points and more generally warehouses will be a gamechanger.

160

Manual checks at all stages continue to be the norm, with each freighter requiring around 160 pieces of paper to be printed, scanned, stamped and signed

Robots: the new warehouse assistants

Similarly, robotics technology already exists and is proving highly effective in other industries, such as the automotive industry where robots have been building cars for decades. Specific areas of the cargo handling process would benefit greatly from the introduction of robotics, such as the handling of heavy loads, locating shipments, carrying out bond checks, and identifying spare volume in racking areas. The use of these robots not

1

1. Technology can support the industry's increased need for speed and efficiency
2. Menzies utilises innovation spaces which provide a testbed for new initiatives

Utilising modern technology such as robots will relieve some of the pressure on staff

only improves efficiency but will also enable improved inventory management, reducing costs. At Menzies, we're excited to be trialling a robot, provided by BotsAndUs, at London Heathrow. Although robots are currently in play, and are being developed to be more specialised, they are yet to be widely deployed across the industry.

Online migration

Paperwork and manual processes remain one of the largest obstacles in the industry, not only to efficiency, but sustainable practices due to vast paper use. The introduction of remote process automation will ultimately allow customer invoices to be checked back through the trail all the way to the source

2

of booking the AWB. However, manual checks at all stages continue to be the norm, with each freighter requiring around 160 pieces of paper to be printed, scanned, stamped and signed. Remote process implementation would not only enable digitisation of paper trails but the sharing of data – allowing separate stakeholders to review the data and access the system at any time. Implementing remote process automation should be done as a matter of urgency, and companies are increasingly offering solutions.

Taking control

Centralised control centres have the potential to revolutionise the cargo industry. Currently every cargo booking has a structured transport plan, with a message generated at each stage of the process to confirm its completion. By implementing a centralised control centre, it is possible to share business intelligence data among relevant stakeholders to ensure that if disruption occurs, only affected shipments are delayed with those specific sections of the plan monitored.

This will not only increase the ease of cargo processing and handling, but offer significant time saving, reduce delays and improve customer satisfaction. Control centres can also track regulatory compliance, system compliance and cargo IQ. Once fully implemented these control centres can also produce data for activity analysis to inform any necessary operational changes.

Stepping into the future

The combined implementation of this technology will enhance operational efficiency and also improve the working conditions within cargo warehouses. Utilising technology such as robots or a centralised control centre will relieve some of the pressure on staff, as it will enable employees to focus on other priorities and higher value tasks.

Moreover, it makes the industry more attractive to younger generations who are used to dealing with technology in their day to day lives.

Innovation spaces, which foster creativity and create a fertile environment for the development of new technologies, is a concept that Menzies is working on to ensure it is at the forefront of our industry. By providing a testbed for new initiatives in a single warehouse, it ensures that processes can be refined, so that they will be running optimally when rolled out across multiple bases.

With the proven benefits of these technological advancements, the main barrier to adoption is mindset. There is currently a sector-wide hesitancy to change and implement newer solutions. In order to see real development in air cargo technology, new solutions must be seen as a support to businesses and not be forced on users, which requires close partnership between airports, suppliers and handlers.

2022 COLD CHAIN PREDICTIONS

With the cold chain industry experiencing recent growth, Peli BioThermal's director of worldwide marketing **Adam Tetz** looks at what the rest of 2022 might hold in store

"The pandemic's influence remains, which creates opportunities to innovate and serve pharmaceutical customers by delivering medicine in new ways."

Adam Tetz is director of worldwide marketing at Peli BioThermal
pelibiothermal.com

The world eagerly anticipated 2021. Covid-19 vaccines delivered hope for normalcy and excitement grew over convenience-related changes to healthcare, work and more. But the pandemic had other plans. New Covid-19 variants emerged, supply chain issues deepened and much of the day-to-day still looks different than pre-pandemic.

The cold chain industry experienced rapid growth in 2020 and continues to experience both growth and change for the foreseeable future. The pandemic's influence remains, which creates opportunities to innovate and better serve pharmaceutical and healthcare customers delivering medicine in new ways. This sets the stage for a few of our predictions.

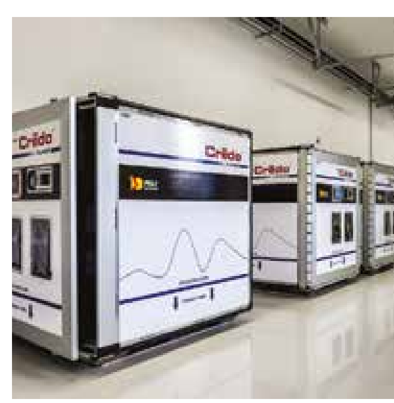
While Covid-19's influence persists, we also see renewed interest in sustainability and the evolving impact of Brexit's export regulations in the UK. These will also shape how the pharmaceutical and cold chain industries operate.

Outsourcing the cold chain

Last year, we anticipated that more pharmaceutical companies would outsource capabilities to contract manufacturing organisations (CMOs) and contract development and manufacturing organisations (CDMOs). Pharmaceutical companies already engage these organisations in manufacturing and development of therapies, but adding additional services allows pharmaceutical companies to focus valuable time and resources on areas where they have the most expertise.

We did see a shift last year to CMOs and CDMOs adding additional services, like cold chain logistics. We expect to see outsourcing grow again this year. Offering end-to-end expertise will help reduce additional supply chain complexities by standardising more of the supply chain during a time when raw materials are scarce and transportation is unpredictable, necessitating dedicated and seasoned professional resources.

Additionally, we expect companies not yet ready to fully outsource their supply chains to increase their use of services that make cold chain



1

3

1. Crēdo Cargo bulk shippers ensure consistent temperature stability in excess of 120 hours
2. Pharmaceutical companies require vendors to demonstrate the sustainability credentials of temperature-controlled packaging
3. The cold chain industry continues to experience growth and change

Each new year brings hope and anticipation of new challenges – 2022 will be no different

operations easier and eliminate the challenges associated with unforeseen circumstances. These include services like offsite conditioning of coolants or onsite conditioning with coolants inventoried to their unique needs.

Brexit runs smoothly

Brexit, or the UK's exit from the European Union (EU), officially began on January 31, 2020. However, nothing changed until a new trade deal was reached nearly one year later. Implemented in January 2021, the new deal outlined how the UK and EU would live, work and trade together. The most significant concern: new paperwork for export businesses. As new trade rules began, export businesses did experience significant issues with increased paperwork. As a result, a large number of shipments were delayed, held at customs points or cancelled altogether. The impact of Brexit was further affected by the global shortage of shipping containers and lack of drivers to transport goods.

Over time, exporting companies, shipping agents and logistics companies began to understand the nuances of paperwork required to enable shipments to the EU to take place without issue. This was a learning process for companies that hadn't dealt with the complexities of customs clearance for decades. To enable this, companies recruited for new staff, which further slowed down the processes required.

It is still too early to draw concrete conclusions about the overall impact of Brexit on trade with the EU. The Office of National Statistics noted survey data suggesting businesses' trading activities were being held back by Brexit frictions, such as extra paperwork and higher transportation costs. However, the UK economy showed improvement during the course of the year. Shipments to the EU began to return to pre-Brexit levels as companies became more confident with the complexities of the new rules. Further growth is expected into 2022, and with the general improvement with trading conditions as Covid-19 restrictions are relaxed, we can expect a surge in UK-EU trade during the course of this year.

2

Sustainability initiatives

Only a few short years ago, pharmaceutical manufacturers viewed supplier sustainability initiatives as a nice-to-have, but not a deciding factor in their decision to do business together. That shifted in 2020 with companies focusing on how they could impact the United Nations' Sustainability Development Goals, while building plans to execute and measure their efforts.

What began as internal initiatives quickly turned to a focus on how vendor and supplier sustainability initiatives impact a company's sustainability goals. Pharmaceutical companies soon required vendors like Peli BioThermal to demonstrate that temperature-controlled packaging and modes of transportation minimise negative effects on the environment. Additionally, vendors were also asked to provide tools that help pharmaceutical manufacturers measure their actual environmental impact so they can monitor and demonstrate reductions in carbon footprint and waste. We expect to see this trend continue in 2022. We also expect pharmaceutical companies to dig deeper into the supply chain. Vendors and suppliers will be asked to also look at their supply chains and begin monitoring how their own vendors and suppliers contribute to their environmental impact.

Each year brings hope and anticipation of new challenges, and 2022 will be no different. Though Covid-19 continues to influence supply chains, companies are learning to operate in an unpredictable world. Overall, we anticipate this year will bring more stability and renewed focus on pre-Covid-19 priorities.

Air cargo outlook 2022

Familiar themes might dominate the air cargo industry in 2022, thinks TIACA director general ***Glyn Hughes***, with digitalisation and sustainability also playing an increased role

As 2021 drew to a close we could look back on 22 months of a Covid impacted world. Family and social interactions, business operations, end of year celebrations were all still far from what we would consider normal and with complex travel restrictions in place around the globe traditional international air operations were still heavily disrupted.

For air cargo, the situation of demand far outstripping capacity continued to persist. Despite Covid, the global economy remained robust with extremely strong consumer spending in most developed economies. This fuelled strong double-digit growth in e-commerce demand with all major online shopping events again setting new records, and this strong demand could be seen in most air cargo sectors.

Strong demand with less capacity placed considerable stress on supply chain management with many aspects experiencing significant challenges. Many facilities were running at near, or even in some cases beyond, optimal capacity and we also saw temporary embargoes to allow backlogs to be cleared.

So, as we look to 2022, we can see some familiar themes remaining. Capacity will continue to rely heavily on freighter operations, with freighter conversions and new deliveries expected to remain buoyant.

4.5%

Global production remains very positive with the Organisation for Economic Co-operation and Development forecasting 4.5 per cent growth in global GDP for the upcoming year

Demand will continue to be strong, with Covid vaccine boosters and continued growth in personalised healthcare adding new demand. Global production remains very positive with the Organisation for Economic Co-operation and Development (OECD) forecasting 4.5 per cent growth in global GDP for the upcoming year.

Unfortunately, we can still expect workforce challenges as quarantine, restrictive work practices and challenges in people movement all impact the supply chain workforce. The shortages experienced in truck drivers can also be expected to remain.

Concerns of rising inflation may ultimately impact consumer spending. Inventory levels remain low as the added complexity brought about by Covid has significantly lengthened global supply chains. Industry yields are expected to remain strong although perhaps softening slightly compared to 2021.

Reduced global connectivity is directly correlated to the extent to which passenger global networks resume. Things were looking more positive as Q4 2021 passenger schedules were published, but the Omicron variant brought further travel restrictions and subsequent schedule cancellations. There is optimism that as 2022 progresses and global vaccination and booster programmes continue to be rolled out then we could see relaxation of travel obstacles. With a more consistent and clear passenger travel environment we could see passenger confidence returning and international passengers increasing, with the subsequent benefit of greater global connectivity for belly cargo capacity.

Freighter conversions and new deliveries are expected to remain buoyant

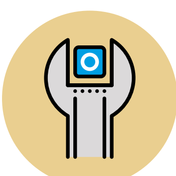
Illustrations: **Phil Couzens**

1. The air cargo industry will again need to show resilience and innovation this year

The industry must embrace technology and automation solutions

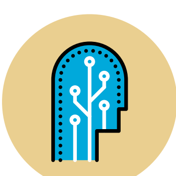
Two additional areas we can expect to see playing an increased role in 2022 are digitalisation and sustainability. The industry must embrace the full array of innovative technology and automation solutions that are available as efficient, optimised and transformed processes and practices are the only way we can handle more with less.

The following are just a few areas in which we can anticipate further adoption and utilisation during 2022, and beyond, to enhance industry efficiency and service quality delivery.



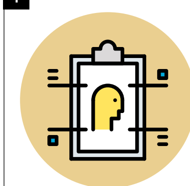
Capacity utilisation and commercial processes

Tariff distribution, booking, capacity interrogations, claims management and customer management activities must embrace industry APIs and system to system communications to maximise efficient operations and interactions.



Operational intelligence

With the increasing volume of specialised cargo being moved it is critical that enhanced data sharing be embraced in order to ensure all partners are prepared for the special handling requirements throughout the chain. This will include interactive devices and AI adoption to implement pre-emptive solutions designed around ensuring shipment integrity. AI-based disruption management tools will also be a key feature to maintain shipment commitments.



Border management

Air cargo provides value when moving through the supply chain and points of stagnation can become obstacles which ultimately create inefficiency and dilute value as facilities must be built to cater for maximum volumes stored rather than efficient movement of volumes through the system. Pre-cleared, pre-notified, document exchange and efficient safety and security compliance monitoring, target assessment and segregation will be critical. Supporting this will need efficient delivery and collection tools to avoid access obstacles and blockages.

Customer engagement

With the world of e-commerce growing at over 20 per cent annually, the e-commerce industry seeks faster and more interactive customer communication as standard operating procedures. With smaller shipment sizes and greatly increased volumes, new challenges have arisen. Technology-based automation solutions ranging from fully automated pick/pack and ship to aggregation and consolidation to delivery, drop offs and collections are being implemented. These all require full customer transparency throughout the journey.

Sustainability, in its broad definition of looking after our people, our planet and creating prosperity for all, will play an increasingly important part of supply chain sourcing as consumers look for more sustainability credentials as an influence in their purchasing decisions. This then works its way through the supply chain with each stakeholder expected to challenge themselves and their partners. Reducing our respective environmental footprint is one aspect but also ensuring we create an inclusive and diverse workforce with opportunities for all will become increasingly more important. Collectively we have a role to play in supporting the United Nations 17 Sustainable Development Goals and TIACA is launching a number of new initiatives to support the industry and individual companies' progress through their sustainability transformation journey.

So, 2022 will yet again test us all but the resilience and innovation demonstrated by the great men and women of the air cargo industry these past two years will stand us in good stead to tackle whatever this year throws at us.

GLYN HUGHES
The International Air Cargo Association's (TIACA) director general

Future confident:

FREIGHT FORWARDING OUTLOOK 2022

An increased focus on digitalisation, a continued capacity crunch, and the possibility of mergers and acquisitions are among the key trends for the freight forwarding community in 2022, reports ***Jason Holland***

The past two years have put immense pressure on freight forwarders, as companies have had to deal with significant capacity challenges.

The increase in consumer demand as a result of the global Covid-19 crisis, especially in terms of e-commerce, has been unprecedented, "perhaps accelerating growth in that space by several years", thinks Peter Penseel, chief operating officer, airfreight at CEVA Logistics.

"We expect the capacity constraints will likely continue in 2022," he says. "Intertwined with the issue of capacity is the Covid-19 pandemic, which could impact regional or global markets at any moment. Agility will continue to be important in 2022."

Thomas Mack, global head of air freight at DHL Global Forwarding, largely agrees with Penseel's assessment. "The situation in the air freight market remains volatile during the pandemic due to a high demand facing tight capacities," he says. "Especially e-commerce continues to contribute strongly to a robust air freight capacity demand, although we see a strong surge across all sectors.

"We notice a slight relaxation on the markets; while capacity in December 2021 was still at minus 17 per cent, we have observed at least a slight improvement compared to December 2020."

Mack says it is only when global vaccination campaigns "gain further momentum" and passenger airlines return to pre-Covid flight schedules and bring back belly capacity on important trade lanes that there will be a return to pre-pandemic conditions. "As long as this is not the case, capacity will remain tight and air freight rates at a high level," he notes.

DHL's top priority in 2022, therefore, will be business continuity, according to Mack. "To cope with these challenging market conditions, we at DHL Global Forwarding prepared ourselves along various dimensions. Thanks to our long-lasting partnerships with nearly all big air freight carriers, we have secured sufficient capacity for our customers. Moreover, we will continue to work closely with our colleagues from DHL Express, who operate their own air fleet to leverage additional capacity synergies in the best possible way.

"But also, the operation of various dedicated charters on the most essential trade lanes will help us to offer our customers a stable and reliable service."

For DB Schenker, another of the biggest freight forwarders in the market, there are also significant current operational challenges. "Key issues revolve around access to capacity which remains very limited, access to labour which is also difficult, and airport infrastructure which is stretched to the limits at most major hubs," a spokesperson explains.

The company says the way forward will involve securing "long term capacity commitments through flight operations, allowing for stable rates and reliable lift".

"WE HOPE WE WILL SEE FURTHER DIGITALISATION EFFORTS IN THE AIR FREIGHT INDUSTRY"

CEVA Logistics' Penseel says most shippers have realised over the past year that they must re-evaluate, and in some cases completely redesign, their supply chains. "We work with our customers in close collaboration to identify new, responsive logistics solutions for reinventing their supply chains," he says. "The volatile market has proven that shippers need to have strong, agile partners to help them both prepare their supply chains as best as possible and then be ready to adapt to rapidly changing market conditions."

The company will continue to support air freight customers this year through its 'SKYCAPACITY' programme, which allows them to secure air cargo capacity and book directly with the company. Penseel says the programme "offers consistent pricing and guaranteed capacity despite market peaks and lows, and currently offers a variety of destinations to and from North and South America, Europe and Asia Pacific. The owned, controlled network spans multiple carriers and includes freighter, pax freighter and passenger capacity — all available with leading management, tracking and customs services."

Illustration: **Phil Couzens**

1

1. DHL has formed partnerships with nearly all big air freight carriers – allowing it to secure capacity for customers
2. CEVA Logistics is working to identify new and responsive logistics solutions for reinventing supply chains

Digital days

In response to all the issues mentioned, those interviewed for this article believe 2022 could see a major focus on digitalisation. “Cargo is most likely one of the least digitised industries. However, the industry is ready more than ever for digitalisation,” says ECS’ group chief strategy and digital offer Cedric Millet, whose company joined forces with partner Wiremind Cargo at the start of 2022 to launch a new technology-focused cargo business called CargoTech. It will focus on “intelligently digitalising” the air cargo industry by innovating and designing solutions to expand the “standard product portfolio”.

Millet says: “We started to witness some significant developments [in industry digitalisation] before 2020, but the trend has significantly accelerated since the beginning of the pandemic. Manual work is not good enough and not fast enough in an environment where things are changing overnight and where resources become scarce.”

2

DHL Global Forwarding’s Mack believes that Covid-19 essentially acted as a catalyst for digitalisation in the logistics industry and particularly in the air freight business. “We have embarked on this journey already well ahead of the Covid crisis, and this strategy proved correct,” he says. “Our digital customer platform, ‘myDHLi’, launched right before the pandemic had hit the world and just celebrated its first anniversary last year. With the platform, we are offering an unmatched level of transparency and collaboration. It not only simplifies the booking management of shipments for our customers but also the interaction with other partners and us.”

“Airport infrastructure is stretched to the limits at most major hubs”

He says that people realised how digital solutions could ease and improve their daily business life during the pandemic. “This trend is to stay, and we strongly hope that we will see further digitalisation efforts in the air freight industry, for example, when it comes to implementing global standards to digitise customs declarations or bill of lading and other still very paper-heavy documentation processes.”

The myDHLi platform offers a “convenient and highly efficient” customer portal in which shipments can be managed “almost from end to end”. Mack says: “[Customers] not only get quotes for different transport modes with only a few clicks but are also able to track and trace their shipments, manage their documents, and run analysis on transport costs or punctuality, for example. The combination of all this gives us the opportunity to really add value for our customers. Where competition is always good for the business, we are convinced that we can offer solutions that will continue to be very attractive to our customers.”

Millet believes that freight forwarders will have a big role to play in industry-wide digitalisation, but says that collaboration will be essential – with CargoTech a good example of this. “We have a very modest and pragmatic approach, but a big ambition,” he says of the new business. “We created the foundation, CargoTech, by putting together two actors of the cargo/technology sectors that have existing products. These actors will be developing new digital solutions based on their expertise. We want everyone to understand CargoTech as an enabler and accelerator of the digitalisation and

1

innovation in the air freight industry. It will have several brands, with different products. Our goal is not to digitise just to digitise. We want to develop and implement a tailor-made solution for each process and each actor, which will be made possible through the cooperation of the parties inside CargoTech. Our objective is to serve the industry as a whole. We have the ambition to transform the industry, and this will not happen overnight and without extra 'heavyweights'. CargoTech will soon be welcoming some new players: stay tuned for future announcements."

Adjusting and evolving

In recent years, freight forwarders have also faced the threat of specialist cargo and belly hold carriers cutting them out to deal directly with cargo shippers. Will digitalisation impact this? "Digitalisation will necessarily generate more transparency, including for the shippers. It does not mean that the freight forwarders will no longer be necessary, quite the contrary," says Millet. "But some of their activities and service offerings will probably need to evolve. Besides that, we can foresee that it will probably trigger more consolidation in the freight forwarding sector. Smaller players will have more difficulty in adapting to the transformation of the industry."

In broader terms, DHL's Mack is also not overly concerned by the threat of freight forwarders being overlooked. In fact, he believes that in challenging times, such as those we are currently experiencing, freight forwarders can "genuinely prove their strength".

At DHL, for example, he says the company's global network – with offices and sites in nearly all countries – gives it the ability to offer customers agile and flexible solutions. "Our colleagues on the ground are not only true experts for the respective market and the local conditions, but they are also able to react to fast-changing requirements," he says. "The best and most recent example of this is the Covid crisis. In some countries, we observed regulations changing overnight. Maintaining the service for our customers and developing alternative solutions if necessary was only possible with a team of experts on the ground. In addition, we have long-lasting and trustful partnerships with nearly all the big air freight carriers. This gives us the opportunity to secure sufficient capacity for our customers in the market. We can provide solutions through our cooperation with our colleagues from DHL Aviation and not to forget, we have also done our homework with regard to implementing digital solutions."

"In some countries, we observed regulations changing overnight"

Many freight forwarders are currently investing in their e-commerce capabilities, and this will be another key trend for 2022. At CEVA Logistics, Penseel says the aim is "to build one of the world's leading end-to-end e-commerce service offerings – from inbound supplier management and warehousing fulfilment, to transport and customs services, to last-mile delivery and reverse logistics. We work with a wide range of e-commerce customers, including pureplay e-commerce marketplaces, omni-channel customers and e-retailers."

He notes CEVA Logistics' strong position as part of the CMA CGM Group, "which continues to support CEVA's development in e-commerce". On 31 January, the group announced that it would acquire 51 per cent of Colis Privé, an asset-light, last-mile delivery platform in France. "With the pending acquisition of Ingram Micro's CLS business [announced in December 2021], and now this new stake in Colis Privé [pending customary closing conditions and regulatory approvals], we expect to add more and more solutions and build compelling DTC networks to serve our e-commerce customers' needs," Penseel says. "E-commerce will continue to be a top priority for us – we think as much as 20 per cent of our total CEVA revenue could come from e-commerce-related activities by 2025."

DHL is similarly working on several specific solutions for its e-commerce

2

1. Freight forwarders are currently facing challenging market conditions
2. Innovation has been key to meeting the crisis
3. Covid has spurred increased collaboration

3

customers. "A good example is our charter solution which we have set up with our in-house charter team in China," says Mack. "On 1 January 2022 we launched our new 'Star Broker' e-commerce solutions unit. This specialised unit will focus on developing solutions tailored to the needs of e-commerce customers in China and Hong Kong. From mid-2022 we plan to expand this offering to other Asian countries. This specialised team of charter experts within our DHL Global Forwarding organisation understands the specific needs of customers in the e-commerce sector and will help us to develop even better transport solutions going forward."

As in any other year, safety and sustainability will remain among the central topics for freight forwarders. In terms of safety, Penseel notes that with the increase of technology shipments, as well as the rise of electric vehicles, the safe transport of lithium batteries "is becoming more and more important".

He says: "The industry has been talking about it for years, but we decided to act. We supported the International Air Transport Association (IATA) in developing and piloting its newest CEIV lithium battery certification, becoming the first company to receive the new certification in Q4 2021. The certification confirms each facility's ability to properly handle and store lithium batteries, as well as validate the necessary training and expertise of on-site employees. We are encouraging carriers, forwarders, handlers – anyone involved in air transport – to consider this certification in committing to the safe transport of lithium batteries."

Mack thinks that sustainability and the industry-wide aim to decarbonise air freight will "even further pick up" in 2022. "Especially the usage of sustainable aviation fuels (SAFs) in the air industry and the allocation of the CO2 emission savings are essential topics for [DHL] this year," he explains. "We are already offering sustainable transport solutions in ocean freight and ground transport, and we will further expand this service offering for our air freight solutions."

"Digitalisation will trigger consolidation in freight forwarding"

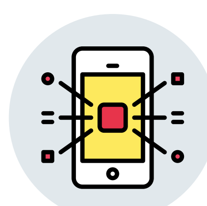
Staying ahead

Freight forwarders can continue to make a difference in an increasingly complex market where being ahead of the game is essential, Mack believes. Looking specifically at DHL Global Forwarding, he says that "with the right mindset and our customer-first mentality, I am sure we can look to the future with confidence. We have always been listening to the needs of our customers and developed solutions, especially regarding digitalisation or sustainability. Both topics can only be successfully addressed in a common way – either by offering the use of sustainable aviation fuels or digitalising standardised commodities, for example, waybill or customs documents."

There remains much to do to drive innovation in the sector, though, he says. "So, we expect an exciting future ahead of us with an even closer collaboration across all parties involved in the transport of goods via air freight."

20%

CEVA Logistics thinks as much as 20 per cent of its total revenue could come from e-commerce-related activities by 2025



"OUR AIM IS TO BUILD ONE OF THE WORLD'S LEADING END-TO-END E-COMMERCE OFFERINGS"

51%

On 31 January, the CMA CGM Group announced that it would acquire 51 per cent of Colis Privé, an asset-light, last-mile delivery platform

CARGO'S PANDEMIC PAINS HAVE LED TO E-COMMERCE GAINS

Some say e-commerce saved the air cargo business during the Covid-19 crisis. It has certainly reshaped it, says *Kevin Rozario*

1

1. FedEx is seeing package shipments heavily increase due to "the explosive growth" of e-commerce
2. Cainiao charters with Atlas Air have risen from three times a week to daily from Hong Kong to Sao Paulo, Brazil and Santiago, Chile

The news, last year, that online giant Amazon bought 11 Boeing 767-300 aircraft to expand its fleet and maintain service to US customers did not come as a shock. During the pandemic consumers were forced to turn to online purchases in their droves, all the while continuing to have high expectations for fast shipping.

In that scenario, Amazon had little option but to purchase its own aircraft; adding capacity that offers breathing room for some years to come. At the time, Sarah Rhoads, vice president of Amazon Global Air said that having a mix of both leased and owned aircraft "allows us to better manage our operations".

Management was key to success: according to management consultancy McKinsey, in Q2 2020, e-commerce achieved the growth previously forecasted for the next 10 years.

Delivering to customers across longer distances in shorter time frames has become normalised and the pandemic hastened the trend. Most companies don't have Amazon's financial firepower, and fully rely on third-party carriers for their online deliveries.

Lufthansa Cargo, like many, saw e-commerce driving air cargo growth before the pandemic. A subsidiary, heyworld, specialising in e-commerce transportation was formed in June 2019 – perfect timing for what came next. Since its founding, heyworld has shipped more than one million packages, handling on average almost 3,000 parcels per day.

"Our freighter operations were missing belly capacities at the beginning of the Coronavirus pandemic (just as) we noticed bigger increases of e-commerce shipments," says Lufthansa Cargo spokesperson Katharina Stegmann. "Large numbers of employees working from home worldwide resulted in higher volumes of IT hardware shipments."

Lufthansa firmly believes that e-commerce demand will continue to influence the development of air cargo "as consumers expect ever shorter delivery times for their ordered goods", notes Stegmann.

Package shipments skyrocket

The story is the same for big competitors. FedEx says it is experiencing significant package volume due to "the explosive growth" of e-commerce. Pre-Covid, the company projected that the US domestic market would reach 100 million packages per day by 2026. That figure is now expected this year, with online shipments contributing 88 per cent of the total market growth.

Air cargo has always been resilient in the face of past crises

IAG Cargo revenue hit €419 million in Q2 2021 (to June), up 17 per cent year-on-year and the company notes that e-commerce – from fashion and electronics to sporting equipment – "continued to be a major driver in the quarter". In March 2021, Emirates SkyCargo marked one year of utilising Boeing 777 passenger aircraft for cargo-only operations. The cargo carrier operated a total of more than 20,000 cargo-only flights on passenger aircraft during 2021.

In Asia – where consumers in markets like China are even more used to e-commerce than the west – smart logistics players like Alibaba-owned Cainiao are preparing for a further ramping up of the market. Dandy Zhang, commercial director of Global Line

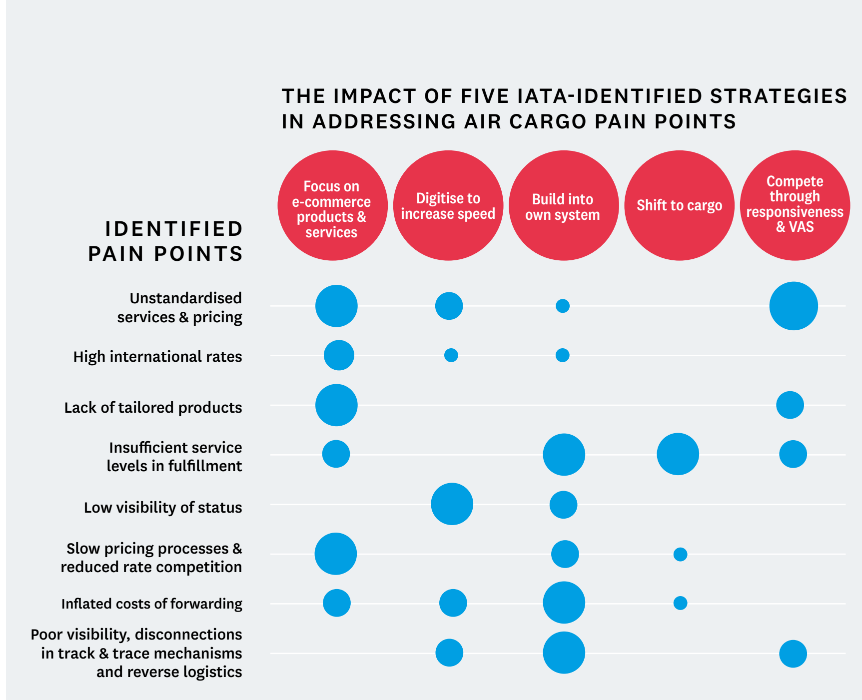
2

3000

Since its founding, heyworld has shipped more than one million packages, handling on average almost 3,000 parcels per day

Illustrations: **Phil Couzens**

1. Alibaba-owned Cainiao's smart warehouse in Hainan, China
2. Lufthansa Cargo says air cargo must respond to demands for shorter delivery times




1

Haul, which is Cainiao's cross-border business, tells us: "We are witnessing a phenomenal rise in cross-border trade and parcel volumes, leading to a more robust market for global cargo transportation." That is positive for the recovery of the whole cargo industry. The downside has been an unprecedented global supply chain bottle neck, resulting in rising shipping costs and capacity shortages. "Supply chain disruptions create a ripple effect in retail, enabling us to realise the essential role that logistics play in safeguarding normal operations," says Zhang. "These disruptions are unlikely to disappear overnight, and can be tackled by creating a flexible, resilient and balanced supply chain network worldwide."

Networks go wide and deep

Operationally, what did companies do during the Covid-19 crisis? Air cargo has always been resilient in the face of past crises, and Covid was no different. FedEx, like Amazon for example, added new hubs and sorting facilities, and hired tens of thousands of personnel to keep pace with demand. "We've been enhancing our robust networks to support our customers – both small and large," a company spokesperson says. "We are committed to seven-day residential delivery in the US by FedEx Ground."

15%

Cainiao now has more than 280 flights a month from China to international destinations, an increase of more than 15 per cent from a year ago

In Lufthansa Cargo's case, the solutions were pragmatic and included the modification of passenger aircraft for cargo, and relying on its dense worldwide network. "We will also offer additional air freight capacity in Europe from this spring by permanently converting Airbus A321 passenger aircraft into freighters," says Stegmann.

Transformations in aircraft usage, tech solutions and company culture have been striking

Cainiao's e-commerce preparations have been expansive. It has launched more flights and increased operational frequencies by deepening collaborations with shippers and airline partners globally. The company now has more than 280 flights a month from China to international destinations, an increase of over 15 per cent from a year ago. Cainiao has also added to its route network. For instance, charters with Atlas Air have risen from three times a week to daily from Hong Kong to Sao Paulo, Brazil and Santiago, Chile. It also launched direct daily charters from Nanning, China to Ho Chi Minh City, Vietnam to safeguard the cross-border logistics stability of Asian e-commerce player Lazada.

"We have digitalised the flow of goods via e-hubs in Belgium and Malaysia, empowered by automated warehouse machines," Zhang reports. Such robot-assisted warehousing is become increasing important to shippers.

2

More vertical integration

On a bigger scale, Cainiao has also positioned itself to defend against other forces that might impact the market by investing in "a few shipping and forwarding companies" to guarantee the

1. Cainiao's e-commerce preparations have included more flights and increasing operational frequencies by deepening collaborations with shippers and airline partners globally
2. Lufthansa Cargo, like many, planned for e-commerce driving air cargo growth even before the pandemic

use of containers and shipping spaces for its merchants.

The company expects that in a post-pandemic era, global distribution of Covid-19 vaccines and biomedical products will remain key to global recovery. Thus Cainiao has put in place a cross-border pharmaceutical cold chain that can ship these lines under conditions of 15-25°C, 2-8°C, and -25 to -15°C across Asia, Latin America and Africa.

Digitalisation has taken paper out of processes, helping to improve efficiency and transparency. Towards that end, several cargo players are working with the International Air Transport Association's (IATA) 'OneRecord' working group, whose aim is to create a universal data standard for the entire logistics industry.

Network capacity, automation and technology have underpinned e-commerce growth

1

"Furthermore, we are building modern APIs and connecting with cloud solutions that make logistics chains more transparent and we are developing IoT (Internet of things) solutions with container providers," says Lufthansa Cargo's Stegmann.

Investments in network capacity, automation and technology have been the elements that have underpinned successful e-commerce growth. FedEx

2

Express has a multi-year plan underway to upgrade and expand its hub, sort and package handling infrastructure.

Since June last year, FedEx Ground has also invested in more than 100 network expansion projects, including dozens of new facilities, that have added nearly 14.4 million square feet (about 300 football fields) to ensure sorting capacity.

In short, the cargo business has been revolutionised by e-commerce during the pandemic. Transformations in aircraft usage, tech solutions and company culture have been striking. And these changes are here to stay given that the e-commerce boom has, in IATA's words, led to a "tsunami of parcels".

About 131 billion packages were delivered in 2020 – three times more than in 2014, and these are expected to double again by 2025.

Meanwhile in 2020, IATA estimated that about 18 per cent of air cargo was e-commerce and this share is expected to surge to reach 22 per cent by the end of this year.

THE IATA VIEW

'PREIGHTERS', VACCINES & VOLUMES

"There was a time when e-commerce was key to air cargo; now air cargo has become key to e-commerce," said the International Air Transport Association's (IATA) manager cargo mail & e-commerce operations André Majeres recently on social media.

Speaking to *Airline Cargo Management*, Majeres clarified, saying: "During the first months of the pandemic, air cargo was the only way to transport the three most-needed commodities: vaccines, protective equipment and e-commerce. To address the capacity crunch, many airlines transformed passenger cabins into cargo-only compartments: the so-called 'preighters'."

50

IATA has analysed the operational requirements of the top 50 online retailers and outlined logistics models that are claimed to have helped air cargo operators to improve their e-commerce capabilities

The constraints arose from reduced usage of passenger aircraft, making it difficult to ship cargo and mail in lower holds, not to mention the regulatory challenges from closed borders, and labour shortages.

IATA has analysed the operational requirements of the top 50 online retailers and outlined logistics models that are claimed to have helped air cargo operators to improve their e-commerce capabilities. "Many airlines finally realised the significant impact of online retail on their business and started designing products and services dedicated to this segment," says Majeres.

To that end, IATA has identified five transformation strategies to capture e-commerce volumes (see table on page 28). Depending on the degree to which airlines wish to enter the market, they can adopt one or more of them.

According to IATA, e-commerce logistics has ballooned into a €368 billion market and, as a result, the air cargo supply chain has modernised considerably. "For example, some players are building smart warehouses equipped with full-chain logistics, electric vehicles, warehouse robotics, drones, self-driving delivery vans and AI-powered order consolidation," Majeres notes.

E-commerce logistics has ballooned into a €368bn market

"The pandemic has brought e-commerce to unprecedented heights," he says. "E-commerce air cargo was expected to grow by 10 per cent annually from 2019 to 2025. In 2017, the annual value of global e-commerce sales reached US$2 trillion and was forecast to exceed US$4.4 trillion by 2025.

"This was achieved in 2021. The new forecast for 2025 is now US$7.4 trillion."

OPEN & SHUT

Because freight doors need to be tough and work properly every time, there's more to freighter conversions than cutting a hole in the fuselage and making a door out of the removed material. With help from experts at AEI, ATS and Boeing, ***Paul E Eden*** investigates the open and shut case of the cargo door

The fundamental requirements for manufacturing and installing a cargo door – among them a large hole to port in the fuselage upper side, ease of door operation and rugged reliability – are relatively few, yet the processes of cutting and creation are exacting. Consideration must be given even before metal is cut to the exact door location, optimising positioning structurally and for access, and especially if relocation of sensors is required, as is the case with an angle of attack sensor on the Airbus A320.

A cargo door, the door jambs and sill must then be exactly engineered, yet able to tolerate their fair share of knocks and mistreatment in daily service.

A door that fails to open – or close – causes expensive delays, so a combination of precision design, rugged reliability and quality customer support is required. With regard to the last of these, Miami, Florida-based Aeronautical Engineers Inc (AEI) takes pride in more than six decades of narrowbody passenger to freight conversions, yet still has engineers ready to support customers globally, both operators and MROs.

Looking at the process of creating the door aperture, AEI's senior VP sales & marketing Robert Convey says the fact that the fuselage is a stressed, safety-critical structure not designed to have a large hole cut in it must be considered. "The door surround and floor modifications are performed while the aircraft is jacked and shored to zero out the loads," he explains. "Once the door jamb is complete, we put the aircraft back on its wheels and install the door."

While reusing material cut from the fuselage may at first sight seem the most obvious solution to manufacturing the door, Convey says: "The door is built up in several laser measured tools that match up to a large jamb tool used on the aircraft to locate the jambs and upper hinge line. This allows us to build the door offsite and ship it to the conversion centre to be installed, with confidence that it will align properly. We leave extra skin on the door perimeter that's trimmed once the door is hung."

DOOR RELIABILITY IS KEY TO A FREIGHTER'S UTILITY

Door before floor

The exact passenger to freight conversion process depends upon aircraft type and provider, but from AEI's point of view and as far as the company's many Boeing 737 conversions are concerned, work begins with the 86 x 137in (2.2 x 3.5m) main cargo door and its surroundings. As a first step, the skin around the door area is replaced with thicker material, before the door aperture is cut. This thicker skin primarily creates a more robust basis to handle the revised structure of door and jambs, rather than providing resistance to knocks and scrapes during cargo handling; the lower jamb is, however, reinforced against accidental impacts. The risk of damage to the door or surrounding aircraft structure is further reduced by positioning the forward door jamb to provide a full 16½in (0.4m) of manoeuvre space between the jamb and the side of any container being loaded into the aircraft.

The upper and lower door jambs are inserted into the new skin and tied into the fuselage frames before the process is repeated for the side jambs.

A DOOR THAT FAILS TO OPEN CAUSES EXPENSIVE DELAYS, SO A COMBINATION OF PRECISION DESIGN, RELIABILITY AND CUSTOMER SUPPORT IS NEEDED

The side jambs are also tied into the upper and lower jambs, but the door is not hung until a good deal more work has been completed.

The 9g load barrier goes in next, followed by floor reinforcement and, if the conversion feedstock is a 737-800, replacement of the aft floor beams. Only then is the door hung and adjusted. The quality of any freighter's door is fundamental to its serviceability and AEI's installations are considered to be among the best on the market, Convey says. "Out of everything we do, our bread and butter is the door. The company started in 1958, so we've done a lot of this on a lot of different airplanes – more than 500 – and the technology and thought process on how we build the door and install it has been the same throughout," he notes.

The result is a reliable door that Convey describes as "simple to operate and simple to fix. We do have issues from time to time, but if it gets stuck, it's easy to open." Freighters, especially narrowbodies, work hard and the door is like the tailgate on a pick-up truck.

Finished doors are inevitably large and heavy, and must be opened high for loading and unloading, well out of the way of lifting equipment and load platforms. Convey reports that all AEI's doors are hydraulically actuated, although other conversion houses may use a combination of electric and hydraulic. "We try to touch the original aircraft systems and structure as little as possible," he notes. "We have an independent hydraulic system and we only tie into one bus on the electrical system. The 737 as a whole is a very good airplane, so we try to keep the conversion to itself and avoid disrupting the aircraft."

Open to alternatives?

Forward or, occasionally, aft freight doors are the only solution employed in today's passenger to freight conversions and the majority of production freighters. The exceptions among the airliner-based cargo aircraft are Boeing's 747F variants with their upward-hinged visor nose and the Airbus A300-600ST Beluga ST and A330-based BelugaXL, but this has not always been the case. The 1960s' Canadair CL-44D4 employed a 'swing tail', with the rear fuselage configured

Source: Boeing

Source: Boeing

Source: ATS

1. Boeing offers both a production 767-300F and a P2F 767-300BCF. The cargo door is common to both variants, maximising commonality for mixed-fleet operators
2. The production Boeing 747 freighters, exemplified here by the 747-8F, have always featured the unusual upward-hinged visor nose cargo door. A conventional main deck cargo door is set into the aft fuselage
3. The Door Armor product temporarily installed on a Boeing 737

to hinge starboard just ahead of the empennage. The result was access for straight-in loading but careful re-rigging was required after each opening, while the associated structure was heavy and complex. But could new technology successfully apply the swing-tail concept to a contemporary Airbus or Boeing? Robert Convey is unequivocal in his opinion: "No, the certification process would be too intense."

Boeing's production freighter portfolio includes the visor-nosed, rear freight door-equipped 133.2-tonne payload, 747-8F, alongside aircraft ranging in payload capacity from the 112.3-tonne 777-8F and 102-tonne 777F, to the 52.5-tonne 767-300F. Through approved MROs it also offers Boeing Converted Freighter (BCF) passenger to freight conversions comprising the 51.6-tonne payload 767-300BCF and 22.7-tonne 737-800BCF.

The 767 is an especially interesting cargo aircraft given its availability in production and through modification. Boeing emphasises the commonality between F and BCF variants. "The 767-300 production freighter and the 767-300BCF share the same main deck cargo door in identical locations on the aircraft," a spokesperson notes.

133.2

↑

Boeing's production freighter portfolio includes the visor-nosed, rear freight door-equipped 133.2-tonne payload, 747-8F, alongside aircraft ranging in payload capacity from the 112.3-tonne 777-8F and 102-tonne 777F, to the 52.5-tonne 767-300F

DOOR ARMOR

With global passenger aircraft operations ramping back up towards pre-pandemic levels, huge quantities of air freight will again be flying as belly cargo. Recognising the importance of this business to its customers, Everett, Washington-headquartered Aviation Technical Services (ATS) worked with partner Cargo Door Armor to create a temporary, non-flying cargo door modification for the Boeing 737.

The aircraft's hold cargo doors open inwards, potentially leaving them vulnerable to damage from contact with freight or baggage on opening and closing. Attached by the ground handling team in just a few seconds, the Door Armor product protects the doors' exterior surface from knocks and scrapes; it is removed just as quickly prior to the door being closed. Operator training for safe Door Armor use takes just 30 minutes. Launch customer Alaska Airlines says it has saved millions of dollars in repair costs and has minimised out of service time due to use of the Door Armor product since 2012.

Source: AEI 1

1. Ethiopian Cargo is an important customer for AEI's 737-800SF freighter. The conversion includes installation of the door controls and supplementary manual hydraulic back-up pump on the 9g barrier, and this enables easy one-person door operation

201

The 747-8F and 777F are engineered to use the same loading equipment, with their door sills at 201 and 212½in (5.1 and 5.4m) respectively, above the ground and a 118in (3m) load height between main hold floor and door hinge line

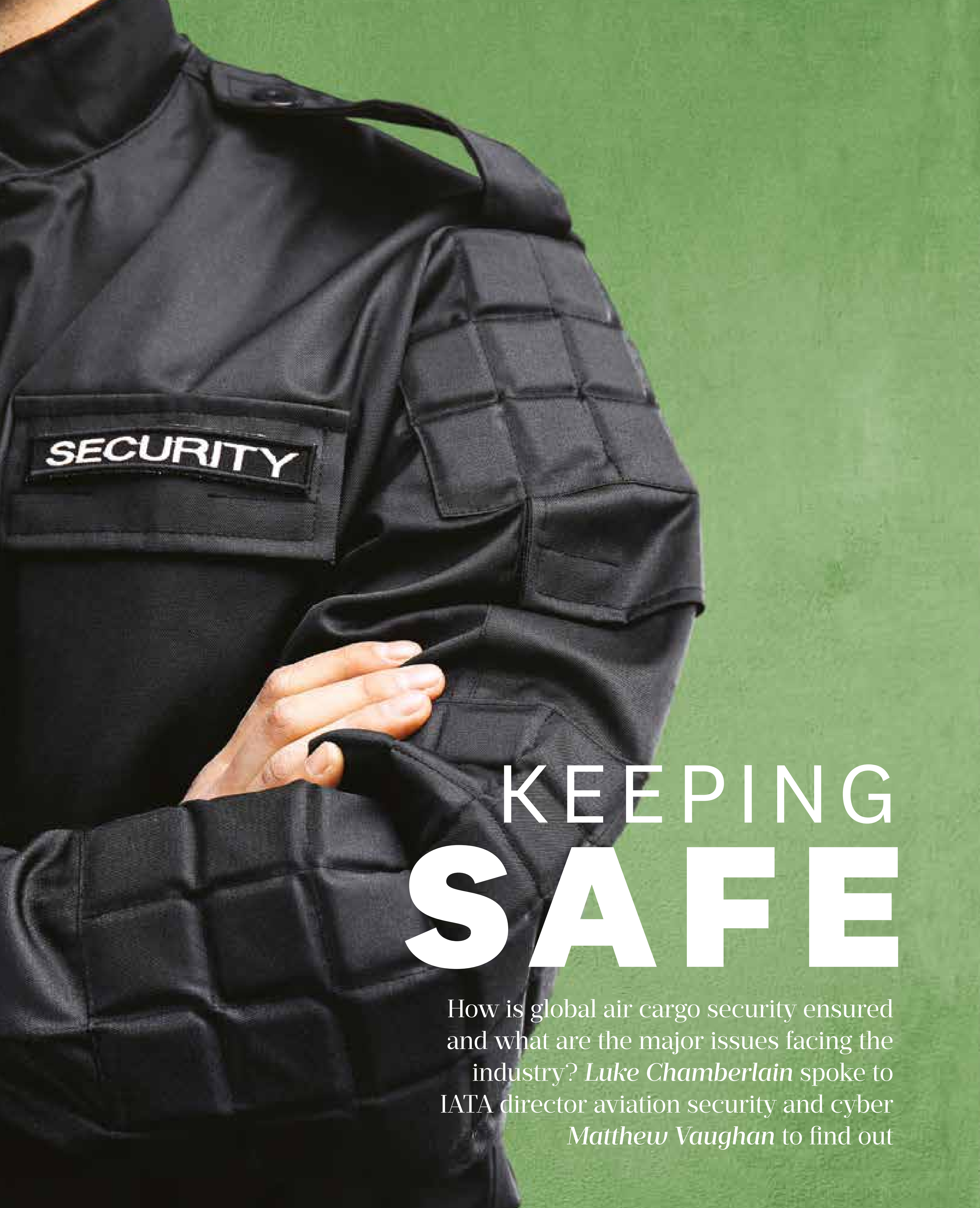
"The main deck door was optimised to facilitate loading of cargo with a design that ensures a wide, clear opening with adequate clearance and guidance when loading pallet positions."

Indeed, the 767-300F and 767-300BCF share a main cargo door design measuring 134 x 102in (3.4 x 2.6m), with forward and aft hold cargo doors to starboard, each measuring 67in (1.7m) high.

Meanwhile, the 747-8F and 777F are engineered to use the same loading equipment, with their door sills at 201 and 212½in (5.1 and 5.4m) respectively, above the ground and a 118in (3m) load height between main hold floor and door hinge line. The 747-8F is unusual in featuring the nose door common to all production 747 freighters, while its main deck side door is mounted aft, a feature common to all 747 cargo aircraft, including conversions.

Basic necessities that require careful, quality engineering to do well, the main deck cargo door and its surrounding structure are the key to a freighter's utility and day-to-day performance, whether it rolls off the production line fully configured as a new-build aircraft or represents a second life for a former airliner. Although the floor, safety systems and other equipment are arguably just as essential, door reliability is everything.

THE QUALITY OF ANY FREIGHTER'S DOOR IS FUNDAMENTAL TO ITS SERVICEABILITY



KEEPING SAFE

How is global air cargo security ensured and what are the major issues facing the industry? *Luke Chamberlain* spoke to IATA director aviation security and cyber *Matthew Vaughan* to find out

1. IATA director aviation security and cyber Matthew Vaughan
2. Lithium batteries represent one of the biggest of many security challenges in the field of air cargo

1

2

Q *Airline Cargo Management*: Can you provide an overview of the role that the International Air Transport Association (IATA) plays in ensuring global air cargo security?

A *Matthew Vaughan*: The best way to describe it is to start with the multilateral work that takes place at the International Civil Aviation Organization (ICAO). IATA is a recognised foundation association member of the ICAO processes in the way that it creates standards and recommended practices. We moderate and work on proposals in partnership with states around air cargo and security. All cargo related policy and regulations start from that sense of cooperation.

Second to that is the IATA Operational Safety Audit programme, otherwise known as IOSA, which really gets into the airline level implementation of measures. IOSA is developed in coordination with the 19 annexes of the Chicago Convention. I don't want to say a hand in glove, but it's a direct correlation between twin standards that are international in nature, and then, of course, the IOSA-related standards and recommended practices that go with that.

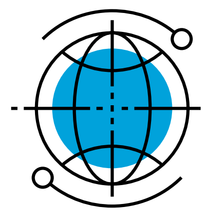
Then on a national basis, we go through the national regulations around air cargo security and ensure that they are moderated and developed in a way that is beneficial for all.

Q What are the main security issues and vulnerabilities that the international air cargo industry currently faces?

A From a macro level, the true belts and braces of security is 'insider' threat. Lithium batteries is another, and more than just a security challenge on its own, it's got operational challenges that security can benefit from. Another issue is the national regulations that are developing; there's some effort around the digitalisation of transfer of information between jurisdictions which, if not done correctly, represents a significant challenge for the industry in terms of compliance and ensuring that we continue to move the supply chain in a quick and cost-effective manner. We're working on initiatives for each of those challenges and have solutions and standards in place. In the case of insider threat, we were part of the recent changes at Chicago Convention-level that strengthened background checks.

Q What is IATA's current stance on insider threat?

A Our view at the moment is that we support the level of international standards.



20

Immediately after 9/11, there was a blanket across everybody and everything. 20 years down the track, trust is growing

We continue to develop guidance and technical instructions to help and assist airlines and airports to implement some of those requirements. The important thing to take note of with insiders is that, yes, there are background checks and stringent measures related to that, but it's also about the overall security culture and establishing a culture that enables and empowers staff to talk, observe and report. We were heavily involved in security culture related activities to the degree that you can be in a pandemic. Last year was the year of security culture with ICAO; we ran a number of webinars and now offer a range of materials that are free to access through our website.

Q What are the main areas that insiders are targeting?

A From an aviation perspective, requirements and measures have evolved year on year; they've gotten smarter and more targeted. Immediately after 9/11, there was a blanket across everybody and everything. 20 years down the track, trust is growing. When you talk about the way that insiders may affect some of that trust, there absolutely isn't anything specific. It would be unprofessional to

"WE CONTINUE TO DEVELOP GUIDANCE AND TECHNICAL INSTRUCTIONS TO ASSIST AIRLINES"

1. All cargo related policy and regulations start from a sense of cooperation between states and industry associations

talk about it from our perspective, but you only need to do a Google search to see the stuff in public record that has taken place in various jurisdictions.

The story is more about how effective measures have worked in preventing nefarious activities taking place. The key takeaway is that controls are smarter and more targeted, and absolutely minimise the chances of broad insider activity in the same way that we saw 20 years ago.

Q How much of a threat is theft?

A Within the perimeter of security restricted areas, theft and opportunistic crime is minimal. Nothing is absolute, but it almost doesn't exist. The security firewall that sits around the aviation system is significantly different and stronger than the rest of the cargo supply chain.

Q What impact has the pandemic had on the security of air cargo – and how integral is security to the industry's recovery from Covid-19?

A There haven't been any changes to the aviation security firewall solely because of the pandemic.

There is nothing notable about the air cargo supply chain, in terms of Covid, other than there has been an increase of a certain commodity type (vaccines). The security regulations and the protocols have all maintained their position in successfully continuing to contribute to a supply chain that's pretty quick and safe. It's more about the way that those items enter into the aviation supply chain. Air cargo takes advantage of multi-jurisdictional trust between countries, so cargo that is secured in one location successfully travels through other locations, without needing measures to be repeated. The supply chain continues to successfully support the growth of air cargo during this particular period.

Q Are there any regional differences in security challenges?

A The short answer is there isn't anything specific about regions that makes threat in air cargo security terms greater in one region and not in others. This is because of the nature of air cargo and the multi-jurisdictional, international nature of it. There are no specific concerns in any particular part of the world, despite having different export and import volumes in other parts of the world. The kind of security issues I mentioned such as insiders and the digitalisation of advanced information are agnostic to regional issues.

“DIGITAL INFORMATION SHARING WILL OFFER GREATER OPPORTUNITIES FOR OVERSIGHT”

Q How integral is data sharing and the audit trail process?

A ICAO has a responsibility for oversight on governance from an international perspective, so we are part of the steering group that moderates and ensures that oversight is effective and produces results to learn from. We're also part of the IRS. As we move towards digital information sharing, that's going to give greater opportunities to start looking at data points in the supply chain that will enable better forms of targeted or risk-based forms of oversight as opposed to this current approach, which is where you go on-site and inspect and audit every piece of the supply chain. As that evolves, oversight will become a little different than where it is today and just part of the operating realities of doing things smarter and more optimised.

Q What are the latest trends and innovations?

A From an IATA point of view, we have an initiative called the consignments security declaration (CSD). For 2022, we have developed a resolution that aims to digitalise the CSD, which will be called the ECSD. We truly believe in the fundamentals of why that needs to happen so that we can successfully continue to risk manage and show the industry's role in ensuring security measures are applied in the right way to the right things at the right time. Having that record in digital format, as opposed to paper based, extends the whole way through the ecosystem of the supply chain. And, again, goes back to that information sharing and the collection of key data points that enable that.

Overcoming air cargo security threats

Threat detection and security screening technologies company Smiths Detection works to prevent two categories of criminal activity, according to its head of airports & baggage screening and head of air cargo screening Harald Jentsch. "The first is the prevention of terrorism," he says. "This is achieved through the detection of explosives (both trace explosives and IEDs, improvised explosive devices) using computer tomography (CT), X-ray and ion mobility spectrometry."

The second is the prevention of illegal passage and trafficking of goods including narcotics, weapons, currency and wildlife by using automatic object recognition applications, such as the company's 'iCMORE' object recognition software.

"Not only is the movement of such goods usually prohibited, but they may be used to finance further illegal activity – wildlife trafficking is among the five most lucrative global crimes and is often run by highly organised criminal networks," he explains.

Many technologies are used to overcome air cargo security threats. "X-ray is typically the most efficient option for air cargo security screening when it comes to detecting explosives and there are two technologies that meet the current standards required by major global regulators," Jentsch says.

"These are: conventional X-ray scanners, with manual evaluation and automatic explosives detection systems (EDS), which facilitate even faster turnover in integrated, high throughput environments such as express forwarding; and the latest technology for screening parcels, such as EDS, with computed tomography, which can be incorporated into advanced, fully automatic material handling lines. This new generation equipment offers highly accurate identification of suspicious substances and quick software upgrades to detect the yet unknown threats and contraband of tomorrow."

"The future will be in integrated, open and data-driven solutions"

Jentsch explains how Smiths Detection is able to detect explosive substances beyond regulatory requirements. "With usage of machine learning, convolutional neuronal networks – or generally with artificial intelligence (AI) – the security industry now has additional technology tools to identify IEDs. The human operator also represents an important stage of the detection process and is responsible for differentiating between threats and false alarms."

By utilising AI capabilities, Smiths Detection also offers tools to automatically detect objects that are prohibited or dangerous, such as lithium batteries. "Although the technology is in place, its use is dependent on partnerships with various agencies to train and develop capabilities for future threats," Jentsch says.

In terms of new technologies and initiatives in air cargo security screening, Jentsch says Smiths Detection is expecting to see accelerated development in the introduction of new and improved capabilities for the automatic detection of dangerous, prohibited and contraband items through the use of AI and material discrimination algorithms. "Smiths Detection is investing in the further development of this technology and its family of automatic target recognition applications, iCMORE, will continue to grow," he comments.

"Another area of growth is the development and adoption of networking data analytic capabilities. The future will be in integrated, open and data-driven solutions, which is being adopted in certain areas such as the distribution of images, alarms and information across cargo operation sites. The next step will be taking this further by sharing data across regions.

"Finally, open architecture, the interoperability of security screening hardware, software and algorithms from different suppliers within one solution, is also gathering momentum in the air transport industry. Key drivers for open architecture adoption include the need to respond quickly to ever changing threats; leverage new and developing technologies such as AI; and produce detailed management information from an increasingly complex screening operation. It is already commonplace to integrate lanes and scanners from different suppliers at security checkpoints and developing this further to incorporate software and algorithms is an exciting concept."

1

1. Smiths Detection works to prevent terrorism as well as the illegal passage and trafficking of goods

SOMETHING TO RELEYE ON

Envirotainer has introduced a new container solution with a smaller CO2 footprint while also investing in sustainable aviation fuel

Secure cold chain solutions provider Envirotainer says it has set a "new benchmark" in the sustainability of unit load devices (ULDs) with its new container solution and complementary service, the 'Releye RAP'. The company claims the new generation ULD has the smallest CO2 footprint in the industry due to its low weight, efficient cargo space, and "outstanding" reliability.

The Releye RAP is said to meet the strictest requirements in pharmaceutical air freight, with its integrated live monitoring enabling insights into product condition, location and progress of shipment, the company says. The container can also be monitored and maintained with Envirotainer's new 'Control Tower' service. In it, a global team of operators "follow a shipment's every move, ready to respond within minutes to any critical event".

A number of airlines have already approved the new generation container for operations. Swiss WorldCargo will shortly join them. "We really appreciate our close partnership with Envirotainer and are proud to be the first European carrier to approve the new Envirotainer Releye RAP and welcome it into our product portfolio," says Swiss International Air Lines' head of cargo Lorenzo Stoll. "The Releye RAP combines the newest technology and reaches outstanding CO2 reductions per shipment. This fully aligns with our own focus on sustainable operations and continued reduction of our carbon footprint."

Envirotainer plans to further reduce the impact of the container by investing in sustainable aviation fuel (SAF) produced from sustainable feedstock such as cooking oil, animal waste or solid waste from homes and businesses, as part of a sustainability partnership with Air France KLM Martinair Cargo (AFKLMP), which has also approved the newly introduced container.

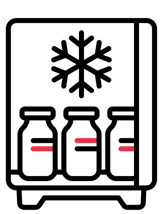
Commenting on the company's commitment to sustainability, Envirotainer states: "80-90 per cent of the CO2 emissions in the pharmaceutical value-chain are generated in the production and raw material sourcing, so preventing temperature-sensitive pharmaceuticals from being exposed to temperature deviations during transport is crucial.

"Envirotainer is happy to report industry-leading levels of less than 0.1 per cent temperature deviations. We believe this is especially noteworthy considering that some 600 million vials of pharmaceuticals were transported in our cold chain solutions in 2020.

"Also, Envirotainer develops, manufactures and provides innovative cold chain air transportation solutions, including validation, support and service, for pharmaceutical products that require a temperature-controlled environment. Being part of this truly circular economy, where our products are leased to our customers and are thus re-used hundreds of times during their lifetime, strongly benefits the environment by reducing packaging landfills."

> "Being part of this circular economy strongly benefits the environment"

1. The 'Releye RAP' container offers a temperature-controlled five-pallet solution



600

600 million vials of pharmaceuticals were transported in Envirotainer's cold chain solutions in 2020.

Choose your subscription

Airline

CARGO

Management

Subscribe to Airline Cargo Management for **FREE**

Try Airline Cargo Management magazine for an in-depth, informative and unique take on the latest market trends and news from the Airline Cargo Management. Available in print and digital format, it's the perfect solution for anybody working in aviation who wants an intelligent and independent view of what is going on in the market.

Simply choose one of our subscription bundles below and subscribe online here:

aviationbusinessnews.com/subscribe

Print

6 issues of Airline Cargo Management magazine delivered to your office or home address

Print & Digital

6 issues of Airline Cargo Management magazine delivered to your office or home address

•

6 issues of Airline Cargo Management magazine delivered to your inbox

Print, Digital & Newsletter

6 issues of Airline Cargo Management magazine delivered to your office or home address

•

6 issues of Airline Cargo Management magazine delivered to your inbox

•

fortnightly e-newsletter focusing on the latest news from the aviation cargo industry straight to your inbox