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Management

Seeing the light

Transporting Covid-19
vaccines to end the
pandemic



Dangerous goods

Keeping track of technologies,
training and regulations

Born to be a freighter

ATR sees bright future
for purpose-built 72-600F

Transformation time

The narrowbody conversions
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Cover design by Phil Couzens

EDITORIAL TEAM

EDITOR

Jason Holland
jason.holland@realresponsemedia.com

FEATURES EDITOR

Melissa Moody
melissa.moody@realresponsemedia.com

CONTRIBUTORS

Chris Kjelgaard
Mario Pierobon

ART DIRECTOR

Phil Couzens

SUB-EDITOR

Heather Ford

GROUP PRODUCTION MANAGER

Barnaby Moore
barnaby.moore@realresponsemedia.com

COMMERCIAL MANAGER

Anthony Wilkinson
anthony.wilkinson@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

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Management

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EDITOR'S LETTER

Welcome to the spring 2021 issue of Airline Cargo Management. As the Covid-19 crisis continues to dominate daily life and discussions, the light at the end of the tunnel is at least firmly in sight with the ongoing global rollout of vaccines.

Our cover reflects that sentiment, and the vital role the air cargo industry is playing in transporting the vaccines. The level of co-operation, co-ordination and communication needed is no mean feat, and the industry should take pride in its efforts so far, even if it is well used to overcoming big logistical challenges.

In our cover story on page 22, we share some early success stories from across the globe. While many industry executives note that the vaccines' global airfreight tonnage is still fairly limited, operations are expected to ramp up in the coming months, so we also evaluate the next steps and the major challenges that will need to be met.

Elsewhere, the narrowbody freighter conversion market is in the spotlight. It may currently be dominated by Boeing single-aisle jets, but A320-family aircraft are expected to be converted in large numbers in the future, transforming sector dynamics.

ATR is hoping the regional freight market will also be transformed – by its new purpose-built turboprop. With the first delivery to launch customer FedEx having taken place in December, ATR's head of leasing, freighter and asset management Guillaume Huertas gives us the inside track on the 72-600F programme.

This issue also features expert comment and insights from a range of industry voices: ECS Group on the evolving role of the GSA; Web Manuals on compliance with new regulations brought about by Covid-19 and Brexit; Smiths Detection on speeding up the screening process; and Etihad Cargo on a collaborative project facilitating vaccine distribution.

I hope you enjoy reading these features, and please do get in touch if you have any comments or suggestions.

Jason Holland

EDITOR

Jason.Holland@realresponsemedia.com

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News from across the industry

BUSINESS BRIEFING



Illustration: Phil Couzens

COLD CHAIN IN 2021

THREE PREDICTIONS

Covid-19 will continue to change the cold chain industry landscape in 2021 and may have a “long-term ripple effect”, according to Peli BioThermal’s president David Williams, who has made three predictions for the industry this year.

Williams’ first prediction is a return to refrigerated temperatures for Covid-19 vaccines. “All else equal, it is likely the market will favour vaccines that require refrigerated temperatures of 2-8°C. Existing infrastructure exists to more easily transport and store these vaccines around the world. Additionally, refrigerated temperatures eliminate concerns around shortages of dry ice and concerns about how it reduces the amount of available cargo space on aircraft.

“This preference for refrigerated vaccines could push pharmaceutical companies with deep frozen vaccines to determine how to maintain efficacy of the

vaccine at a refrigerated temperature. If this happens, we will gain knowledge that will move pharmaceuticals’ current storage and distribution temperature from -80°C to easier to distribute ranges of -50°C, -20°C or even refrigerated.”

Williams also expects continued outsourcing in 2021. “Pharmaceutical supply chains continue to reach new levels of complexity that challenge even the most seasoned logistics and supply chain professionals,” he said.

“Contract manufacturing organisations (CMOs) and contract development and manufacturing organisations (CDMOs) offer expertise in manufacturing and development of therapies, allowing pharmaceutical companies to focus on their areas of expertise. This year we expect to see even more pharmaceutical companies outsource these capabilities to CMOs and CDMOs, which will help them reduce overall costs. We also believe CMOs and CDMOs will expand to include



Covid-19 may have a long-term ripple effect

DAVID WILLIAMS

more services, including cold chain.”

Williams’ final prediction is that there will be growth in direct-to-patient and direct-from-patient operations, bringing the cold chain to the “last mile”. He said: “Services like phlebotomy, drug administration and sample collection will require cold chain solutions. We anticipate a drive toward solutions that require little training and are easy for home healthcare professionals and patients to operate. We should also see more assessment and evaluation of the cold chain for home-based care in 2021.”



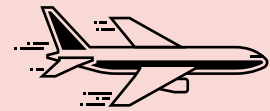
2028

Lufthansa Cargo has begun a modernisation programme of its logistics centre in Frankfurt, Germany which will continue on a modular basis until 2028



3

DB Schenker launched its first three-continent routes in company history, connecting America, Europe and Asia directly



100

Virgin Atlantic’s new cargo-only flights between Heathrow and Evenes, Norway will offer more than 100 tonnes of capacity each week, primarily seafood and fish

COVID-19

Cathay solution offers near real time monitoring of vaccine distribution

Cathay Pacific Cargo has developed a new solution to help distribute Covid-19 vaccines across the globe. ‘Ultra Track’ is described by the company as a “next-generation track-and-trace system”. It monitors information including temperature, GPS location and humidity using low-energy Bluetooth readers.

This gives shippers and forwarders near real time visibility to ensure vaccines remain within their

transportation temperature ranges. Shipments using Ultra Track will also be monitored by the company’s newly established Operations Control Centre, which is based in Hong Kong. It is staffed 24/7, with the team able to instruct ramp and cargo terminal staff to take proactive steps to ensure the various storage requirements of vaccines are maintained.

“Ultra Track will allow forwarders to monitor the condition of their vaccine shipments in near real time. It will be

progressively rolled out through the first quarter of this year, and we will be offering the service free of charge for any Covid-19 vaccine shipments,” said Cathay Pacific’s director cargo Tom Owen.

“With our 20 dedicated freighters and cargo bellies of passenger aircraft supporting our freighter network, we stand ready to assist with what will be the biggest humanitarian response to a situation involving civil aviation that anyone has ever seen.”

Appointments



Magali Beauregard becomes chief customer officer at CargoAi

CargoAi has appointed Magali Beauregard as chief customer officer, effective 1 February. She has previously served as head of commercial Asia Pacific at Lufthansa Cargo and senior account manager at Booking.com.

“To head the customer department at CargoAi, we needed someone who had a highly pragmatic vision of customer needs,” said CargoAi CEO Matthieu Petot. “With the combination of her experience of SAAS platforms and her total understanding of air cargo, Magali fits the bill perfectly. A real achiever who has genuine passion for the industry, we couldn’t hope for anyone better placed to design the best-in-class customer-based product and customer journey we need.”

Michael Haskins joins B&H Worldwide as head of global sales

B&H Worldwide has appointed Michael Haskins as head of global sales. He has more than 20 years of experience leading multinational operations in aerospace time critical logistics.

Haskins most recently served as managing director of Tala (The Aerospace Logistics Alliance), where he was responsible for developing brand and global sales. He has also held senior leadership positions with Kuehne+Nagel.

B&H Worldwide’s group managing director Gary Wilson said: “This appointment is part of an on-going development programme that has seen the company expand substantially over the last four years.”

Delta Cargo appoints “visionary” pair

Delta Cargo has made two leadership appointments. With 26 years of experience in logistics and having previously been at DHL Global Forwarding and Emirates SkyCargo, Jannie Davel has joined as managing director – commercial.

He most recently served as senior vice president at Global Feeder Services, a specialised industry player operating 15 freighters globally.

Vishal Bhatnagar has been promoted to the position of managing director – global cargo operations. He previously served as director, cargo operations performance and customer experience and joined Delta Cargo in 2017. Prior to that, he led North and South America operations for Lufthansa Cargo.

Jannie and Vishal are visionary industry leaders, providing real strength to our team

DELTA CARGO VP ROB WALPOLE



Customer experience is central at CargoAi, allowing us to improve digital solutions

MAGALI BEAUREGARD

Chapman Freeborn appoints Ben Hampton to head up new US office

Chapman Freeborn Airchartering has appointed Ben Hampton as cargo director of its new Northeast office in the USA. He has more than 10 years of experience in the aviation industry, previously serving as director of sales for a part 135 operator, and before that as assistant director of US cargo for a global charter brokerage.

Hampton said: “Chapman Freeborn is considered the gold standard in global charters and I’m thrilled to be joining the team to build on that reputation here in the US.”



I’m thrilled to be joining Chapman Freeborn to build on its reputation in the US

BEN HAMPTON

Ashwin Bhat to become Lufthansa Cargo chief commercial officer

Lufthansa Cargo has appointed Ashwin Bhat as chief commercial officer, effective 1 March. He will take over as member of the executive board in charge of the company’s product and sales division. Bhat replaces Dorothea von Boxberg, previously named as Lufthansa Cargo’s new chief executive officer.

Bhat will be responsible for the external organisation of sales and handling, product, revenue management, pricing, network planning and sales management worldwide. He has served as vice president and head of cargo at Swiss International Air Lines since October 2015.





FACILITIES

New logistics centre at Munich Airport starts operations

Munich Airport's new logistics centre has begun operations, featuring "new generation" storage technology. As well as combining the warehousing capacities of the Flughafen München GmbH (FMG) group, the facility offers warehousing space to external companies in a total area of 24,000sqm.

The logistics centre includes facilities such as a 300sqm deep freeze store designed for temperatures as low as

-20°C and a 100sqm 'fresh goods' cold warehouse cooled to a temperature of 4°C.

It also features a high-bay warehouse with space for more than 5,600 pallets and a fully automated small parts store with around 32,000 containers. Part of the store is temperature-controlled to enable the storage and transportation of temperature-sensitive goods.

The facility offers warehousing space to external companies in a total area of 24,000sqm



FACILITIES

DHL extends pharmaceutical logistics capacity in Leipzig

DHL Global Forwarding has expanded its Life Sciences & Healthcare facility in Leipzig by approximately 2,500sqm.

The Deutsche Post DHL Group subsidiary said the expansion was part of its response in meeting the logistical requirements related to importing and exporting Covid-19 vaccines in Germany.

A DHL Global Forwarding facility in Frankfurt am Main was also recently expanded in terms of capacity and equipment. In addition, DHL has achieved IATA CEIV Pharma recertification for its GxP (good practice) facilities in Frankfurt am Main, Hamburg and Leipzig.

Close to Leipzig Airport, the newly expanded facility houses equipment for storing and handling temperature-controlled pharmaceutical and medical products, such as vaccines.

DHL Global Forwarding in Germany CEO Tobias Schmidt said demand for pharmaceutical products and goods was growing and would increase with the development of Covid-19 vaccinations. "That is why we prepared for this scenario early on and put everything in place to be able to respond effectively and efficiently. DHL Global Forwarding Germany is already experienced in handling and transporting temperature-controlled pharmaceutical shipments."



IT

Japan Airlines implements “seamless” CHAMP solution

Japan Airlines has implemented CHAMP Cargosystems’ API Gateway solution to power a new domestic air cargo service. The solution integrates air and land options, and provides an end-to-end experience for customers, according to Japan Airlines.

The airline said it would also be able to offer capacity to its business partners by allowing them to match shipment requests from shippers with available flights.

Our APIs are helping JAL to accelerate digitalisation and create new business streams

API Gateway enables the airline to use a suite of APIs that connect its new domestic service to the airline’s cargo management system ‘Cargospot’, developed and operated by CHAMP. The solution was implemented remotely by CHAMP in just under eight weeks.

“CHAMP has delivered a truly innovative solution,” said Japan Airlines Cargo’s vice president, administration, cargo & mail Yasunari Taniguchi.

“Instead of arranging land and air transportation separately, and manually comparing the different options, the power of CHAMP’s APIs now allows us to connect and provide a seamless proposition to our customers.”

IT

Qatar Airways Cargo makes use of WebCargo

Qatar Airways Cargo is to use digital platform WebCargo to provide forwarders with real-time pricing, capacity and e-bookings. The airline said the platform offered “critical agility” as supply chains contend with the impact and disruption caused by the reaction to Covid-19.

Rollout began with France, Germany, Italy, the Netherlands, South Africa and Spain in early February.

A discount scheme will be put in place at launch, Qatar Airways Cargo said, resulting in an average saving of US\$0.06/kg for the first 20,000 shipments booked via the platform in these countries. Other promotions will

be implemented as the year progresses, the airline noted. “We are pleased to partner with WebCargo to provide true agility and digital connectivity for our customers,” said Qatar Airways’ chief officer cargo Guillaume Halleux.

“We rely on constant innovation and

DIGITALISATION IS A CRUCIAL STEP IN POWERING AGILE SUPPLY CHAINS IN A CHANGING WORLD

digitalisation across all our operations in order to provide our best-in-class customer service. During the past months, we have introduced several digitalisation initiatives

such as online rate distribution, ad hoc rate automation, track and trace and availability via API.

“The future of air cargo is indeed digital and this change will bring in efficiency across the supply chain.”



150,000

dnata has opened a 150,000sqft cargo complex at Manchester Airport in the UK, representing an investment of £30 million



TRANSACTIONS

Amazon takes owned-freighter fleet to eleven

Amazon has acquired seven 767-300s from Delta Air Lines. The aircraft will join the Amazon Air cargo network in 2022. Along with four 767-300s purchased from WestJet in March 2020, they are the first to be directly owned by the company.

“Our goal is to continue delivering for customers across the US in the way that they expect from Amazon, and purchasing our own aircraft is a natural next step toward that goal,” said Amazon Global Air vice president Sarah Rhoads.

“Having a mix of both leased and owned aircraft in our growing fleet allows us to better manage our operations, which in turn helps us to keep pace in meeting our customer promises.”

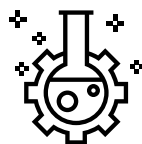
The four aircraft which were purchased from WestJet last year are currently undergoing passenger to cargo conversion and will join Amazon Air’s network this year.

Amazon said it would continue to rely on third-party carriers to operate its new aircraft.



24

AerSale recently started work on the first of 24 owned 757-200 aircraft up for P2F conversion at its Arizona, US MRO facility



1M

IAG Cargo passed the milestone of tying over a million doses of Covid-19 vaccines around the world on 14 January



LOGISTICS

ANA expands cargo capacity in Okinawa as part of hub revamp

All Nippon Airways (ANA) Group is to make increased use of cargo capacity on passenger flights at Naha Airport in Okinawa, Japan.

The company said it was strengthening international logistics operations at the airport and creating a new model for the Okinawa International Aerial Logistics Hub.

ANA said the network expansion was necessary to meet “growing needs around Asia as demand increases from a rise in e-commerce and delivery of other products”.

ANA will sign contracts for the management of bellyhold cargo space

ANA executive vice president and ANA Cargo president Toshiaki Toyama commented: “Global logistic networks and supply chains have significantly changed over the past few years, which is why ANA is working to evolve our approach so we can, in partnership with Okinawa Prefecture, continue to serve emerging needs and meet demand.”

“Building on our longstanding relationship with Okinawa, we look forward to the success that this new network model approach brings to better connect Japan to global markets.”



01

01

Virgin ups capacity

Virgin Atlantic has increased its cargo-only flying capacity by 60 per cent in January as the demand to transport cargo remains strong.

The increase took the airline's cargo-only rotations from 21 up to 33 per week during the month and included daily flights between London and Brussels, offering same day European connections for customers.

Virgin Atlantic Cargo's managing director Dominic Kennedy said: "Demand to transport cargo remains strong. We're delighted to play our part transporting a range of goods across the world, keeping vital global supply chains moving."

02

Vaccine ready

Lufthansa Cargo has implemented a dedicated task force and launched a new product to help with the logistics and transport of Covid-19 vaccines.

The company has announced a premium product designed for vaccine distribution. Called 'Covid-19 Temp Premium', offering "a high level of comprehensive and personalised customer service" along the travel chain.

This will include monitoring of vaccine shipments throughout the process and 24/7 customer support, high priority capacity access, increased bookability as well as fast delivery and comprehensive security standards.

Trend watch.

As 2021 gets off to a rocky start for the aviation industry, **Melissa Moody** takes a look at what companies are doing to prepare for the year ahead

02



03

03

Take-off in China

Vallair has begun the first passenger to freighter conversions of the Airbus A321 in China. The work is being undertaken for Vallair by EFW at the ST Engineering facility in Guangzhou and the aircraft is planned for delivery in Q3 2021 to cargo operator SmartLynx.

Vallair has previously partnered with EFW in Asia on the conversion of its inaugural A321F, which was then delivered to launch operator Qantas Freight in October.

Vallair sees strong potential for the freighter in China's active e-commerce sector, it said.





04

Starting charter

Etihad Airways has expanded its business with the launch of charter and special flight services. Fully customisable, business and leisure guests can choose from a variety of flight options including a dedicated passenger service, cargo only flight or a combined passenger and cargo package.

According to the airline, in 2020 Etihad flew over 500 charters with more than 3.8 million tonnes of cargo transported for the government of Abu Dhabi as part of the national aid programme. Etihad emphasised the “flexibility” of choice charter flights provide.

05

Qatar’s new freighters

Qatar Airways has taken delivery of three new Boeing 777 freighters, bringing its total freighter fleet count to 30.

The airline will introduce these freighters on its long-haul scheduled routes and will also operate them as cargo charters, supporting global trade and the movement of time and temperature sensitive goods.

The cargo carrier has also converted six of its 777-300ERs to cargo-only flights, introducing an additional 137 cubic metres of cargo volume per flight over the lower deck cargo capacity of 156 cubic metres per flight.

06

Back to basics

Jettainer has developed and launched a basic version of its full-service unit load device (ULD) solution.

Called ‘plug&fly’ and taking a more streamlined approach, it uses a fixed pricing model that is guided by the number of ULDs, and allows small and mid-sized airlines to access the benefits of outsourced ULD management “in a way that is quick and easy”.

Jettainer said plug&fly would help airlines optimise their ULD fleet by 15 per cent while making sure that the ULDs are “available anywhere, at any time at transparent fixed prices”.

07

DHL’s step forward

DHL Express has placed an order with Boeing for an additional eight 777 freighters. First deliveries are scheduled for 2022.

DHL Express said the order represented a “further step” in the expansion of its intercontinental air network to meet customer demand in fast growing international express shipping markets.

DHL Express CEO John Pearson said: “E-commerce volume grew by more than 40 per cent in Q4. [It] is an enduring megatrend. This is why we decided to kick off 2021 with this investment in our future.”



Adapt to **S U R V I V E**

Following a year of uncertainty that highlighted the importance of the cargo industry, **Melissa Moody** assesses what trade between Europe and Africa looked like in 2020 and what is in store this year and beyond

53%

Bellyhold cargo capacity fell by 53 per cent in November, “a robust gain” from October which saw a 58.4 per cent decline

Current monthly gains point to cargo volumes returning to 2019 levels around March or April 2021

“The soft growth outcome this month can be attributed to a strong month of November 2019, when the impact of the US-China trade war was starting to wane,” reads the report.

IATA also reported that industry-wide available cargo tonne-kilometres (ACTKs) continued to improve at a modest pace, with the year-on-year decline moving from 22.4 per cent in October to an even 20 per cent in November.

Bellyhold cargo capacity fell by 53 per cent in November, “a robust gain” from October which saw a 58.4 per cent decline. While actual dedicated freighters ACTKs increased slightly, airlines were unable to match the increase in demand for the peak season due to limited fleet size and a number of specific operating issues.

A slow surge

While things are starting to look up for many, some countries are experiencing a slower growth than others. Europe, which has been hit by multiple lockdowns, has been impacted across the continent and this has had a knock-on impact on its trade routes globally, including the Europe-Africa route which was down 15 per cent in November compared to 2019.

According to IATA, European carriers reported a decrease in international demand of 13.7 per cent in November compared to the previous year. This was a 2.7 per cent decline in performance compared to October 2020. Air cargo in the region has been significantly

affected by the resurgence of Covid-19, the report claims, and the impact of lockdowns on consumer demand and business activity. It also found that lack of capacity remained a challenge, as international

capacity also decreased 24.9 per cent in November.

African airlines also saw international demand fall by 1.7 per cent year-on-year in November, after three months of positive year-on-year growth. According to IATA, this has been primarily driven by a soft performance on the Asia-Africa route, which was down 4.5 per cent year-on-year. It also noted that international capacity decreased by 19.4 per cent.

The impact of Covid-19 in real terms on the airlines means that many have had to change the way they operate. In April 2020, like many airlines across the globe, Kenya Airways made the decision to transport cargo on passenger services. The carrier's CEO Allan Kilavuka said that the pandemic created demand for cargo aircraft across the world with the main freighters operating mostly in Europe and the USA, therefore creating a shortage of cargo capacity in Africa.

“We are exploring different options to keep the lights on in the organisation,” Kilavuka notes. “Cargo is one of those areas where we have converted four of our widebody passenger aircraft to cargo aircraft. We are also looking at narrowbody aircraft for shorter missions across Africa.”

The airline's focus on cargo looks set to continue, with the announcement in February 2021 that the Kenya Civil Aviation Authority had approved its request to convert some of its large passenger aircraft into freighters, the first being a Boeing 787 Dreamliner. This will see the airline increase the

A challenging year has left the air cargo market in somewhat of a flux. After a deep decline in April 2020, numbers steadily increased until the International Air Transport Association (IATA) reported in its November air cargo analysis that the recovery in ‘headline’ year-on-year growth had stalled.

Industry-wide cargo-tonne-kilometres (CTKs) fell by 6.6 per cent year-on-year in November 2020, according to the report. The growth performance was “broadly unchanged” compared to October which had a 6.2 per cent decline, representing the first month without improvement since April 2020.



Left and below: Kenya Airways has converted four of its widebody passenger aircraft to cargo aircraft in the wake of the pandemic

available capacity at the Jomo Kenyatta International Airport by over 100 tonnes, a boost for exporters.

The airline said that the move would help it to use its 787s for long haul cargo services between Africa and other continents and also carry high volumes.

Chartering a solution

Another solution has been the use of charters to transport cargo across trade routes. In response to the fluctuating market, Perishable Movement Ltd (PML) made the decision to charter its own freight flights in an effort to maintain the supply of fresh produce from Africa during the pandemic and post-Brexit.

Working with Kenya Airways, the specialist perishable goods transporter has chartered a 787 Dreamliner to fly from Nairobi to London Heathrow twice a week. The flights will be able to carry 36 tonnes of cargo and, with planned modifications, eventually 42 tonnes.

“Our decision last year to charter our own flight out of Nairobi represented an initiative designed to improve the supply of fresh produce during the pandemic and post-Brexit,” says PML’s managing director Mike Parr.

The move comes hot on the heels of the company setting up a dedicated in-house charter air freight service to cater for the increasing demand for the transfer of perishable goods by air. Parr says the pandemic has resulted in cargo numbers going up due to the lack of passenger aircraft, and that this is the best solution for the transfer of perishable goods.

Shipments have mainly focused around fresh produce, such as mange tout, sugar snap peas, fine beans and flowers, but PML has also been involved in transporting PPE. The timings of the flights mean that it is able to deliver fresh produce into the UK on the same day and maintain the quality and shelf life of the fresh produce consignment.

The impact of Covid-19 on the airlines means that many have had to change the way they operate

According to PML, demand for these flights has been reasonable but the main challenge of the service is its price. “Fuel and running costs for this mode of transport are naturally much higher than those associated with shipping,” Parr explains. “Added to this is the fact that the global demand for PPE, primarily out of China, has meant that charters are quickly being filled enabling the airlines to charge a premium price for space.”

However, the impact of Covid-19 and Brexit has created extra hurdles, says Parr. “These are undoubtedly difficult times, but PML has continued to operate throughout the pandemic,” he adds.

“The situation could have been made a whole lot easier if the UK government, customs, plant health and HMI (Horticultural Marketing Inspectorate) had not been so intent on creating so many bureaucratic hurdles which severely impede our ability to transfer goods seamlessly. All of the current red tape is leading to a shortage of fresh produce on the supermarket shelves – and the government must be held accountable for this.”

A future after Covid

As vaccines are now being distributed globally, questions about the air cargo landscape and its routes are among the many being asked. Although there has been a sharp rise in demand in

cargo, decimated passenger numbers mean some airlines and airports are having to try and balance the books. Parr believes there is scope for improved collaboration between government and

industry. “We could prepare for the future far better if the government would listen to the experts who are actually working in the field,” he says. “With UK ports being given in the region of £200 million to ensure their survival, it is staggering to note that currently no such funding is being made available to airports.”

Like Kenya Airways, more airlines may look to convert further aircraft whilst passenger flights remain grounded for the foreseeable future. But the situation is not all negative. IATA believes a “robust rebound” in economic activity is coming and suggests there is pent-up demand for air cargo, as has already been the case in recent months.

While cargo capacity remains insufficient, this translates into elevated load factors and yields, which is expected to continue through to February and Valentine’s Day, a significant e-commerce event for the cargo industry. With this in mind, the association predicts that current monthly gains point to cargo volumes returning to 2019 levels around March or April 2021. The end, potentially, is in sight. **©**



CHAPTER 2

REWILD THE PLANET



Because WeQare,
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Qatar Airways Cargo is committed to preserving our legacy for the next generation. Ecosystems cannot exist without wildlife, and humanity cannot exist without ecosystems. This is why Qatar Airways Cargo brings wild animals back home, free of charge.

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QATAR  | **CARGO**
AIRWAYS القطرية

KEEPING UP WITH CHANGING REGULATIONS

Web Manuals' chief revenue officer and director of operations EMEA **Paul Sandström** assesses new regulations brought about by Covid-19, Brexit and other factors

This year is set to be much the same as 2020, with ongoing turmoil for the aviation community. The Covid-19 pandemic caused global flight groundings and, as I write this in early 2021, further travel restrictions and border closures are in place. As the continued disruption put financial and operational pressure on airlines and their partners, regulators implemented measures to support operators through the crisis.

HOW HAS AIRLINE CARGO BEEN AFFECTED SO FAR?

Air cargo, a crucial part of the supply chain, has been central to delivering medicines, medical equipment and other vital goods throughout the pandemic. Utilising cargo capacity onboard airlines was an important component in this, making the most of severely reduced passenger demand.

As a result, the International Air Transport Association (IATA) has been collaborating with the International Civil Aviation Organization (ICAO) and other regulatory bodies to ensure air cargo supply chains remain open.

These organisations are working with the World Customs Organisation (WCO) to minimise border blockages for humanitarian goods. Country-specific information is online, with customs information and actions to be taken. In addition, the European Commission has issued guidelines on facilitating air cargo operation during Covid-19.



Digitalisation offers a way of managing concurrent changes, in an efficient and time-saving manner, freeing up the time of compliance managers

PAUL SANDSTRÖM

The UK also left the European Union and, as a result, withdrew from the European Aviation Safety Agency (EASA). That meant the UK's responsibility for safety regulation and new aircraft type certification transitioned to the Civil Aviation Authority (CAA). With that

came more disruption and an overhaul of regulatory documentation for those flying into and out of the country, with many operators now having to ensure they comply and have the correct paperwork for more than one aviation authority.

While having access to current guidelines and constraints is incredibly helpful in enabling airline cargo operators to understand the changing requirements, these documents need to be managed in a way that ensures compliance and allows the right people easy access and to take action without delay.

Of course, it isn't just cargo that has been impacted by regulation changes; other aviation sectors have also faced temporary and adapted regulations in 2020. For example, the use of commercial drones grew massively during the pandemic as they were used to transport food, medicine and essential goods to those unable to leave their homes.

To manage the regulation of drones, the Federal Aviation Authority (FAA) awarded hundreds of Part 107 waivers to drone operators and organisations in the first quarter of 2020. For a limited time, these waivers allowed companies to operate drones outside of the usual rules, such as flying outside of daylight, above 400ft or without three miles of weather visibility.

Since 31 December 2020, the Commission Implementing Regulation (EU) 2019/947 – also known as the new EASA drone regulation – came into effect. This and other related rules form a larger, inclusive regulatory framework to ensure safe, secure and sustainable drone integration across Europe.

CHANGES FOR 2021

So, what further regulation revisions can air cargo operators expect in 2021?

Cargo operations manuals have been revisited for 2021, with revisions to the ULD regulations (ULDR), IATA Cargo Handling Manual (ICHM) – which features requirements for maintaining distance, disinfecting GSE and using drop zones (cargo on ramp) to avoid cross-contamination – and a new IATA manual on how to prepare, ship and handle human remains known as the Compassionate Transportation Manual (CTM).

Amongst additional changes involving the Live Animals Regulations (LAR), Perishable Cargo Regulations (PCR) and Temperature Control Regulations (TCR), the Dangerous Goods Regulations (DGR) has seen updates take effect from 1 January 2021 relating to the implementation of competency-based training and assessment for dangerous goods and the addition of new special provisions. The Lithium Battery Shipping Guidelines (LBSG) have been amended to require the approval of the authority of the state of the operator in addition to the authority of the state of origin.

Finally, the Airport Handling Manual (AHM) and IATA Ground Operations Manual (IGOM) have both seen a number of changes as a result of Covid-19, including those in relation to new training requirements, the transportation of cargo in the cabin and aircraft cleaning.

With so many new requirements in 2021, which will all need to be cross-referenced and relayed to all of those it impacts with mandatory training managed and logged, compliance managers will have a significant job on their hands. This is especially true if they are currently operating with reduced resources or time constraints and have to deal with the possibility of regulations regularly changing throughout the year as we adapt to the new aviation environment.



Above: Web Manuals' cloud-based service allows easy digitisation of manuals

HOW TO MANAGE THESE CHANGES EFFECTIVELY

Due to many factors – Covid-19 and Brexit included – the regulations 'jungle' is getting thicker and constantly evolving. Managing the increased complexity of multiple regulators whilst staying diligent and efficient – especially if you are used to only monitoring one – is a challenge. So, how can these changes be effectively managed, especially when the future still has so many unknowns?

I have always been an advocate for going digital. As we witnessed during 2020, working remotely and conducting business virtually has its benefits. Time has been saved and people have been using a range of digital tools to communicate, collaborate and organise. When it comes to regulatory documentation and aviation manuals, digitising means that all the information you need is in one place and can be instantly updated and shared around an organisation, no matter where you are in the world.

Regulation changes are automatically updated within the digital regulation libraries. With a digital compliance monitoring process, there is no longer a need to copy and paste changed regulations

into Excel sheets. A digital compliance monitoring process also enables operators to know which operational processes have been affected by regulatory changes.

This reduces the administrative burden of comparing regulation versions and updates, while at the same time reducing the risk of human error from inputting information. Even if staff levels are reduced, an automatic, efficient digital system allows businesses to stay abreast of regulations and keep crews updated.

As our community continues to face an uncertain and complex future, protecting the safety of staff, crew and customers is paramount. With airline cargo playing such an important role in supporting millions of people worldwide through the transportation of medicines, food and other essential items, it is important to remain on top of any new rules to ensure safety and the continuation of the industry through this tough time.

Digitalisation offers a way of managing the concurrent changes, in an efficient and time-saving manner, freeing up the time of compliance managers to focus on additional business growth activities crucial to continuing to support those who need deliveries worldwide. ©

Delivering HOPE

Etihad Cargo's managing director, cargo & logistics
Martin Drew explains how collaboration in the
UAE through the Hope Consortium is facilitating
vaccine distribution across the world

Although the pandemic is far from over, the development of the Covid-19 vaccine represents a light at the end of the tunnel. Now, we face the major challenge of successfully and rapidly distributing the vaccine around the world to enable life to return to normal.

With two thirds of the world's human footprint within a six-hour flight of Abu Dhabi, it made sense for the UAE capital to rise to the challenge of vaccine distribution and, in November 2020, the Abu Dhabi Department of Health did so by spearheading the launch of the Hope Consortium.

Comprising leading Abu Dhabi and global entities, the Hope Consortium represents a complete supply chain solution to address vaccine transport, demand planning, sourcing, training, and digital technology infrastructure, and facilitate vaccine availability across the world.

While assuring vaccine supply to the domestic market, the Hope Consortium offers international governments,

The logistics and air cargo sectors have a crucial role in what is hopefully the final fight against the virus

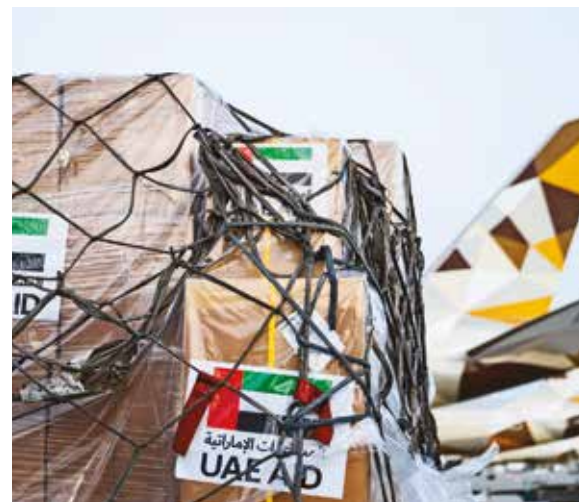
non-governmental organisations and vaccine suppliers a cohesive solution across every supply chain step – from air freight, regional storage and temperature monitoring, to inventory management, cold and ultra-cold container solution, regulatory clearance, and healthcare and pharma quality assurance.

Overcoming challenges

One of the difficulties of Covid-19 vaccine transportation is its temperature-sensitivity, as it has to be kept at around -70°C. Our IATA CEIV Pharma-certified healthcare service PharmaLife enables us to safely transport the vaccine by providing temperature-controlled cargo hold and storage facilities, pre-cooled thermo blankets for protection to and from the aircraft and specialised teams of ground handlers to ensure the quick and careful loading of the vaccine on and off the aircraft.

The other, perhaps more obvious, obstacle is the sheer demand for vaccine doses. In our lifetime, we have never experienced such an urgent global need for a vaccine. For

life to return to normal, all 7 billion+ people in the world need to have access to this product, which puts extreme pressure on the logistics industry. The Hope Consortium was launched with the need for collaboration in mind and, with the support of the rest of its partners,



All images: The Hope Consortium represents a complete supply chain solution to address vaccine transport, demand planning, sourcing, training, and digital technology infrastructure, and facilitate vaccine availability across the world



“The shared goal of the Hope Consortium is helping people restart their lives”

MARTIN DREW

we are well positioned to draw on our strong partnerships and global network to provide access to this potentially life-saving vaccine.

As the consortium's air cargo partner, we are leveraging our pharmaceutical logistics expertise to overcome the challenges of safely transporting the vaccine across our network. In November, with the support of the Hope Consortium, we successfully transported five million vaccines and a further two million doses in the first week of December 2020, which are already being used in Abu Dhabi's official vaccination programme.

Private-public sector collaboration

The transportation of those vaccine doses was a significant milestone for the Hope Consortium, Abu Dhabi and the wider logistics industry. The operation illustrated the importance of



-70°C

One of the difficulties of Covid-19 vaccine transportation is its temperature-sensitivity, as it has to be kept at around -70°C

collaboration between private-public sector partners for delivering cohesive solutions to a global logistics challenge.

To play our part in the process, we chartered seven Boeing 777-300ER aircraft to fly the vaccines to Abu Dhabi International Airport, before using our road fleet to transfer the shipment to Abu Dhabi Ports Group's KIZAD (Khalifa Industrial Zone Abu Dhabi) for holding in a purpose-built cool storage warehouse.

Covid-19 has challenged every industry to adapt this past year and now the logistics and air cargo sectors have a crucial role to play in what is hopefully the final fight against the virus.

Partnering and collaborating with global transport and logistics companies is the key to rapidly providing as many people as possible with access to the vaccine, and we are proud to be working with the Hope Consortium members to achieve the shared goal of helping people restart their lives. ©

Seeing the light

The global rollout of Covid-19 vaccines is the means to the end of the pandemic, with air cargo playing a vital part. **Jason Holland** gathers some industry success stories and assesses the path ahead



In the dark of night, a freighter aircraft touches down at the international airport, with ground crew ready to unload its special cargo as quickly – but as safely and efficiently – as possible. A camera operator is also there to eagerly film events and ultimately share the good news: a shipment of Covid-19 vaccines has been transported successfully.

It's a scene that is becoming increasingly common all around the world – perhaps with fewer cameras as time goes by – but one which is played out as the result of the efforts of a range of people, companies and organisations. And of course, the chain of events does not stop there; the vaccines must make their way to patients.

Vaccines have been described as 'the only way out' of the Covid-19 pandemic. Media reports have also been quick to play up the 'miracle' nature of the speedy creation of the various vaccines that are being rolled out in countries across the globe. While perhaps not a 'miracle' in the strictest sense of the word, the way the air cargo industry as a whole has risen to the ongoing challenge of helping to distribute Covid-19 vaccines is an astounding feat of collaboration, co-ordination and communication.

"The air cargo industry has an integral role to play in the distribution of the vaccines – it is an industry that can offer vital speed of transportation and sophisticated cool chain technologies, manned by trained teams who are experienced in handling this kind of cargo," says IAG Cargo's head of sales Darren Peek. "To date, the industry has

shown its professionalism and expertise, and I think we can all take pride in the role air cargo is playing in supporting the fight against Covid-19."

Sanjiv Gupta, CEO of SpiceJet cargo division SpiceXpress, notes that while the pharmaceutical industry was already transporting cold chain cargo and vaccinations before Covid-19, the ongoing pandemic "has brought about a better sense of recognition of the supply chain effort, and has highlighted its importance".

"The industry stakeholders need to work with a collaborative strategy," he says. "The entire Covid-19 vaccination effort cannot be undertaken without all stakeholders putting in their bit. Government agencies, ministries, handling agencies, freight forwarders, carriers and custodians have to work even more closely, even if it means

"We see it as our purpose and responsibility to use our network and expertise in this time of need"

working closely with corporate competitors to deliver the vaccination to the final point of inoculation."

New products and services have been imagined, created and are now in operation. Among the many examples, Cathay Pacific Cargo has developed a "next-generation track-and-trace system" called 'Ultra Track'; Lufthansa Cargo has launched a premium product offering vaccine shipment monitoring called 'Covid-19 Temp Premium'; and UPS has enhanced its dry ice production capabilities and launched new mobile freezer storage units.

SpiceXpress has launched its own cold chain product called 'Spice Pharma

Pro', according to Gupta. The intent is to provide a seamless end-to-end logistics solution to manufacturers and secondary distributors. "We have partnered with some of the leading cold chain logistics companies in India to create a sustainable cold chain network," he says. "Our validated cold chain boxes lined with phase-change material (PCM) and vacuum-insulated panels ensure zero temperature excursions. Our modified data loggers and real-time tracking-portal 'SpiceSense' demonstrate our IT readiness."

Peli BioThermal is another company to have innovated in response to the Covid-19 challenge. It has launched a range of deep frozen temperature controlled packaging options with temperature ranges of -80°C to -20°C.

Giving an update on the company's progress, director of worldwide

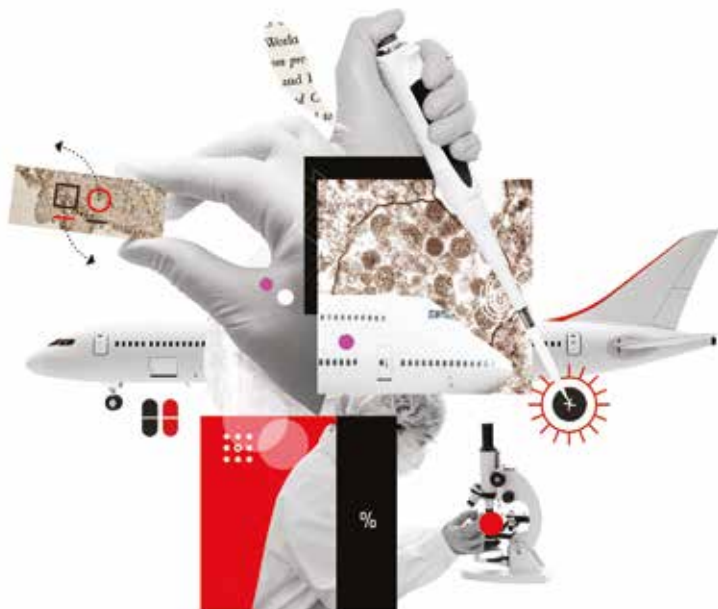
marketing Adam Tetz says: "We've adapted several of our PCM shippers to work well with dry ice as a coolant for extended durations of several days to allow shipments of the

vaccines around the world.

"We've also added two payload sizes available for our 'Deep Freeze' dry ice shipper. We are seeing a huge demand for all sizes, configurations and temperature ranges for our shippers. This demand is all around the world from pharmaceutical manufacturers, university hospitals and small couriers. It's a universal problem that all stakeholders are seeking to resolve."

Ramping up operations

Although the air cargo industry is already playing a crucial role in Covid-19 vaccine distribution, the scale of operations globally is not quite at the level many



“To date, the vaccines’ global airfreight tonnage is still fairly limited. Due to the time sensitivity of the initial shipments, the integrators are playing an important role in the air transportation and distribution.”

First steps

There have been plenty of success stories in Covid-19 vaccine distribution across the industry so far, though. As one of the world’s largest delivery services companies, FedEx is well positioned to “be a part of this historic moment”, says Joe Stephens, FedEx Express senior vice president of global engineering and business transformation.

“FedEx has a long history of supporting relief efforts,” he notes. “We see it as our purpose and responsibility to use our network and expertise during this time of global need. We spent months planning and preparing to handle the transportation of vaccines.

“On 14 December, at 5.53am E/T, a FedEx Express courier made the first US vaccine delivery to Boston Medical Center in Boston, Massachusetts. Our couriers throughout the country worked hand in hand leading to on-time deliveries across 28 states, Washington, DC and Puerto Rico that first day.”

Delivery of Pfizer and Moderna vaccines is now being ramped up. “Our goal is to move Covid-19 vaccine shipments as safely and quickly as possible,” Stephens says. “We are prepared to ship Covid-19 vaccines to more than 220 countries and territories for as long as is necessary to help eradicate Covid-19. We are working with our healthcare customers, as well as governments

and non-governmental organisations on plans to distribute vaccines as they are approved and ready for shipment.”

Elsewhere in the US, one of Delta Cargo’s earliest successful vaccine transportations was from Detroit to Atlanta and San Francisco. The journey was monitored in Delta’s ‘Vaccine Watch Tower’, which enables full end-to-end visibility for all vaccine shipments. With 24/7 centralised monitoring and customer reporting, the tower works closely with flight operations to ensure the safe and secure transportation of the vaccines at the required temperature.

Rob Walpole, Delta Cargo’s vice-president, says: “Within three hours

predicted, or still might be needed in the days ahead. Some companies are reporting that they are not yet seeing high levels of requests for vaccine services.

“As of yet, vaccine transports are not affecting air cargo much,” says DoKaSch’s CEO Andreas Seitz. “Since the availability of vaccines is still limited, the amounts transported at the moment are rather low. Furthermore, most vaccines are produced on a regional level and are distributed by trucks. However, that is most likely to change with more vaccines coming to the market.”

Volga-Dnepr Group’s marketing director Fedor Novikov largely concurs with that assessment, stating that the biggest operational need is still to come. “With massive vaccination starting in some countries, we have seen that the governments mostly rely on regional distribution with the land operators,” he explains. “The international global distribution of large batches is expected to start closer to Q2.”

The company transported its first CanSino vaccines in November and is working under delivery options for that vaccine, the Sputnik V and others. Novikov reports that Volga-Dnepr has seen increased demand for “peripheral cargo” – vials, injection syringes, equipment for mass vaccine production, and so on – to “guarantee stable and uninterrupted vaccine manufacturing”.

Pharma.Aero secretary general Frank Van Gelder says the global delivery of Covid-19 vaccines is subject to several factors “including but not restricted to speed of approval by the local health authorities and production capacity”.

“The first vaccines to be distributed today are the ones from Pfizer BioNTech, AstraZeneca and Moderna,” he notes.

“We have seen several air cargo hubs establishing local task forces in advocating open communication”



Illustration: Phil Couzens



Clockwise from left:
Delta's first Covid-19 vaccine shipment; IAG Cargo had flown over a million doses globally by 14 January; Volga-Dnepr transported its first CanSino vaccines at the end of November



19M

In January, SpiceXpress supported India's government in transporting vaccines to 24 locations across the country – equating to 19 million vaccine doses

of being engaged, Delta Cargo had the vaccines in hand and on their way. Our successful Covid-19 vaccine shipments prove what we've known for a long time: that we're ready and able to take on more in the all-hands-on-deck domestic and global distribution effort of this life-saving vaccine."

Across the border, Air Canada Cargo conducted an exhaustive review of its operations, procedures, training and facilities as well as third-party agreements in 2020 in preparation for transporting the Covid-19 vaccines.

"We also worked closely with our customers and other supply chain stakeholders to understand their requirements," reports director, cargo transformation Janet Wallace.

"We achieved IATA's CEIV Pharma certification in July. By December we started seeing bookings for shipments of vaccines and consumables into Canada. We handle all shipments with utmost care and have stringent procedures in place. There is no room for error here, all shipments are successful."

A story recently shared by one of Air Canada Cargo's operations managers

in Canada stands out, though. "His wife is a frontline health worker and she recently received her first dose of the vaccine," Wallace relays. "That dose came from a shipment that had been transported by Air Canada Cargo, and received by her husband and his team at one of our facilities. In my books, that is a success story. Air Canada Cargo has a tremendous contribution to make, and so close to home."

In Asia, Singapore Airlines has also made strong progress, with its geographical location, network connectivity and pharmaceutical handling capabilities at Singapore Changi positioning it as a

"The Covid-19 vaccination effort cannot be undertaken without all stakeholders playing their part"

key transit hub for the transportation and distribution of pharmaceuticals, according to a spokesperson.

"Amid rapid developments in the testing and production of Covid-19 vaccines globally, Singapore Airlines has made preparations to meet one of the largest and most important logistical challenges in recent history – the safe and effective distribution of these vaccines around the world," the spokesperson comments.

"[We have] been actively engaging various stakeholders across the supply chain and in pharmaceutical export markets to ensure [we are] well-positioned to transport the vaccines with speed and reliability. As such, Singapore Airlines delivered the first shipment of Pfizer-BioNTech Covid-19



vaccines to Singapore on 21 December 2020 on board one of its Boeing 747-400 freighters. This was also the first Pfizer-BioNTech vaccine shipment to be delivered to a country in Asia."

In India, SpiceXpress has been involved in the transportation of vaccines manufactured by Serum Institute and Bharat Biotech. In January, SpiceXpress supported India's government in transporting vaccines to 24 locations across the country – equating to 19 million vaccine doses. "We also had the opportunity to be a part of the movement of the first international consignment from India to Bhutan," reports Gupta.

LAG Cargo's Peek proudly notes that his company has already transported over a million doses of the Covid-19 vaccines across the world using its specialist 'Constant Climate' service, "alongside transporting medical equipment, other types of vaccines, Covid-19 testing kits and PPE, as well as continuing to transport everyday products the world needs daily".

He says: "Through our 'Constant Climate' network, consisting of three main hubs at London Heathrow, Madrid Barajas and Dublin airports, we have already successfully delivered Covid-19 vaccines to many parts of the world including the Canary Islands, the Balearic Islands, Ireland and the Americas, and we delivered Melilla's first doses on an Air Nostrum from Malaga."

The challenge ahead

Much of the hard work still remains to be done, and there are many challenges to overcome. "It is expected that more than 50 per cent of vaccines will be air freighted once the global distribution



Clockwise from far left: Air Canada Cargo made sure in 2020 it was prepared to safely transport Covid-19 vaccines; FedEx moved the first US shipments of the Pfizer-BioNTech vaccine through its network on 13 December; a shipment of Covid-19 vaccines arrives at Changi, courtesy of Singapore Airlines Cargo (image: Ministry of Communications and Information)

began preparing for a potential vaccine last summer, in anticipation that a Covid-19 vaccine would need to be kept at an ultra-low temperature,” reports IAG Cargo’s Peek. “They evaluated the whole process, importantly looking at how much dry ice might be needed. Thanks to this preparation, and our existing world-leading cool chain facilities, IAG Cargo responded quickly to the demand to transport the vaccines.”

Peli BioThermal’s Tetz also sees future roadblocks to overcome. “The real challenges will come as more vaccines are approved for emergency use and the volume of vaccine production ramps up for them all,” he says. “Then, all aspects of cold chain logistics to support vaccine distribution will be more stressed than they are today.”

Maintaining co-operation is normally a difficult challenge but is perhaps simpler now given what is at stake.

Van Gelder says Pharma.Aero and TIACA (The International Air Cargo Association), through Project Sunrays [which is designed to help the air cargo industry get ready for Covid-19 vaccine distribution], “earlier called for the industry to start advance preparations, have open

communication, and adopt a community collaboration approach”.

“Air cargo will play a critical role in transporting these life-saving products around the globe, supporting national and international objectives to achieve global immunity,” he concludes. “In ensuring that the shipments move in a fast, secure, reliable, transparent and compliant fashion, the industry has risen to the challenge at both local and global levels.

“We have seen several air cargo hubs, including members of Project Sunrays, establishing local task forces in advocating open communication and preparing their air cargo community for the logistical mission. Collaborative and co-ordinated solutions on air cargo community level will provide the optimised approach to achieving the required logistical success.” ©

50%

It is expected that more than 50 per cent of vaccines will be air freighted once the global distribution starts with massive vaccination across the globe, says Volga-Dnepr Group’s Fedor Novikov

starts with massive vaccination across the globe,” says Volga-Dnepr Group’s Novikov.

“Stakeholders [are] getting ready and ramping up their capabilities. The last 3-4 months have been devoted to this hot topic and the industry understands the scale of responsibility it will be charged with in terms of uninterrupted vaccines supply chains. From our side, we have strengthened our positions and service and are also taking additional steps through a 360-degree approach to embrace all the areas of our business.”

He sees the biggest challenge as being “the lack of dedicated infrastructure in some of the airports with no cargo storage facilities, certified and experienced personnel or special equipment to guarantee stable onload/offload of temperature containers”.

Ensuring the consistent handling temperature of the shipment remains a formidable task, according to Singapore Airlines. “We need to ensure it is not exposed to outside heat, especially in Singapore where the temperature on the tarmac can rise to 40°C. We must also ensure that our handling agents abide by the stringent handling processes to reduce

the possibility of temperature excursion. We have procedures in place to ensure temperature integrity of the product.”

DoKaSch’s Seitz thinks that most of the upcoming (and existing) vaccines will be transported and stored in the range between 2-8 °C. “Therefore, the need for transport solutions will clearly increase in 2021 and it will not stop there,” he explains. “This is where our ‘Opticoolers’ [containers] will become relevant, since they are designed for that temperature range. Covid-19 will not simply disappear after one successful vaccine campaign. Instead, we will have to learn to live with it for quite some time.

“Covid-19 will not disappear after one successful vaccine campaign. We will have to learn to live with it”

“The air cargo industry takes an important role in this. First, it will support the initial vaccine distribution, which started recently and is going to take up most of 2021. However, it will not be enough. It is highly likely that we will need follow-up vaccine campaigns and the transport of suited medication. During all this time, air cargo is going to support the transport around the world and make sure that everyone has access to the vaccines.

“Solutions like ‘freighters’ and the quick and uncomplicated co-operation of every important stakeholder showed how resilient and flexible the air cargo industry is. In turn, I am sure that the upcoming vaccine transports will be handled well, no matter the scale.”

The ability to anticipate problems and prepare accordingly will be a vital skill, as experience has shown. “Our teams

AVIATION

Business News



Exclusive features, industry interviews, expert opinion and all the latest news from the cabin, cargo, MRO and low cost & regional airline industry



Speedier SCREENING

Smiths Detection global director aviation

Richard Thompson assesses the benefits of adopting wide area networks and a risk-based screening approach

Air cargo carriers and airports alike are constantly having to balance increasing costs, tightening global regulation and greater security measures in the face of shifting and emerging security threats. Technologies which provide operational savings can, therefore, support the sector by managing these pressures.

As air cargo increases, screening – which must take place – can seem to slow the process down. Yet, there is huge potential to boost the operational efficiency of this process through the adoption of remote screening through a wide area network (WAN).

WANs facilitate the real-time sharing of images between sites, countries and even continents – and allow for screening image analysis to be conducted by one centralised team.

The benefits of WANs are particularly evident if a freight forwarder or air cargo carrier has a hub, which sees consistently high volumes of cargo, coupled with

regional sites that see varying volumes. If the hub houses the centralised screening site, regional facilities do not have to have staff onsite round the clock, enabling greater resource prioritisation.

On a country-to-country or even continental level, image sharing via WANs would enable more sophisticated data analysis across the global air cargo network to significantly boost security outcomes.

The advantages of adopting a remote WAN screening model are heightened when paired with a risk-based screening approach. For air cargo companies looking to boost efficiency across their supply chain, risk-based screening (RBS) holds great potential.

Risk-based screening enables differentiated screening based on

risk and sensitivity levels of certain shipments. Data such as the shipper, origin, destination as well as the weight, size and density of cargo allows for the creation of bespoke risk scores so that air cargo operators can prioritise operator and screening resource on shipments that pose a higher risk.

Risk scores would typically be generated through the shipping manifest, which acts as a unique identifier, and the risk assessment criteria based on the key data. For example, shipments from Africa may pose a higher risk of illegal animal trade due to the issue of rhino horn smuggling; or indeed more stringent screening for agricultural produce may be required for shipments destined for certain countries where the agricultural threats to bio-diversity

are deemed greater, for example in Chile, Australia, New Zealand and California.

The concept of ‘one stop security’ for global freighters can be enabled using WAN image sharing in conjunction with risk-

“The wide area network, risk-based screening approach may still be considered a futuristic concept, but this is not down to technological capability”

based screening. Departure airports could share screening and risk-based data with transfer airports, allowing for the rescreening requirement at the transfer airport to be determined by risk profile.

The wide area network, risk-based approach to screening may still be considered a futuristic concept for the air cargo sector. However, this is not down to technological capability.

The key challenge is really the lack of co-operation between different authorities to make data sharing a reality. Close sector collaboration is no mean feat – but what we can be sure of is that it will unlock significant operational benefits, whilst paving the way to a more secure air cargo network. ©

Below: Wide area networks can be used to narrow the efficiency gap across the cargo supply chain



ATR

ATR delivered its first production freighter aircraft to launch customer FedEx in December. Here, head of leasing, freighter and asset management **Guillaume Huertas** discusses the ATR 72-600F and other topics

Why is it the right time to launch a purpose-built regional freighter?

When we launched the programme with FedEx, there was already a clear understanding that certain features required by logistics companies could only be achieved with a purpose-built aircraft. E-commerce has been booming and it has heralded an age where integrators must get as close as possible to the delivery point, as quickly as possible. This is where regional freighters excel, as they reach smaller airports, remote areas and isolated communities in a cost-efficient way.

Somewhat inescapably, the Covid-19 pandemic has shown us how important regional connectivity is to communities and economies all over the world. Our aircraft played key roles in delivering medical supplies and repatriations; we are now involved in vaccine delivery. We are also sure that our aircraft have a key role to play in the economic recovery linking communities and economies as we gradually return to normal.

What factors are driving change in the regional cargo market?

Cargo capacity has fallen 25 per cent in recent months due to the grounding of passenger aircraft and therefore the reduction of belly freight capacity. In parallel, we have seen an increase in demand.

ATR proposes three solutions to this increased need for more cargo capacity: a conversion of our aircraft from passenger to freighters; a quick and temporary conversion kit that can absorb extra demand; and a purpose-built freighter. With about 130 full freighter



Demand is strong and with the ATR 72-600F, we see potential for 100 aircraft over the next 20 years, in addition to the 30 that FedEx has already ordered

GUILLAUME HUERTAS

ATRs in operation, representing a third of the regional cargo market, ATRs are already the preferred aircraft for cargo conversions, due to the superior efficiency of our aircraft compared with other currently available turboprops.

What are the main benefits of the ATR 72-600F?

This is an aircraft that is truly born to be a freighter, so it is packed full of innovations that will make a big difference to cargo operators: first and foremost, the very large cargo door – which is nearly three metres wide – that can accommodate standard LD3 containers and pallets; an upper hinged back door to optimise loading; and a clean, windowless, fuselage for easier maintenance. It also features a reinforced floor, to carry heavier items.

Another example is the improvements in lighting. With most cargo operations happening at night we increased the interior and exterior lighting to over 90 lux, which will make the lives of the ground handlers easier and more comfortable. The ATR 72-600F's modern glass cockpit will also be very attractive to operators as it features the very latest avionics, which can be upgraded, remaining at the cutting-edge when further innovations become available.

How important were environmental and sustainability considerations in creating the aircraft?

Climate change remains an imminent threat and sustainability has never been more important. Governments, airlines, companies, integrators and the public are going to be increasingly concerned with the environmental impact of the aviation industry and it is likely that the cargo industry will be no different. It is not difficult to imagine a world where consumers make purchasing choices based on the carbon footprint of the delivery amongst other factors.

Right: FedEx says the ATR 72-600F will help it grow its global footprint and serve locations not accessible by its larger jet fleet
Below: The turboprop offers 75m³ freight capacity, and its fuselage is a clean design that has been optimised for cargo



We are fortunate in the regard that our aircraft is already an eco-responsible benchmark in the aviation industry. ATR aircraft burn 40 per cent less fuel and therefore emit 40 per cent less CO₂ than similarly sized regional jets. We also enjoy a significant fuel burn advantage over competing turboprops. Right from the start, there is a sustainability advantage built into the new freighter's DNA.

What was the significance of the first delivery to FedEx Express?

It was very important. We are very proud that despite the global pandemic we were able to deliver the first ATR 72-600F to a global leader like FedEx Express. When we consider the context of the year, this milestone of seeing our aircraft family get a little bigger was something positive for everyone involved with the company.

Delivering to the largest express transportation company in the world shows the kind of impact that this aircraft will have in the regional freighter market. FedEx Express demand the highest quality, and their business plan is designed to ensure their responsiveness to their customers keeps them at the top of the market. The fact they have made the ATR 72-600F an important part of their fleet modernisation plan is a massive validation for this first ever purpose-built ATR freighter.

What is the market potential for the programme?

Globally, we see a potential market for about 460 turboprop freighters over the next 20 years. ATR is already the leader in the regional cargo segment with about 130 converted ATR aircraft representing about a third of the market. The annual conversion rate for second-hand ATR aircraft has steadily increased from 10 up to around 15.

Demand is strong and with the ATR 72-600F, we see potential for 100 aircraft over the next 20 years, in addition to the 30 FedEx has already ordered. With a total market of 460 aircraft, we expect roughly a third to be new builds. Our rationale shows there are opportunities in developing markets where there are currently few freighters, with the continuing growth of e-commerce and with the importance of last mile delivery.

In which markets do you see the most potential currently?

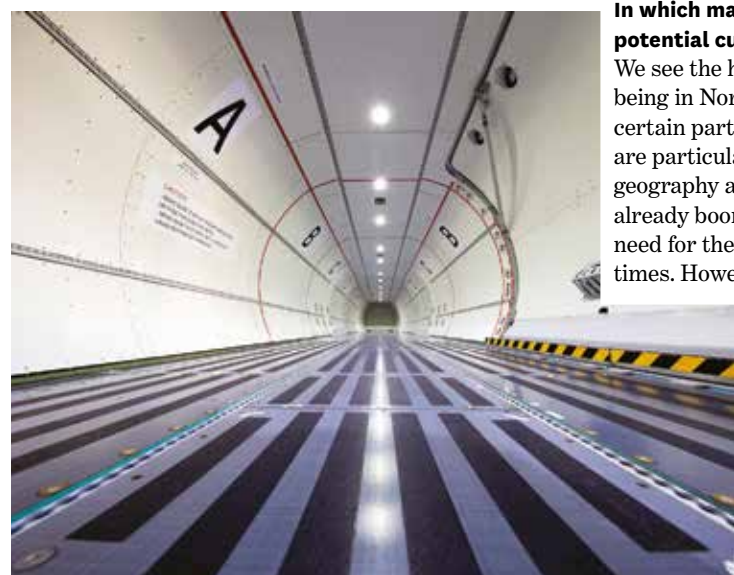
We see the high potential markets as being in North America, Europe and certain parts of Asia, where our aircraft are particularly well adapted to the geography and where e-commerce is already booming. They will have the most need for the quickest possible delivery times. However, it is worth noting that

the freighter could also generate interest in developing countries and emerging economies, such as in South America, Africa and other parts of Asia, where it is difficult to envisage alternative land and sea connections. Our aircraft are also particularly well suited to serving islands, so this is another factor which may encourage people to consider an ATR freighter.

How has Covid-19 impacted ATR?

Our priority last year was to ensure the safety of our employees and support our customers. We have developed guidelines for the storage of aircraft and their maintenance, and helped them ensure a sanitised environment for their passengers. Needless to say, the impact is significant and we have had to review our prospects for 2021. The unprecedented crisis we are facing has forced us to review our prospects for the coming years.

To adapt, we have launched an overall plan to reduce costs and right-size the company. However, we will not compromise on the high standards of our services and the availability of parts and components, and we are confident that the increasing interest for more CO₂ efficient aircraft and the aspiration of remote communities to grow and prosper will soon relaunch the sales of our aircraft. The adaptation plan will lead to reductions in ATR's worldwide workforce. Thanks to different measures and agreements negotiated with our social partners, at this stage we have managed to avoid involuntary layoffs. ©



Shifting FOCUS

The narrowbody freighter conversion market has been dominated by Boeing single-aisle jets until now, but A320-family aircraft are expected to be converted in large numbers in the future. **Chris Kjeldaard** reports

Of 2,430 freighters larger than regional aircraft to be delivered by the end of 2039, at least 1,458 will be converted former passenger aircraft, according to the latest *Boeing 2020 World Air Cargo Forecast*. Of that number, 72 per cent (at least 1,050 aircraft) will be single-aisle jets, or ‘narrowbodies’.

Today the narrowbody converted-freighter scene is dominated by the highly capable Boeing 757-200, with hundreds of converted 737-300s, 737-400s and, more recently, 737-800s making up almost the entire remainder of the market. Previous-generation converted single-aisle types such as Boeing 707s and McDonnell Douglas DC-8s have been retired, though a few 727s, 737-200s, DC-9s and a couple of dozen MD-80s remain in service as freighters, largely operating in less-developed countries or in niche markets.

While conversions of ‘Classic’ 737-300s and 737-400s, 757s and MD-80s continue to be performed, the numbers of suitable passenger examples of those types available as feedstock for conversion is running low. In most cases, this is because the aircraft themselves have aged to the point where it is no longer

commercially feasible to pay for them to be converted, because their ageing-aircraft maintenance costs in freighter operation would be too high. In a few cases – particularly for some late-model 757s – the aircraft remain so attractive as passenger jets that their owners want to keep them in service as such.

Robert Convey, senior VP sales and marketing for Aeronautical Engineers, Inc. (AEI), estimates the market will see about another 25 MD-80s being converted – AEI is the only company which holds a supplemental type certificate for MD-80 conversions – and approximately another 30 757s will end up being converted. AEI recently inducted two former Delta Air Lines MD-88s for conversions and has four more in backlog. Last September, AerSale bought 24 late-model, well-looked-after 757-200s stored at its storage facility in Roswell, New Mexico and said it would have most of them converted to freighters at the same airfield, while cannibalising the rest for spares to support the converted aircraft in service.

AEI is one of several companies which hold STCs for freighter conversion of

737-300s and is one of three – along with Pemco and IAI – which hold STCs for 737-400 conversions, offering cargo payloads of up to 18 tonnes. To date, AEI has performed about 25 737-300 conversions but has carried out 130 737-400 conversions, and Convey expects 150 of these to be carried out in all. The overall total of 737-400 conversions worldwide is about 225, he says.

While Pemco holds an STC for a ‘FlexCombi’ 737-700 conversion – for which it has won customers – and is also developing a 737-700 full-freighter conversion, Convey believes the 737-800 “will be the largest converted-aircraft [programme]”. He estimates that up to 1,000 737-800s could be converted over the next 20 years as the highest-selling 737NG model is gradually replaced by 737 MAX variants. “We’re seeing that already,” he says, with AEI expecting to convert about 30 737-800s in 2021 and Boeing – which over the past four years has established a lead in the field, with about 80 converted to date – probably converting a similar number.

IAI has recently joined the list of 737-800-conversion STC holders. As its

programme works up, Convey expects to see 60 to 70 737-800s converted this year and similar numbers being converted in each of at least 2022 and 2023.

Smaller operators may want to stick with the 737-800 as their converted freighter for the foreseeable future

Right: A look inside the lower deck of a converted A321

“In my view, the narrowbody freighter world is a Boeing-built world,” says Convey, mainly because of the 737. In his view, the 737-800 is robust and reliable and can be parked in a corner of a cold airfield throughout the day – converted freighters typically fly much less than passenger aircraft and often at night – and its systems will immediately be fully functional when turned on. Given the 737’s long existing history as a converted freighter and the 737-800’s 23-tonne cargo payload, Convey sees smaller operators in particular wanting to stick with the 737-800 as their converted freighter of choice for the foreseeable future.

The converted A321

Many air cargo industry experts believe the A321 is a very strong candidate for freighter conversion. Although it does not have the same range performance as the 757, nor the 34-tonne structural payload of the big Boeing single-aisle jet, its containerised payload is 15 per cent higher than that of the 757 at 27 tonnes, according to Elbe Flugzeugwerke’s (EFW) VP sales and marketing Wolfgang Schmid. The Dresden-headquartered company is the first to have certificated a freighter-conversion programme for the A321-200 and has so far delivered two converted A321s.

As a freighter the A321 offers some important operational advantages over the 757 and the 737-800, Schmid claims. While its 14-position main-deck cargo capacity is one container position less than that of the 757, the A321P2F’s fuselage cross-section allows its belly hold cargo space to store 10 LD3-45 containers. However, the narrower lower fuselages of the 757 and the 737-800 prevent their belly holds from being able to store standardised containers at all: all their belly-hold cargo is bulk cargo. The A321 is also about 20 per cent more cost-efficient to operate than the 757, says Vallair’s CEO Grégoire Lebigot, the launch customer for EFW’s A321P2F programme.

EFW inducted three A321s for conversion in 2020, two going to its conversion lines in Singapore and one at parent



ST Engineering’s facility in Guangzhou.

EFW’s first converted A321 was delivered to Vallair in October. In turn, Vallair – as the lessor – delivered the aircraft (MSN 835) to Qantas, which put it into service carrying mail for Australia Post. Qantas has been very happy with the operating performance of the aircraft to date, says Lebigot. EFW delivered its second converted A321 in January to customer BBAM, which leased it to UK carrier Titan Airways for operation on behalf of Royal Mail. BBAM is having another A321 converted at EFW’s Singapore facility, the aircraft being due for delivery to Titan Airways in February.

Vallair also has the initial EFW conversion slot at Guangzhou. There, aircraft MSN 1017 is undergoing conversion for lease upon completion to SmartLynx Malta, which will operate the aircraft on behalf of DHL, according to Lebigot. The Luxembourg-

20%

The A321 is about 20 per cent more cost-efficient to operate than the 757, says Vallair’s CEO Grégoire Lebigot, the launch customer for EFW’s A321P2F programme

headquartered company holds 10 firm A321 conversion slots with EFW and also has “quite a high quantity” of options.

Its strong belief in the future of the A321 as a converted freighter also convinced Vallair to become the launch customer for A321 Aircraft Solutions’ A321PCF freighter-conversion programme in the US. Unlike EFW, this company – a joint venture between ATSG and Precision Aircraft Solutions, which had concentrated on 757 conversions until it launched its A321 programme – does not have access to Airbus’ original design and engineering data for the A321, so it has had to reverse-engineer its conversion design.

When A321 Aircraft Solutions obtains certification for its A321 conversion, a step expected by March, Vallair will lease

The future of the A321 as a converted freighter appears assured, with the A321neo also suitable for conversion

the aircraft (MSN 891) to SmartLynx Malta, also for operation on behalf of DHL. Precision’s A321 conversion creates a palletized, 14-pallet-position storage configuration on the aircraft’s main deck and Lebigot says having the two differently configured SmartLynx Malta aircraft will allow DHL to compare the two modification designs and decide which (if any) it prefers for future use and orders. Vallair has an “undisclosed number of slots” booked with Precision for A321 conversions, but Lebigot says that when announced in a few months’ time, “it will be a large number”.

Vallair has also agreed a letter of intent with planned start-up Global Crossing Airlines, or GlobalX, for 10 converted A321 freighters. Although its shares are registered in Canada and the carrier will indeed have operations there, its Air Operator’s Certificate is being established in Miami, according to Lebigot.

GlobalX plans to take its aircraft over a two-year period, with the first two planned to go to the carrier in the second half of 2021. Lebigot says that Vallair is assisting GlobalX in its negotiations with potential end users of the A321 capacity, “to make sure they will have a strong contract with a famous player” in the industry. The contract probably will be announced within the next three months, he says.

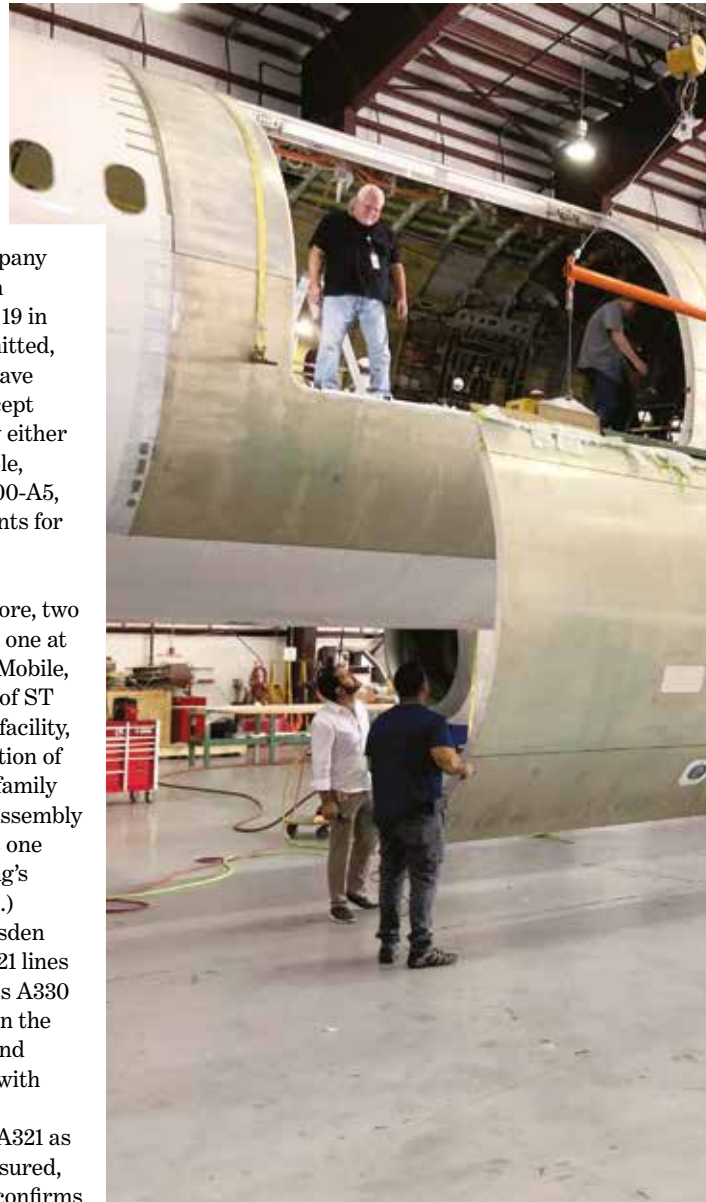
Right: Vallair believes strongly in the A321 as a converted freighter and is involved in many programmes
Below: EFW inducted three A321s for conversion in 2020, two going to its conversion lines in Singapore and one at ST Engineering’s Guangzhou facility

At EFW, Schmid says the company has 12 A321-conversion induction slots scheduled for this year and 19 in 2022. All of these slots are committed, with deposits taken, but not all have finalised contracts. EFW can accept for conversion A321s powered by either of the two engine choices available, the CFM56-5B and the IAE V2500-A5, and holds conversion commitments for aircraft with each engine type.

EFW is establishing six A321 conversion lines: three in Singapore, two in Guangzhou and one at Brookley Field in Mobile, Alabama, the site of ST Engineering’s US facility, as well as the location of Airbus’ US A320-family and A220-family assembly

lines. (Vallair has booked at least one conversion slot at ST Engineering’s Mobile site, according to Lebigot.) Schmid says EFW’s original Dresden site probably will not see any A321 lines for another two years, because its A330 conversion business is booming in the wake of the Covid-19 pandemic and Dresden remains fully occupied with A330 conversions.

At this stage the future of the A321 as a converted freighter appears assured, all the more so because Lebigot confirms that in the future the A321neo – which has the same fuselage dimensions as the A321ceo but new engines, greater payload, more range, and a larger number of aircraft ordered – will also be suitable for freighter conversion. Some A321neos are now nearing five years of age and in as little as five years’ time it is possible that some A321neos could become economically viable candidates for freighter conversion, he says.





What about the A320?

Industry opinion is more divided on the suitability of the A320 for freighter conversion. The potential feedstock population of A320s (and eventually A320neos) is vast, far bigger than the entire size of a freighter market already supplied with large numbers of 737-800s and A321s. Additionally, the A320 may pose some technical, financial and operating challenges as a converted freighter, according to IBA Group head analyst Jonathan McDonald.

But the die is already cast. California-based C³ ('C Cubed') Aerospace has been working for some time to develop STCs for freighter conversions for both the A320 and the A321, though it does not have access to Airbus' original design and engineering data for either model and its completion date for the prototype A320 conversion, which began in 2019, remains unclear. Additionally, while EFW confirms the A320 will require a different freighter conversion kit than the A321, it already has an induction slot booked for its A320 conversion prototype.

One of the 12 conversion slots EFW has booked for this year is for an A320 rather than an A321 and Schmid confirms "there is at least a customer for the A320 prototype," adding, "we are getting more and more requests for the A320, as well [as for the A321]. We are entering with an Airbus product a market segment which has never been an Airbus market before.

We will not dominate it soon, but we are sure we will take over a big part of it."

EFW is Airbus' partial affiliate for the A320 conversion and expects to obtain its STC for the A320 conversion in the first quarter of 2022. Vallair thinks the A320 has a promising future as a converted freighter and is planning to become a customer for A320 conversions. However, the company wants to establish its A321 programme before adding A320s. "The more the cargo operators are confident with the A321, the more the possibility is of them taking the A320," Lebigot says.

Other possibilities

AEI holds an STC for converting the Bombardier CRJ100 regional passenger jet to a freighter and is thinking of developing freighter-conversion STCs for the CRJ200 and the much-longer fuselage CRJ900 too, according to Convey. However, IBA's McDonald thinks few such aircraft are needed; their payloads and operating characteristics making them suitable only for niche markets where small cargo loads have to be flown quite long distances quickly.

The turboprop ATR family remains successful globally both as a converted freighter and as a new-build. Recently de Havilland Canada has developed a conversion STC for the Dash 8-400 in an attempt to tap this market too. While these turboprop types aren't as fast as jets and offer only 8-10 tonne cargo payloads as freighters, they are much cheaper to operate and they usually incur lower landing fees. Aircraft feedstock for conversions is likely to remain high.

Beyond the 737-800, AEI thinks there might be a future for the 737-900 and the 737-900ER as a converted freighter. Such an aircraft would offer 12 container or pallet positions on the main deck, just as did the converted 727-200, once the most widely used narrowbody freighter.

"We don't see [the converted 737-900/900ER] as being anywhere near as successful as the 737-800," concedes Convey, with a potential market for somewhere from 100 to 200 aircraft. AEI plans to develop one or more STCs to cover conversions of both major 737-900 versions, but sees the programme as longish-term. Convey thinks the company might decide to launch a 737-900/900ER conversion programme in 2022, so with two to three years needed to develop the STCs, it might set a target date around 2025 for delivery of its first conversion. ©

72%

There will be 1,458 freighters in 2039 converted from former passenger aircraft – some 72 per cent of those will be narrowbodies

Full service

ECS Group's CEO **Adrien Thominet** reflects on how the company has adapted in the wake of Covid-19 and assesses its ability to provide expertise in all of an airline's cargo-specific activities

How would you describe the current state and outlook of the GSA sector?

Our current work primarily involves finding new business opportunities for the airlines we represent in response to the drastic fall in capacity. Without airlines, ECS Group would have no purpose. Our business is closely linked to that of our clients. It's clear that the GSA sector has been heavily impacted by this pandemic.

As such, we are doing everything we can to mitigate this critical situation and to find new business opportunities, by putting together bespoke operations – whether via charter or PtoF flights – to destinations in their networks and also by creating new routes. The strength of our international network and the synergies we're capable of, coupled with our client portfolio, are a source of real added value in these extremely uncertain times.

What have been the biggest impacts of the Covid-19 pandemic?

One of the biggest impacts has taken place within the group, in how we manage our human resources, like in many businesses. All the more so at ECS Group, because we have more than 150 offices in over 50 countries. We've needed to demonstrate adaptability.

We've reorganised our teams and found a balance between remote working and working in the office, all with the constant aim of ensuring the health and wellbeing of our employees and giving them the best possible working conditions.

On the purely business level, agility is another crucial factor. We adapt based on airlines' available capacity. We adapt to their new requirements, particularly in terms of anticipating market volatility. And we adapt to find them additional business solutions when necessary.



Our role as a GSA is our core business, but today ECS Group is able to supplement its offering with a multitude of services and areas of expertise

ADRIEN THOMINET

Throughout this entire period, we have also worked to consolidate our digitalisation. The crisis has highlighted the need to have more flexible processes and ways of working, particularly when added value and/or human expertise is not necessary. In the post-Covid age, ways of working will change towards an even more digitalised approach.

Have there been any key learning points?

There are many important lessons we have learned throughout this period that have reaffirmed our way of working and our strategic choices, and all the more so in the face of the lack of visibility that airlines have in an extremely unstable market. These are:

1) The need for close relationships with clients to be able to provide the best possible response to their needs and to enable greater responsiveness and flexibility. That's how we've always worked at ECS Group. It's simply essential and it's what is helping us to get through this crisis alongside them.

2) The need to specialise: this is what we do, for example, when we offer new business strategies to our clients (PtoF, charters, co-loading, new routes).

3) The need for constant optimisation, the drive to never rest on our laurels – whether in terms of processes, revenue, digitalisation or logistics solutions.

4) The need to continue to invest, which is extremely important in times of crisis, even though it may seem counter-intuitive. This is what we have done at ECS Group via a process of full and total digitalisation, and it's a real source of added value.

How has the company adapted to the changing needs of the air cargo industry?

ECS Group has restructured to give its clients what they need: a service offering combining sales, operations, optimisation and decision-making aspects.

Our role as a GSA is our core business, but today ECS Group is able to supplement its offering with a multitude of services and areas of expertise, which complement and/or support traditional services whenever they are required. This is what allows us to adapt to suit all



types of client, all types of situation and all types of need. Our clients choose what they need at a given point in time.

In the current situation, our clients need advice and guidance with their decision-making in light of the level of market volatility. Our in-house predictive BI system (Apollo) allows us to offer yield optimisation expertise. This is crucial in the current situation. It is essential for our clients that they optimise their costs, and we enable them to do so by offering them outsourcing solutions: we are capable of carrying out any activities they choose to delegate to us.

What are your thoughts on digitisation and e-booking platforms – have you seen more interest in them?

E-booking platforms are an excellent way to streamline buying/selling processes, making them smoother and more efficient. These platforms will naturally come to occupy a prominent position and we at ECS Group already use their services.

However, they still have limits in terms of their features, which in general are restricted to providing rates and allowing quote requests and bookings to be made for general cargo. This is certainly valuable, and it allows teams in the field to improve both their efficiency and their performance while freeing themselves from certain time-consuming, low value-added tasks. It will be interesting to see

what types of features these platforms will move towards over the coming months – what new products and services they will be able to offer to the industry.

What are the advantages of ECS Group's business model and its global scope?

ECS Group's business model offers a number of benefits, the first of which is that we have created custom-made solutions across airlines' entire range of expertise. This means airlines are able to outsource all or part of their activities, safe in the knowledge that these tasks are being managed by an expert.

The second is the ease with which we can generate additional revenue for our clients, with turnkey and tailor-made solutions such as charters and P2F flights. Finally – and this has characterised us since the beginning – our sales strength is a real asset.

We have a dense, strong and powerful network so we can guarantee to our clients that we can sell their capacity anywhere in the world, across all existing routes and those that we create specifically for them.

What differentiates ECS Group from its competitors?

Unquestionably what sets us apart is the diverse and complementary range of services we offer. ECS Group has real expertise in all of an airline's air cargo-

specific activities. Our business lines go beyond our core business as a GSA, and that's how we ensure we stand out very clearly from our competitors.

Another major and distinctive source of added value is our ability to be a robust partner in terms of decision-making and business strategy: yield optimisation, pricing, cost optimisation, market intelligence, interlines, performance management, penetration of new markets, and more.

We have the capability to manage all operational aspects (QSS, customs, customer service, track and trace, etc.). This is coupled with our outsourcing solutions, which go beyond the traditional GSSA offering, including data capture and mail/e-commerce management solutions, among others.

Finally, we supplement our expertise in all these fields with digital tools that we have developed in-house, including: Apollo (in-house BI system), PathFinder (in-house tracking system) and Quantum (in-house ad-hoc pricing system).

In which areas or markets do you see potential for expansion?

Asia is a market that holds very strong potential for us. Boosted by e-commerce, which is driving a lot of capacity demand, it's a very interesting market in terms of business opportunities at both the global and the domestic level. ●

The types of dangerous goods being flown today have evolved in recent times. There has also been an increase in lithium batteries being shipped by air in line with the rise of e-commerce. Nowadays, lithium batteries are being used as temperature loggers for pharmaceutical shipments. In addition, competency-based training and assessment (CBTA) and safety management systems (SMS) have also emerged as major factors in cargo handling.

Lithium batteries

The term 'lithium battery' refers to a family of different chemistries, comprising many types of cathodes and electrolytes. For the purposes of the International Air Transport Association (IATA) Dangerous Goods Regulations, and the International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods By Air, they are separated into lithium metal batteries and lithium-ion batteries.

While the former are normally primary (non-rechargeable) batteries that have lithium metal or lithium compounds as an anode, the latter – sometimes known as Li-ion batteries – are a type of secondary (rechargeable) battery commonly used in consumer electronics.

Indeed, consumer demand for lithium batteries is growing exponentially as these batteries are the primary power source of many personal and portable electronic

300

Since 2006 there have been more than 300 recorded incidents of smoke, heat, fire and even explosion resulting from lithium batteries in air freight as well as hold baggage



FLYING SAFE

The need to transport dangerous goods is familiar but the landscape of what is being moved and the regulations surrounding them is shifting. **Mario Pierobon** reports

devices. “With a short product life cycle, these devices require fast transportation and so air freight is the primary method of shipping them around the world,” says Smiths Detection’s global director aviation Richard Thompson.

Flammability issues

Lithium batteries are classified as dangerous goods because of the potential for these batteries to ignite, and this risk is even greater with low-quality batteries. Since 2006 there have been more than 300 recorded incidents of smoke, heat, fire and even explosion resulting from lithium batteries in air freight

as well as hold baggage, according to Thompson. “Lithium batteries require specialised handling given their volatility and the grave threat they pose to the aviation sector – and there are stringent IATA regulations that must be adhered to in order to avoid hefty fines,” he says.

Ahmed Elias, head of training at Jordan-based Total Aviation Training, says the importance of lithium batteries has increased during the last couple of years, driven by customers’ demand to travel with their equipment on board (mobile phone, laptops, tablets, e-cigarettes, mobility aids such as hoverboards or wheelchairs), trade



Clockwise from above: IATA's regulations are a key tool; Swissport handles over half a million dangerous goods shipments a year; the company sees great benefit in digitisation

of such equipment and devices (import/export as cargo) and the need for entertainment devices onboard aircraft. "Operators and airlines are required to improve their safety procedure to mitigate the risks arising from the use of such devices and equipment," he notes.

In parallel, the lithium battery industry is working on new types of lithium batteries to reduce the risk of thermal runaway and fire events. A United Nations subcommittee of experts on the transport of dangerous goods is also working to identify whether there are better methods for the classification of lithium batteries that might take a more risk-based approach, according to IATA's assistant director of cargo safety and standards David Brennan. "From the airline side there have been additional measures implemented to try to ensure that all lithium batteries offered for air transport are fully compliant with the regulations," he says.

"The greatest risk for air transport is from shippers that offer lithium batteries that are not prepared in compliance with the regulations. This includes substandard and counterfeit batteries, which typically do not have the safety controls that apply to properly manufactured and tested lithium batteries."

Detection and handling

Smiths Detection's Thompson highlights that powerful and reliable artificial intelligence-trained algorithms can provide automatic





detection of lithium batteries and a broad range of dangerous, illicit and contraband goods ranging from flammable liquids and solids to liquified and compressed gasses.

“In view of high volumes and the need for speed of the air cargo industry, it is essential that screening is both highly efficient and effective,” he explains. “With extremely low false alarm rates, algorithmic detection capabilities can be used with conventional x-ray and explosives detection systems to significantly reduce the burden on image analysts, protect assets and, most importantly, increase the safety of personnel and aircraft.”

The lithium battery guidance document issued by IATA is constantly being kept up to date, and it is an important reference for cargo handlers. “This document covers the handling of lithium batteries in the complete supply chain and forms an integral part of our dangerous goods training programmes,” says Swissport’s global operations manager Andrew Wareham.

“Rules and regulations related to the handling of dangerous goods and these lithium batteries will continue

to change and be fine-tuned. This only leads to a safer environment for our personnel to work in and a safer aviation industry.”

Dangerous goods training

With regard to training, IATA’s Brennan observes that the Covid-19 pandemic and the inability to gather in-person has shifted the focus on the delivery of dangerous goods training away from classrooms and instead to look at what can be achieved through virtual or digital training. “It is likely that this shift will continue, although there will always be a place for in-person classroom training”, he says.

At Swissport, most of the dangerous goods training still takes place in the traditional classroom environment and not on online platforms. “People are one of our core values and we believe the classroom environment enriches the learners’ experience and interaction on the subject matter,” says Wareham. “Conducting the training in the classroom increases the awareness of the importance of the correct handling of dangerous goods throughout our organisation. Of course, Covid-19 has an influence

on how and how often we can conduct a classroom training.”

In the air transport industry, there has been a significant

amount of work on developing provisions for competency-based training and assessment (CBTA) for dangerous goods. “CBTA was implemented in the ICAO Technical Instructions and IATA Dangerous Goods Regulations with effect from 1 January 2021, with a two-year transition period to allow regulatory authorities and industry time to adopt the new provisions,” explains Brennan. “CBTA focuses on the job function being undertaken and aims to ensure that the employee is provided with dangerous goods training and assessed as being competent to perform the function for which they are responsible.”

Mandatory training for all persons involved in the preparation, handling and carriage of dangerous goods has been a key element in the safety of air transport for many years. “The move to CBTA is an opportunity for companies to focus on the functions being performed and to

Illustration: Phil Couzens

Cargo handling in recent years has benefited from safety management systems implementation

Far left: Lithium batteries are the primary power source of many electronic devices
Left: Training is evolving in parallel with the different types of dangerous goods being transported
Below: The rise of e-commerce has had a big impact on safety requirements



really identify the competencies required for the job function. In this way dangerous goods training can be tailored to address the needs for the job function, improving the relevance of the training for the employee,” says Brennan.

There are some variations in terms of the regulatory ‘baseline’ for dangerous goods training, he notes. “For example, some states take the view that all persons handling cargo being offered for air transport must have a minimum level of dangerous goods training.

“This applies to persons employed by freight forwarders processing or handling what is offered as ‘general cargo’. The objective of this is to provide the knowledge and competence for the employees to be able to identify dangerous goods that have not been properly offered in accordance with the regulations: the so called undeclared dangerous goods,” he says.



Safety management systems

In addition to CBTA, the domain of cargo handling in recent years has benefited from SMS implementation. For airlines and ground handling agents, the introduction of SMS and the use of safety risk assessments provides a better focus on areas where there may be greater risk, which can be addressed through additional mitigations, according to Brennan.

“One of the key tools for this is a ‘no fault’ reporting system so any dangerous goods incidents can be reported without fear of reprisal,” he explains. “Reporting of such incidents provides an indication of the ‘health’ of the safety system and allows the company to identify the potential cause of the failure in the system. This could be the content of training, poor procedures, badly worded work instructions or other internal controls that can be revised to address the gap.

“The incident reporting may also identify that the failure is due to external entities that have insufficient safety controls. Here the airline and/or ground handling agent can implement additional mitigation measures to prevent recurrence. It is IATA’s view that an SMS approach should be applied across the entire air cargo supply chain. The earlier in the transport process that safety issues are addressed the better.”

According to Swissport’s Wareham, the biggest benefit to all within the industry will be data quality and digitisation. “Globally, we handle over half a million dangerous goods shipments on a yearly basis at Swissport; however, less than one per cent of these are tendered to us electronically with an eDGD (electronic dangerous goods declaration),” he reports. “Even though the eDGD was introduced a few years ago, the penetration of this on a global level is still limited.” ©

REWILDING THE PLANET

Qatar Airways Cargo has committed to flying wild animals back to where they belong, at no cost, as part of its expansive and ambitious 'WeQare' corporate social responsibility programme



know that animals have an important role to play in preserving ecological balance which in turn ensures existence and stability of the environment.

"Through chapter two, we want to encourage this preservation and that is why we are offering free transport to bring wild animals back to

where they belong."

Qatar Airways already has a zero tolerance policy towards the illegal trade of endangered wildlife and is committed to fighting wildlife trafficking, highlighting that it was a founding member of the United for Wildlife Transport Taskforce and an inaugural signatory to the Buckingham Palace Declaration in March 2016.

The cargo carrier has released a series of striking advertisements and a special video to raise awareness of the importance of rewilding animals among its customers and air cargo stakeholders. It has also released a WeQare logo featuring tree patterns that symbolise life and growth, the environment and society as a whole, Qatar Airways says. "The tree patterns are enclosed within a round shape representing the planet. All of these elements are united around a common or shared purpose – sustainability."

The company ultimately hopes that WeQare will begin a ripple effect and inspire others to put sustainability on top of their agendas. Qatar Airways Cargo will launch more WeQare chapters in the coming months, all of which will be directly linked to its everyday activities. ©



We all know animals have an important role to play in preserving ecological balance

transport these animals back to their natural habitat free of charge.

"We are concerned about the legacy we leave for the future generation," says Qatar Airways' chief officer cargo Guillaume Halleux. "We strongly believe in giving back to the community and protecting our environment. We all

Stemming from a desire to help those in the greatest difficulty as a result of the Covid-19 pandemic, Qatar Airways Cargo launched its 'WeQare' corporate social responsibility project in July.

It is a series of concrete air cargo actions designed to create a positive impact on the industry and the world, in the form of chapters. According to Qatar Airways Cargo, WeQare is driven by its employees and is built on four fundamental pillars of sustainability: economy, environment, society and culture.

The first chapter of the sustainability project was called '1 Million Kilos', with charities worldwide able to use the services of Qatar Airways Cargo until the end of December 2020 to transport humanitarian aid and medical supplies all over the world to impacted people and regions, free of charge.

The second chapter has just been launched and is called 'Rewild the Planet'. In it, Qatar Airways Cargo has committed to preserving wildlife and endangered animals and has pledged to



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