

CHARLIE VICTOR

THE CARGOLUX MAGAZINE



#04
The M&E issue

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MEET ONNO PIETERSMA	>	04
CELEBRATION	>	08
TESTIMONIAL	>	10
NEWS	>	12
DISCOVER M&E	>	15
CARGOLUX IN ACTION	>	24
SUCCESSFUL TEAMS	>	26
CARGOLUX INNOVATION	>	30
ROUTE MAP	>	32

SEASON'S GREETINGS



The year 2017 has proven to be an extremely busy one for all in the industry, and its peak season has elevated Cargolux's annual production to record levels. Markets have shown strong growth as economies worldwide strengthened.

Cargolux was able to further consolidate its position in the market. We added another 747-400 freighter to our fleet in October this year, bringing our fleet to a total of 27 B747 aircraft, and entered into a fruitful partnership with Emirates SkyCargo. Our customers can now benefit from a wide range of additional destinations and seamless connectivity between our companies' networks. In China, Henan Cargo Airlines, our Zhengzhou-based joint venture airline, is progressing well with the formal signing of the Joint Venture Equity Contract in June, a major step forward in the launch that is planned for the fourth quarter of 2018. We also grew our network with additional services, especially for the peak season, and new destinations, the latest being Douala and Lubumbashi. At the end of the day, this means we can provide more options and flexibility for our customers around the world.

Cargolux celebrated significant milestones and received some prestigious awards in 2017, as well. We broke ground for our new headquarters, clocked 1 million flight hours on our GENx-powered 747-8F fleet after only 5 years and a half of service, and our maintenance organization will celebrate its 1,000th A-check on a 747 at the end of this year. Our awards included Best All-Cargo Airline (Air Cargo News), Best Freighter Operator (Freighters World), Best Green Airline (Asian Freight, Logistics and Supply Chain [AFLAS]), and the STAT Times' International Award for Excellence in Air Cargo - for the fourth year running.

As Cargolux increases in size and staff, we look to the future with even more focus on our customer needs, innovation and excellence in service quality. Let me express my gratitude to our loyal customers for their continued support and our dedicated staff for their unwavering passion to keep Cargolux at the forefront of our industry as "The Global Cargo Carrier of Choice". With that, I wish our readers peaceful holidays and a very successful and healthy 2018!

Kind regards,

RICHARD FORSON,
CARGOLUX PRESIDENT & CEO



ONNO PIETERSMA
EXECUTIVE VICE PRESIDENT
MAINTENANCE & ENGINEERING

Keep Them Flying

OUR JOB IN A NUTSHELL? MAKE SURE THE RIGHT AIRCRAFT IS AVAILABLE AT THE RIGHT TIME, IN THE RIGHT CONDITION, **SAFELY. ALWAYS SAFELY.** >



Onno Pietersma, Executive Vice President Maintenance & Engineering (M&E), loves his job. Every day brings new challenges and new discoveries. “We are ‘on the ball’ as a team. The Cargolux family has a strong culture of positive communication, and we encourage people to speak up. Being open to feedback about problems, or new ideas to innovate and improve, is why we are an industry leader in this area.”

Cargolux uses an innovative integrated model for maintenance and engineering. Its strong communication culture allows everyone’s efforts to be coordinated. No matter where someone is in the organization; Flight Operations, Global Logistics, Network Management, M&E, they know that they play a critical role in the Cargolux success story. The focus is on working together effectively.

Whether it’s their own Cargolux aircraft, or one from a third party, Onno’s team ensures that checks and maintenance are done on time and on spec.

Onno’s focus is to ensure that M&E has the means and knowledge to give Cargolux and the customer what they need. Along with the proper and approved maintenance program and set process for every check for both the -400 and -8 series, the team’s experience means they can use a more dynamic model. This flexibility is what makes the difference and gets the job, any job, done quickly and effectively. This is important because aircraft utilization is a key metric for Cargolux, and they have the highest in the industry.

Preparation is key. Since each aircraft has limited time on the ground, everything must be ready; materials, manuals, drawings, checklists, tooling; no aspect of the job is too small to consider. The team has a variety of kits

prepared, developed and designed to address almost any problem. These kits decrease the time it takes to resolve many of the standard issues that come up during the aircraft checks. They are also used during recovery operations. Like a SWAT team for aircraft repair, M&E can mobilize people and kits to almost anywhere in the world in a matter of hours. “Our most remarkable stories center around recovery. We have such a dedicated and skilled team; they are ready and prepared to act. If something comes up, there will always be someone who can go home, pack, and get into the air. With just a small team, we have the skills to secure and prepare an aircraft for ferry, so it can be repaired and returned to service in the shortest possible time.” says Onno proudly.

Keys to Success

Due to their unique relationship with Boeing, Cargolux staff know those carriers inside and out. The relatively small team of 460, focuses on building and improving core skills, like running the most efficient A- and C-checks possible. Other activities, such as D-checks, that only happen every six to eight years, are contracted out to specialist companies in Asia. By outsourcing this work, the team remains free to do what they do best, optimizing their production. An important metric in such a competitive market.

Another fundamental element of success for Cargolux M&E is safety. Cargolux operates under a “just culture” and therefore a “no blame” communication umbrella. People are comfortable speaking out and listening to feedback. In addition to effective preparation, every project includes a debrief, so that lessons learned are captured and communicated. Any new or safer way of doing things is transmitted to the team. The focus on detecting, preventing and correcting issues can be seen at virtually every level of the M&E organization and sets Cargolux apart as an outstanding example of integrated success. ◯

“The well-educated, highly skilled team at Cargolux enjoys a high level of effective communication. This means they can respond to and resolve any challenge quickly.”

Onno Pietersma

CELEBRATION

1 Million & Counting

On January 14, 2017, the M&E division achieved an exciting milestone of 1 million engine hours, on the GENx-2B. Cargolux was the launch customer for the 747-8F with the GENx-2B engine and remains the field leader. This Cargolux division provides high-quality maintenance services, including A- and C-checks for the Cargolux Group and third-party customers. Its close relationship with GE and highly skilled staff gives them a clear competitive edge. Whether maintaining airplane health, digital aircraft records, environmentally friendly aircraft cleaning or designing solutions, the team looks for projects and partnerships which support development in this exciting industry. As a leading operator of Boeing's 747-8 freighter, Cargolux has unequalled knowledge and experience of the aircraft's maintenance processes. This unparalleled skill ensures scheduling reliability and a 97.7% dispatch rate for the aircraft. The GENx-2B engine is a giant leap forward in propulsion technology; it's lighter, more energy efficient and contributes to Cargolux's Sustainability Plan. Sustainability initiatives reduced Cargolux CO₂ emissions by 6,398 tons in 2016 alone. ◻



TESTIMONIAL
VÉRONIQUE DE ALZUA

MUDAM
LUXEMBOURG
מאדאם
מוזיאון לאמנות מודרנית
MUSEE D'ART MODERNE
GRAND-DUC JEAN

4 Grams to 4 Tons: It's Done

WHETHER MOVING WHOLE ART EXHIBITIONS OR A SINGLE INSTALLATION, CARGOLUX HAS AN **OUTSTANDING REPUTATION IN THE ART WORLD** FOR BEING SAFE, PROFESSIONAL AND ALWAYS ON TIME.

Safeguarding and preserving art is one of the main responsibilities for any museum. As Head Registrar at Mudam, Véronique de Alzua wants to ensure that every item in the museum is conserved in its ideal state so they can be enjoyed by generations and generations to come. One element of this is lowering risk – no matter where the art travels. In Su-Mei's exhibit, for example, the heaviest piece is 4 tons and the lightest is 4 grams. Working with highly reliable and careful freight forwarders is integral to Véronique's ability to do her job.

Another important ingredient for any museum is their ability to collaborate with other museums to showcase outstanding contemporary artists. Su-Mei is a wonderful ambassador for art from Luxembourg. She, and her art, represent a bridge between Europe and Asia, and sponsorship by Cargolux helps Mudam, and Luxembourg, stay in the foreground of the contemporary art world. In an industry where your reputation influences your ability to collaborate with other museums to mount exceptional shows, credibility is very important. It is accomplished artists like Su-Mei, and professional suppliers like Cargolux, that help Mudam build its international reputation. "It helps to be associated with an organization that has a long

history of excellence. Cargolux is already world-renown in the art field," says Véronique. "Although we are still a relatively young museum, when I told a New York-based forwarder that Cargolux would transport an exhibit, they were filled with confidence right away. Cargolux has an excellent reputation for being careful, safe and professional."

In the 12 years that Cargolux has sponsored Mudam, Véronique cannot remember one hitch or hiccup. Transporting any exhibition is a big responsibility. "I have confidence in Cargolux. They get the job done. No matter the challenge. They always find a solution." Véronique says, adding: "And the speed of transport lowers the risk substantially. Their climate, tilt- and shock-controlled storage units, ensure the art arrives at its destination in the same condition as when it leaves Mudam. We could not do this without the sponsorship, and professionalism, of Cargolux. They are an invaluable member of the extended Mudam team." ◻



“Whenever we send out our exhibits, we want to have the confidence that they will come back in the same condition. Cargolux gives us that confidence.”

Véronique de Alzua, Head Registrar at Mudam

NEWS

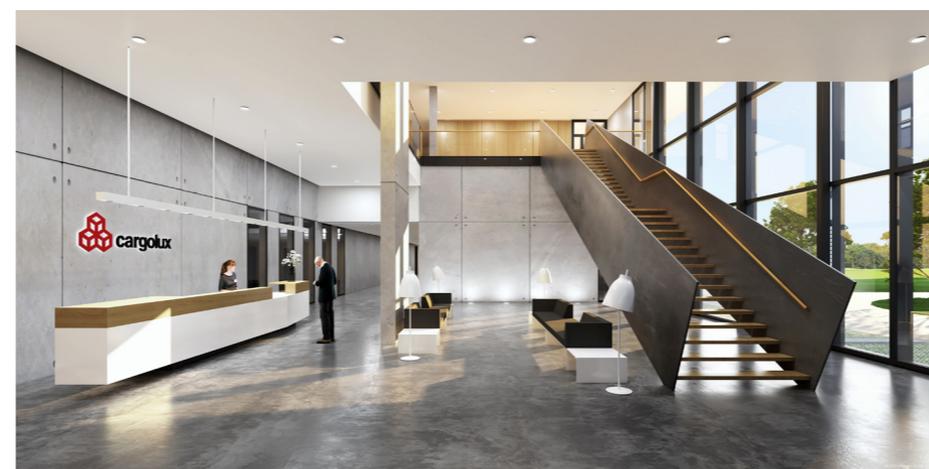
Building force

RISING NEXT TO THE EXISTING HANGAR, THE **NEW CARGOLUX HEADQUARTERS** WILL CONNECT VIA A GLASS-ENCLOSED BRIDGE. AS THE NEW HEADQUARTERS MOVES FORWARD SO DOES CARGOLUX'S EXPANSION. THE ADDITION OF LUBUMBASHI AND DOUALA BRING DESTINATIONS IN AFRICA TO 35.



2020

THE EXPECTED YEAR IN WHICH THIS **STATE-OF-THE-ART BUILDING** SHOULD BE COMPLETED. IT WILL OFFER ROOM FOR ADMINISTRATIVE STAFF AND PARKING, BRINGING THE LOCAL CARGOLUX FAMILY TOGETHER IN ONE LOCATION.



Exports

SHIPMENTS ARE MAINLY METALS, TIMBER, AND PERISHABLES (**FRUITS AND VEGETABLES FOR EUROPEAN CONSUMERS**).

Imports

INCLUDE HI-TECH GOODS, AGRICULTURAL PRODUCTS AND MACHINERY.



September 15

CARGOLUX BEGINS FLIGHTS TO LUBUMBASHI.

Efficient connections

CARGOLUX OFFERS **FAST, EFFICIENT CONNECTIONS** BETWEEN THE LARGEST PORT IN CENTRAL AFRICA (KUALA) AND YAOUNDE VIA ITS ROAD FEEDER SERVICES.

Lubumbashi

DRC'S **SECOND LARGEST CITY** IS A HUB FOR MINING AND AN IMPORTANT COMMERCIAL AND INDUSTRIAL CENTER FOR TEXTILES, FOOD, BEVERAGES, AND BANKS.

October 3

CARGOLUX MARKS ITS **FIRST FLIGHT TO DOUALA**, CAMEROON'S LARGEST CITY.

DISCOVER M&E



Innovation & Accuracy, The M&E Way

THIS CARGOLUX DIVISION PROVIDES HIGH QUALITY MAINTENANCE SERVICES, INCLUDING A- AND C-CHECKS FOR THE CARGOLUX GROUP AND THIRD-PARTY CUSTOMERS. WORKING WITH BOEING DURING THE DESIGN OF THE 747-8F, CARGOLUX M&E KNOWS THE AIRCRAFT INSIDE AND OUT. ITS **CLOSE RELATIONSHIP WITH BOEING AND GE AND HIGHLY SKILLED STAFF** GIVES THEM A CLEAR COMPETITIVE EDGE. >



AREAS OF THE AIRCRAFT CAN BE ALMOST 20 METERS OFF THE GROUND AND DIFFERENT PARTS CAN WEIGH SEVERAL TONS... OR ONLY OUNCES. THE JOB REQUIRES **ACCURACY, VIGILANCE, AND ATTENTIVENESS.**

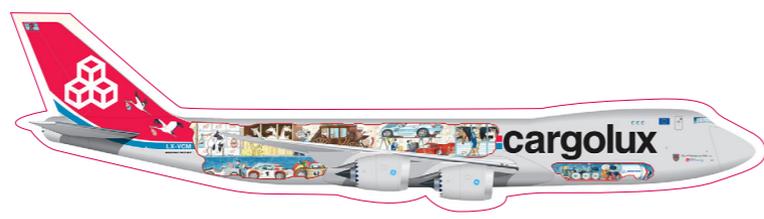
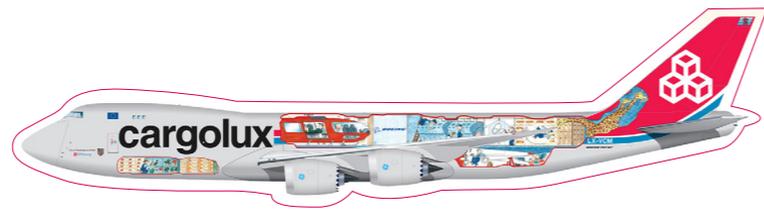




AS A LEADING OPERATOR
OF BOEING'S 747-8 FREIGHTER,
CARGOLUX HAS UNEQUALLED
KNOWLEDGE AND EXPERIENCE
OF THE AIRCRAFT'S
MAINTENANCE PROCESSES.

 **cargolux**
you name it, we fly it!


cargolux
you name it, we fly it!



CHINA - EUROPE

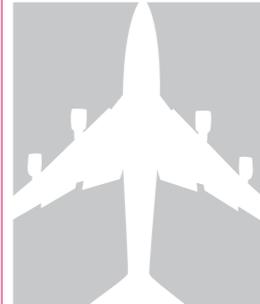


Linking China to Europe.
Daily flight to Luxembourg
www.cargolux.com

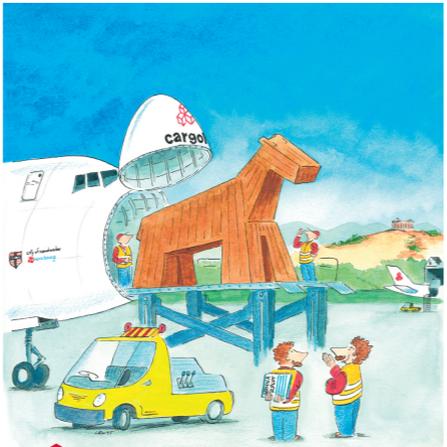
 **cargolux**
you name it, we fly it!

NEW  

BOEING 747 8F 



WELCOME TO LUXEMBOURG



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you name it, we fly it!

CHICAGO ZHENGZHOU-



The best link to China
www.cargolux.com

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you name it, we fly it!



CV alive

 **cargolux**
you name it, we fly it!



CV precious

 **cargolux**
you name it, we fly it!



 **cargolux**
you name it, we fly it!

PROUDLY FLYING
the **747-8 FREIGHTER**





747-8 FREIGHTER
THE WORLD'S MOST EFFICIENT FREIGHTER





M&E WORKS WITH BOEING
CLOSELY TO ANTICIPATE AND
PREVENT ISSUES. OUTSTANDING
MAINTENANCE ENSURES
SCHEDULING RELIABILITY
AND A 97.7% DISPATCH RATE.





ON JANUARY 14TH (2017), M&E ACHIEVED AN EXCITING MILESTONE OF **ONE-MILLION-ENGINE HOURS ON THE GENX-2B**. CARGOLUX WAS THE LAUNCH CUSTOMER FOR THE 747-8F WITH THE GENX-2B ENGINE AND REMAINS THE FIELD LEADER.





INNOVATION IS KEY.
MAINTAINING AIRPLANE HEALTH,
DIGITAL AIRCRAFT RECORDS,
ENVIRONMENTALLY-FRIENDLY
AIRCRAFT CLEANING AND DESIGN
SOLUTIONS ALL FALL UNDER
THE UMBRELLA.





Cargolux products



CHRISTIAN THEIS,
CV PRODUCT MANAGER

“Whether a one-off transportation of art or a regular transport, all cargo needs special care and handling. CV Precious items need **security, temperature-, shock- and tilt-control.**” says, Christian Theis, CV Product Manager.

For Mudam’s Su-Mei Tse’s exhibit, the CV Precious team is present during the loading and unloading, as usual; they work closely with the forwarder to ensure that every step of the handling process is followed to the letter – in the air and on the ground.

The CV Precious team is unequalled in experience. **Handling over 3,000 tons of art annually**, they set the standard for security and quality. With the most advanced carriers, they use precisely controlled containers to protect and cushion cargo. Their Boeing 747 freighters have **four zones which allow cargo of every type and nature**, to be transported in an ideal environment.

Irreplaceable art, high-precision machinery or machined items (e.g., semiconductors) require vigilance and special care during the process. They are always in good hands with CV Precious. ◊





READY! ANY DAY CAN SEE OVER 50 PEOPLE WORKING ON AN AIRCRAFT. IT TAKES PRECISE SCHEDULING AND OVERSIGHT TO ENSURE THAT ALL TASKS ARE CARRIED OUT EFFICIENTLY.

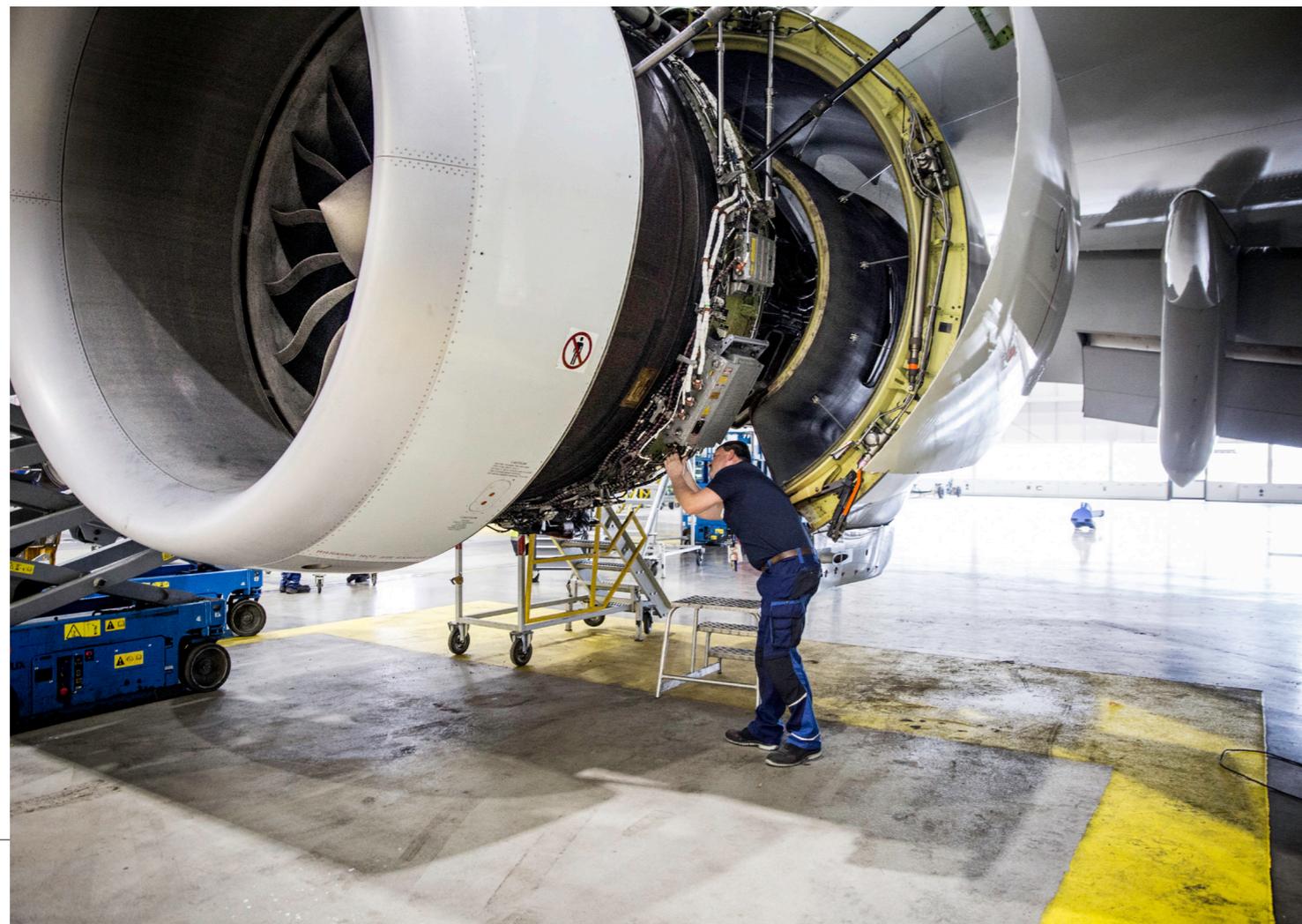
SUCCESSFUL TEAMS



1,000 and Counting

IT'S MY JOB TO KEEP THEM FLYING, TO STRIVE FOR A **SAFE, ON-TIME DEPARTURE**, NEVER COMPROMISING ON SAFETY. IN NINE YEARS, WE HAVE PERFORMED ALMOST 100 C-CHECKS AND **1,000 A-CHECKS**, THAT'S QUITE A MILESTONE. IT'S A TESTAMENT TO OUR ABILITY TO LEARN, AND GROW. >

© Maison Moderne



Frank Meysenburg made an unusual career choice for a Luxembourger. From the time he was 12, when he saw his first Rolls-Royce engine, he dreamed of working on jets. Completing his studies at Lycée Technique Privé Emile Metz in Luxembourg, Frank, who joined the company 18 years ago, started his career as a M&E apprentice.

This Cargolux division is having quite an exciting year. On January 14, they celebrated one-million engine hours on the GENx-2B. Cargolux was launch customer on the 747-8F with the GENx-2B engine and remains the field leader. In October 2017 they performed their 1,000th A-check and in February 2018 they will achieve another milestone of 100 C-checks. For a team with barely nine years of C-checks under its belt, commencing when they moved into their new Maintenance Center in May of 2009, it's quite an accomplishment.

Every A- and C-check starts the same way; familiarization and priority setting. For Frank, one of the staff who controls the checks; paperwork and planning are always the departure points. The underlying principle for every check is preparedness. Manuals are printed and reviewed, checklists reread for revisions, and task cards printed out. The Controller goes through every line of the check document and familiarizes himself with every task. Before the check starts, the Controller knows the expected work and has set priorities based on the history of the aircraft and a plethora of accumulated data. The Controller also has an intimate knowledge of the team's workload. Big jobs and/or special checks are reviewed, and every task is queued, and divvied out so that critical service issues or anticipated problems can be detected and resolved early.

The stress of juggling so many different elements within the A- and C-check processes could drive some to distraction, but for Frank, who loves being a Check Controller, it's just another day at the hangar. Frank smiles, allowing us a glimpse of the enjoyment that this unique challenge brings him. "Depending on the aircraft, its age and situation, any day we could have up to 50 tradesmen on the floor, or more."

Since areas of the aircraft can be almost 20 meters off the ground and different parts can weigh several tons - or only ounces - the job requires accuracy, vigilance, and attentiveness.

Frank sets up the handover file right away, then makes notes and adds important information or findings in real-time so nothing is missed or forgotten. A stickler for detail, Frank knows that no matter what happens, all tasks must stay in the system until they are satisfactorily completed. "We never leave anything to chance," says Frank, "even if someone has performed a specific task 100 times, I always remind him to read the paperwork and task cards. Things can change, instructions can be updated or revised. It's important to never make assumptions. We go by the book. That's what keeps our planes flying and our people safe."

This is a team of enquirers and problem-solvers. Always curious about how to make things better, faster or stronger, they encourage new members to ask questions, and they have a culture of never leaving a question unanswered. They push themselves every day to expand their knowledge, working on various tasks and in different zones of the aircraft to accelerate the learning curve and build deep expertise. Whether it is lube, engine changes or gear maintenance, supervisors focus on creating diversity of work for each person. They know their planes inside and out, and are comfortable with every aspect of maintenance, often developing innovative suggestions and solution. "We don't sit around. We are quite focused on pushing forward," Frank says of his team, looking out across the hangar. "We have worked with Boeing from the inception, and design, of the 747-8F. They are newer and more maintenance friendly since many of their components can be switched out quickly if there is a problem, but like anything new, this aircraft is still in the 'teething stage'. We work with Boeing closely to anticipate and prevent issues. The A- and C-checks are perfectly timed to allow us to watch an aircraft mature. And to keep it young!"

When asked about the milestone C-check coming up in February, Frank was nonchalant. "We are ready for the next 100. Bring it on!"



ANYONE WOULD WANT TO BUY AN AIRCRAFT WHICH, AFTER 100,000 FLIGHT-HOURS, **LOOKS AND PERFORMS LIKE NEW.** WE PRIDE OURSELVES IN KEEPING EVERYTHING IN TOP CONDITION.



"We try to continually optimize the schedule. C-checks are performed every 2 years. A-checks are performed every 10 weeks."

Frank Meysenburg, Aircraft Technician

CARGOLUX INNOVATION

Innovation: It's a Mindset

INNOVATION IS A HOT TOPIC EVERYWHERE, INCLUDING AT CARGOLUX. THE WHOLE TEAM STRIVES CONTINUOUSLY TO IDENTIFY CUSTOMER NEEDS AND TO DESIGN **INNOVATIVE AND WINNING SOLUTIONS** FOR THE INDUSTRY.

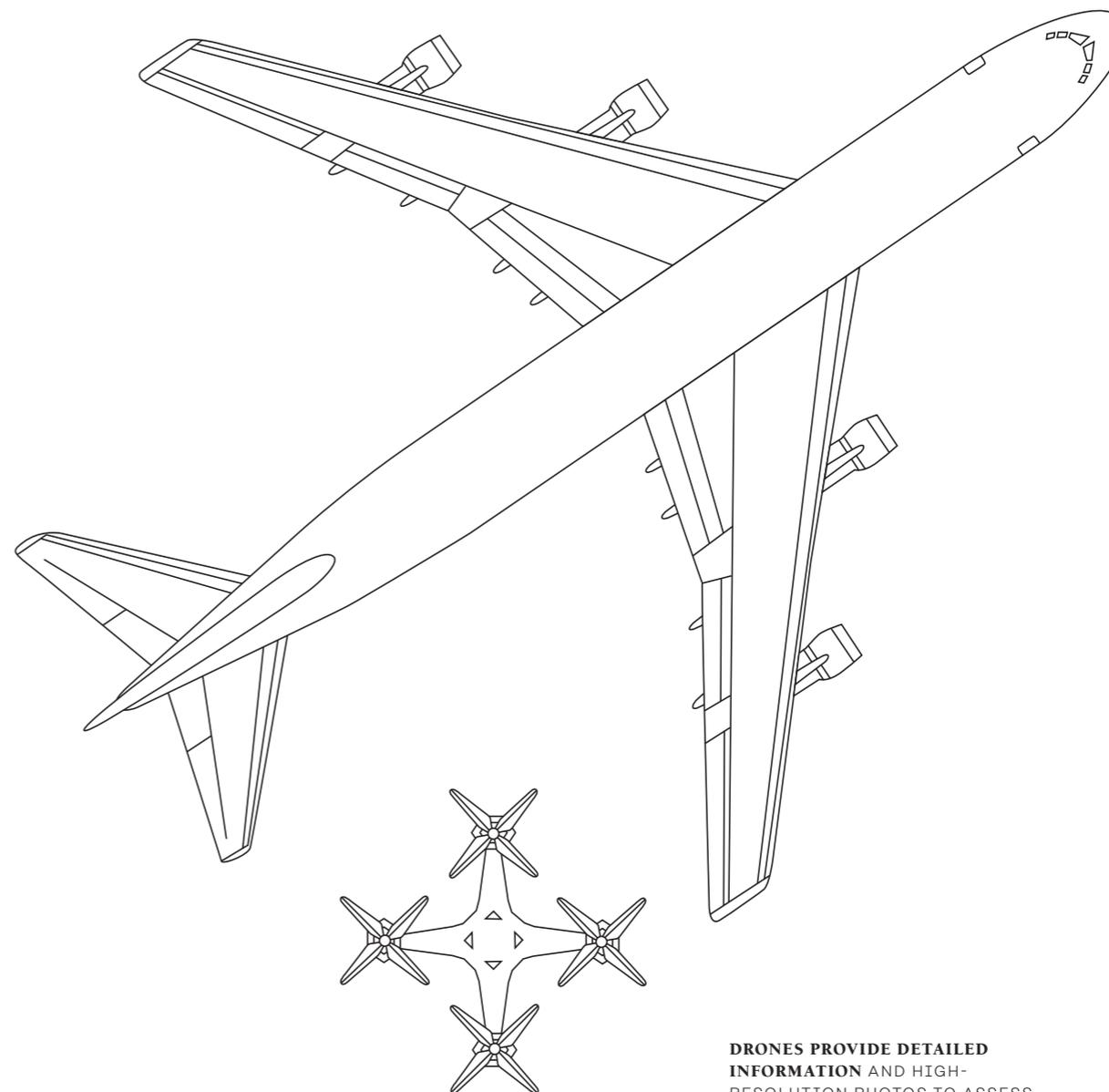
What do Tesla's Powerwall and Formula 1 racing have in common? Lithium batteries! Working with a team of researchers and specialists, Cargolux staff is tackling a problem that has plagued the air industry for years; how to safely transport lithium batteries. "Cargolux is always looking at opportunities to improve. It's in our DNA. If something is important to the customer, then it is important to us. We are partners and we want to help, but we never compromise safety. We take the proper Cargolux approach," says Onno Pietersma, Executive Vice President M&E.

Supporting an innovative environment is standard in the hangar. The latest project is to test the viability of digital aircraft maintenance and overhaul. Currently, thousands of manual pages and task cards are printed every year. A digital process that employs iPads and electronic process management software will save paper, time, and effort. It will also enable better information-sharing, including the ability to more easily and accurately track and report statistics. Cargolux also supports, and capitalizes on, technology innovation in the industry. Smart onboard sensors are processing and storing an increasing amount of information. Now that's 'big data'. For this industry, where aircraft utilization is measured

by the minute, and fuel costs can comprise up to 50% of the budget, having precise data about trends in an aircraft's health, and each component on board, and being able to detect and correct problems early, are vital. Instead of just following industry averages for checks, the team can watch trends, and become more in tune with the optimal timing for all maintenance and service aspects. In addition to lowering cost, this approach will ultimately increase reliability, efficiency and safety.

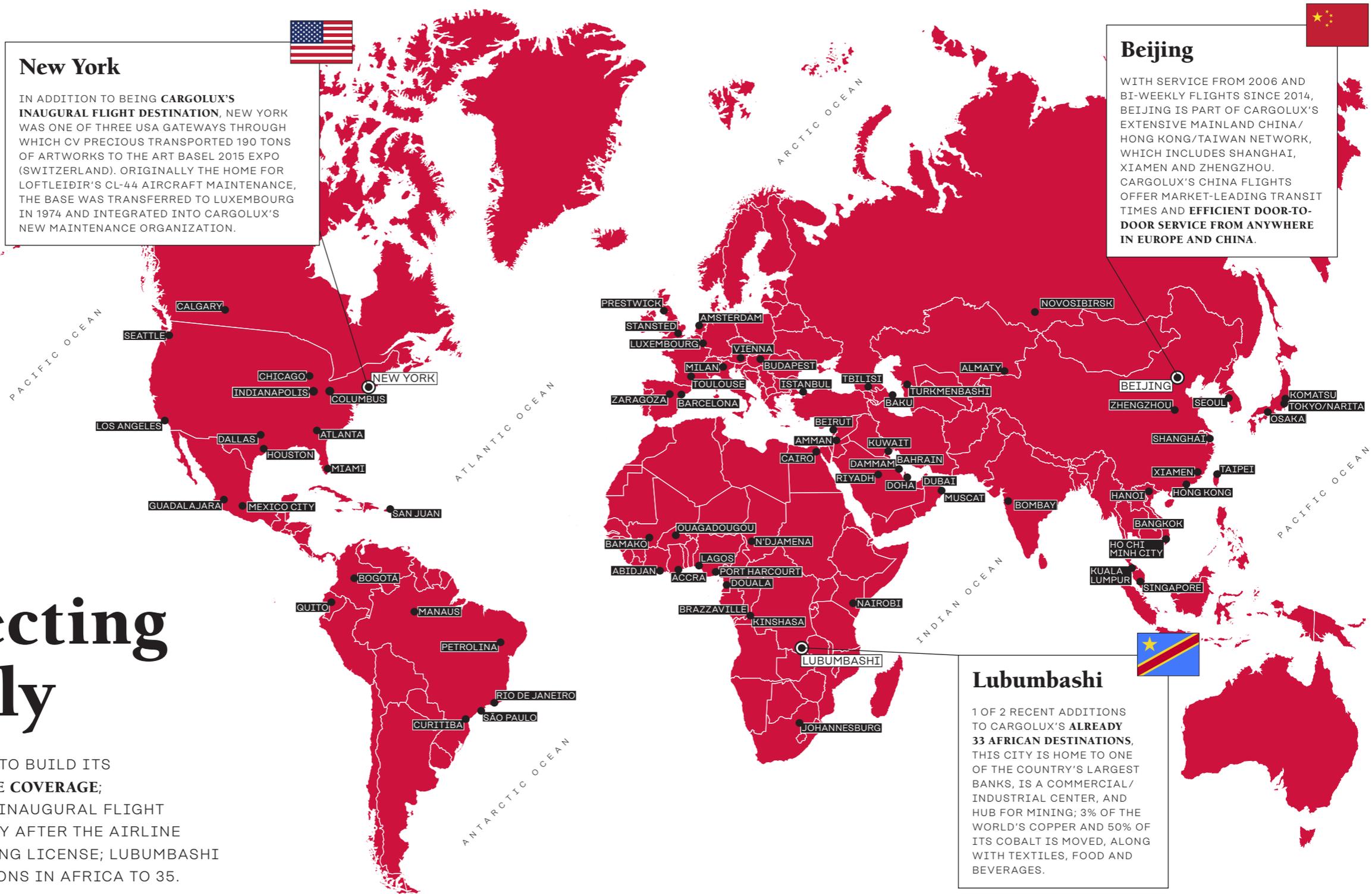
Adding to safe maintenance practices is also important, and the Cargolux team is testing drones for inspecting aircraft surfaces - it's a powerful innovation. Drone inspections, Aircraft Health Checks, working with researchers to solve pressing and immense issues for the industry, such as the safe transportation of lithium batteries, Cargolux supports its innovative, solution-oriented team in finding forward-looking answers for today... and tomorrow. ◻

INNOVATION COMES FROM THE PEOPLE, FROM THE INDIVIDUAL, BUT IT REQUIRES SPONSORSHIP FROM MANAGEMENT TO WORK. **CARGOLUX CAPITALIZES ON OUR BEST AND BRIGHTEST IDEAS** TO OUTPERFORM OUR COMPETITION.



DRONES PROVIDE DETAILED INFORMATION AND HIGH-RESOLUTION PHOTOS TO ASSESS POTENTIAL PROBLEM AREAS OR DAMAGE WITHOUT ANYONE LEAVING THE GROUND.

ROUTE MAP



New York

IN ADDITION TO BEING **CARGOLUX'S INAUGURAL FLIGHT DESTINATION**, NEW YORK WAS ONE OF THREE USA GATEWAYS THROUGH WHICH CV PRECIOUS TRANSPORTED 190 TONS OF ARTWORKS TO THE ART BASEL 2015 EXPO (SWITZERLAND). ORIGINALLY THE HOME FOR LOFTLEIDIR'S CL-44 AIRCRAFT MAINTENANCE, THE BASE WAS TRANSFERRED TO LUXEMBOURG IN 1974 AND INTEGRATED INTO CARGOLUX'S NEW MAINTENANCE ORGANIZATION.

Beijing

WITH SERVICE FROM 2006 AND BI-WEEKLY FLIGHTS SINCE 2014, BEIJING IS PART OF CARGOLUX'S EXTENSIVE MAINLAND CHINA/HONG KONG/TAIWAN NETWORK, WHICH INCLUDES SHANGHAI, XIAMEN AND ZHENGZHOU. CARGOLUX'S CHINA FLIGHTS OFFER MARKET-LEADING TRANSIT TIMES AND **EFFICIENT DOOR-TO-DOOR SERVICE FROM ANYWHERE IN EUROPE AND CHINA.**

Lubumbashi

1 OF 2 RECENT ADDITIONS TO CARGOLUX'S **ALREADY 33 AFRICAN DESTINATIONS**, THIS CITY IS HOME TO ONE OF THE COUNTRY'S LARGEST BANKS, IS A COMMERCIAL/INDUSTRIAL CENTER, AND HUB FOR MINING; 3% OF THE WORLD'S COPPER AND 50% OF ITS COBALT IS MOVED, ALONG WITH TEXTILES, FOOD AND BEVERAGES.

Connecting globally

CARGOLUX CONTINUES TO BUILD ITS EXTENSIVE **WORLDWIDE COVERAGE**; NEW YORK HOSTED ITS INAUGURAL FLIGHT IN MAY OF 1970, ONE DAY AFTER THE AIRLINE RECEIVED ITS OPERATING LICENSE; LUBUMBASHI BRINGS ITS DESTINATIONS IN AFRICA TO 35.

CHARLIE VICTOR

THE CARGOLUX MAGAZINE

PUBLISHER

Cargolux

PRODUCED BY

Maison Moderne

www.maisonmoderne.com

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you name it, we fly it!

