

IATA

17th MAINTENANCE

COST CONFERENCE

WEBINAR SERIES

**Episode 4: Operating
in the post pandemic**

**Wed. October 6, 2021
7:30-9:30am EDT**



Opening Remarks

Our host today:



Chris MARKOU

Head, Operational Cost
Management – IATA

markouc@iata.org

- This session is **recorded**.
- Your mic is automatically **muted**.
- Use the **Q&A feature** on the right side of your screen to submit your questions to our speakers
- Competition Law Guidelines

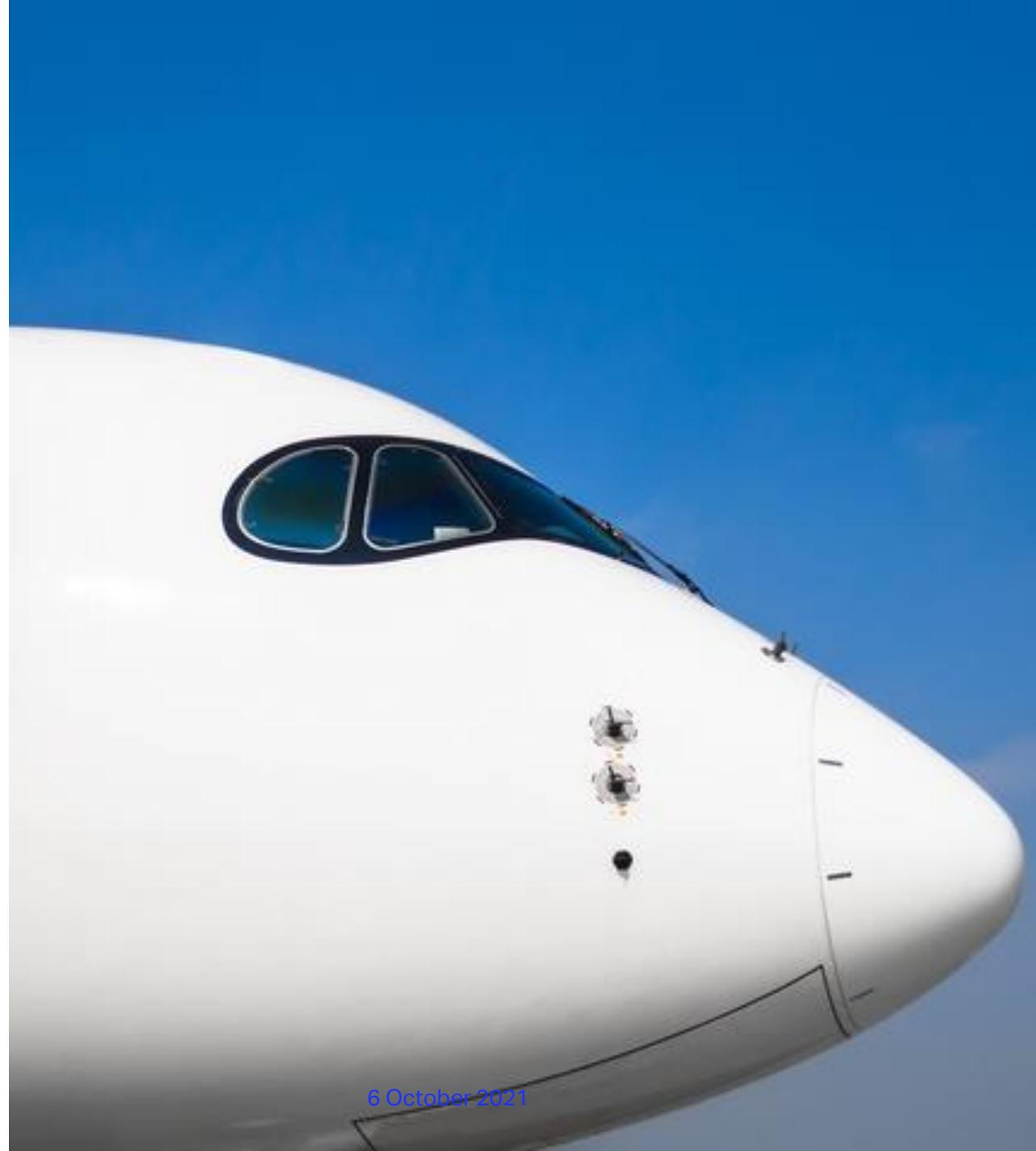
Competition Law Guidelines

Do not discuss:

- Any element of prices, including fares or service charges
- Commissions
- Allocations of customers or markets
- Marketing plans, commercial terms or any other strategic decision
- Group boycotts
- Your relations with industry stakeholders
- Any other issue aimed at influencing the independent business decisions of competitors

Agenda

- Our speakers
- Maintenance costs: aircraft leasing in the post pandemic “new normal”
- MRO Outlook: COVID’s implications for airlines and MRO suppliers
- Navigating through the pandemic, an airline’s experience



Our Speakers



Phil SEYMOUR

President and Head of Advisory – IBA

phil.seymour@iba.aero



Jonas MURBY

Principal – AeroDynamic Advisory

jmurby@aerodynamicadvisory.com



Swaran SIDHU

Head of Fleet Technical Management – easyJet

swaran.sidhu@easyjet.com

Maintenance Costs: aircraft leasing in the post pandemic “new normal”



Phil SEYMOUR

President and Head of Advisory –
IBA

phil.seymour@ibagroup.com





IBA Presentation to IATA MCC

October 6th 2021

Phil Seymour
Company President

www.iba.aero

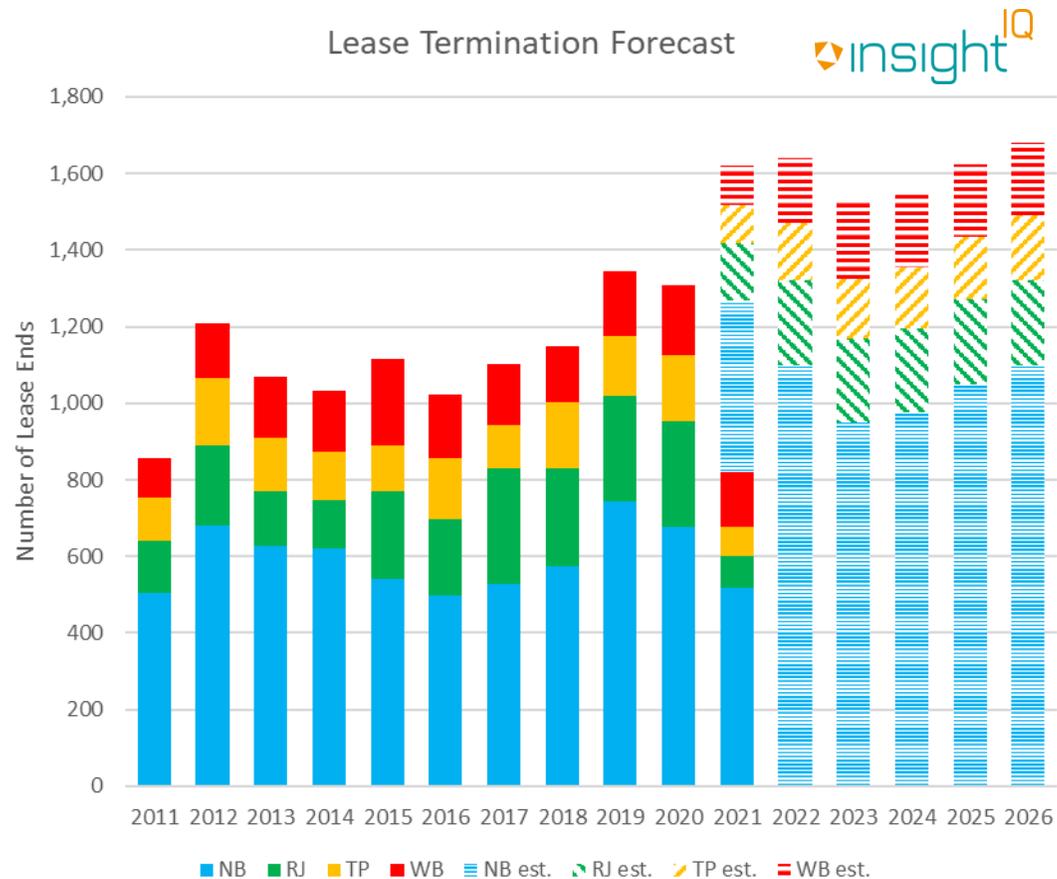
October 21

Maintenance Costs: Aircraft leasing in the post pandemic “new normal”, what can we expect?

1. High level fleet retirements/revised lease end date projection
2. How are maintenance costs and maintenance reserves being impacted (utilisation change)
3. What issues are we seeing between lessors and airlines (maintenance/lease end related)
4. Will we see changes to future lease contracts? (hell and/or high water clause and AD costs (not just pandemic but MAX related)

LEASE END FORECAST

COVID FALLOUT & SLOW RE-FLEET



Multiple Drivers

- Cons: (increased lease ends)
 - We will see more early hand-backs
 - More failures expected 3Q21
 - Rising oil price
 - Greener focus
- Pros: (reduced lease ends)
 - Extensions
 - 2020 increased Sale-Leaseback activity
 - Re-fleeting process is a slow process
 - OEM delivery & design pace

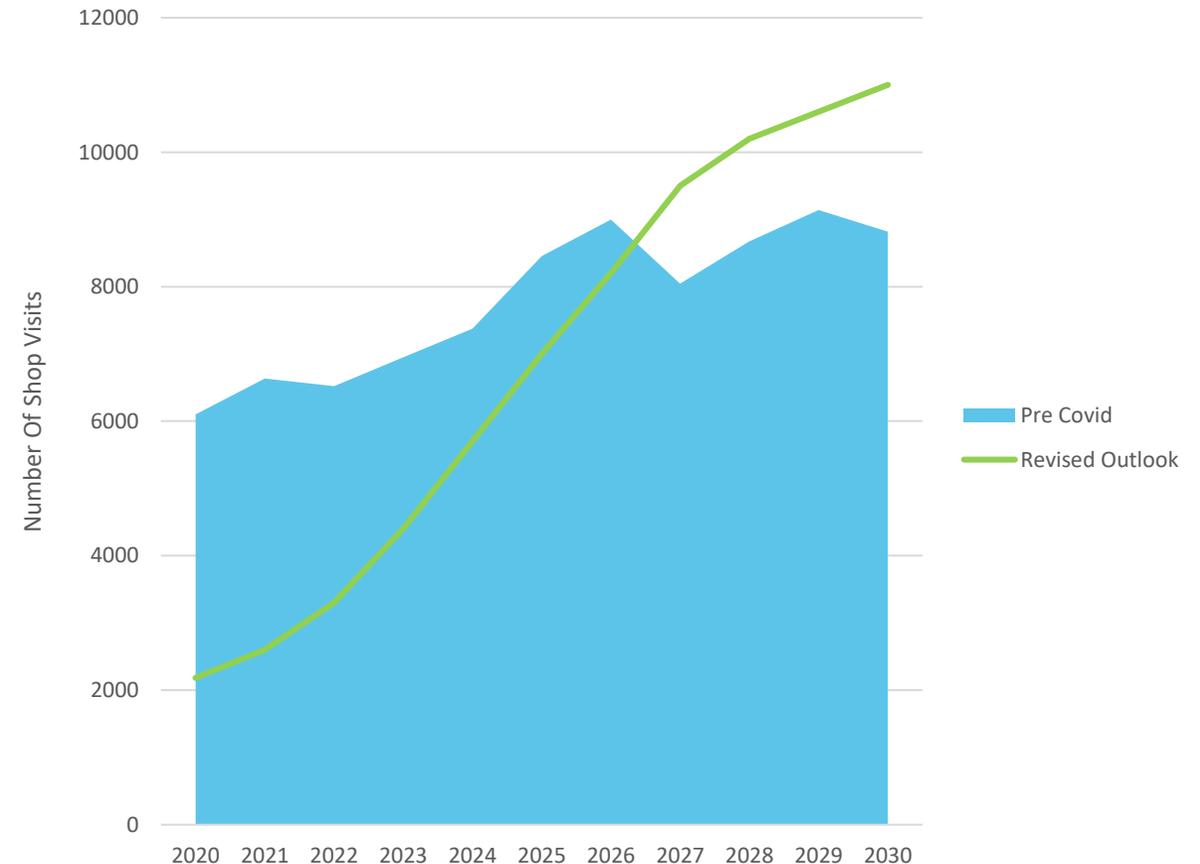
MAINTENANCE CONSIDERATIONS

THE BROADER MRO CHALLENGES

Multiple Issues

- **Long storage periods**
 - Where, how long?
 - Regulator liaison regarding scheduled check deferrals
- **Engines**
 - Green time usage versus shop visits
 - A bow wave of shop visits emerging
- **MRO Industry Capabilities**
 - Reduced resources
 - Redundancies / retirements
 - Logistical blockage
- **Utilisation and Role Change**
 - Not just a regulatory MPD issue
 - Check the lease – what were the assumptions?

Engine Shop Visit Demand Impact - Summer 2021



REDELIVERY ISSUES

SOMETHING OLD / SOMETHING NEW.....

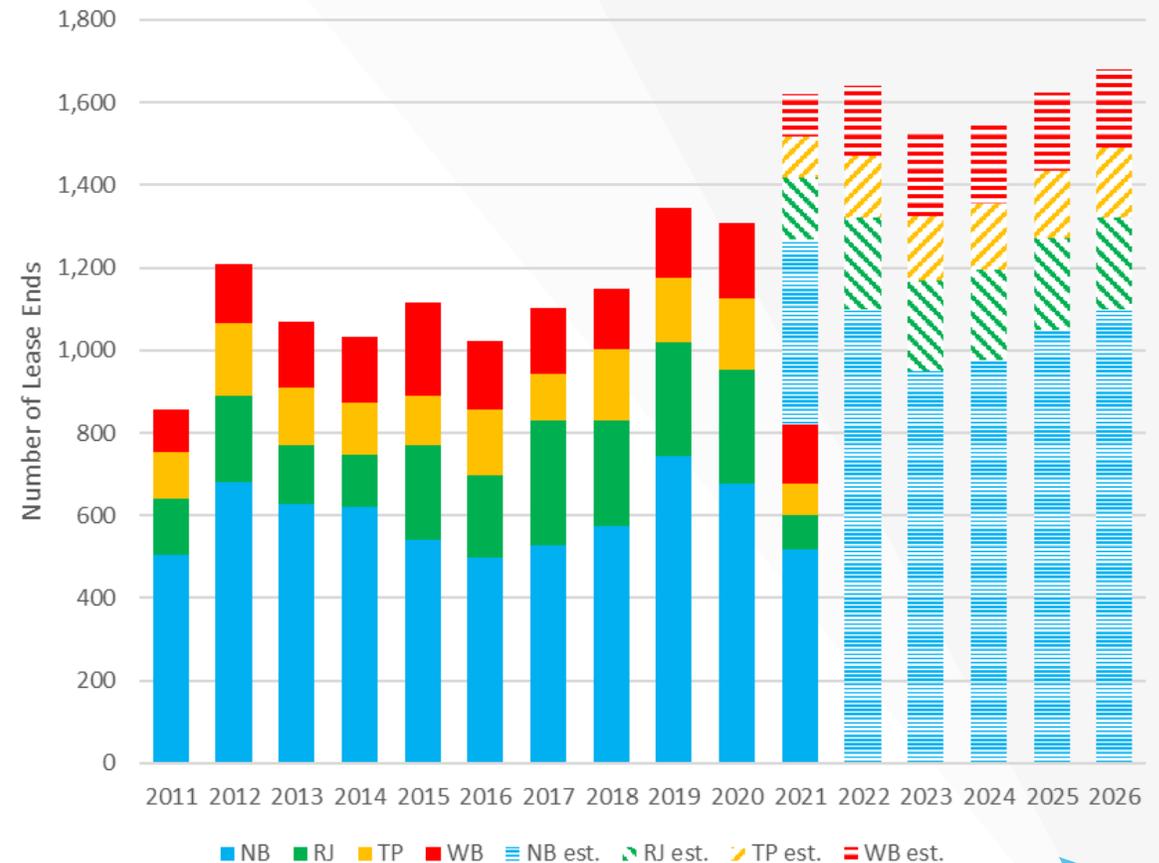
The usual cyclical tug of war

- Lessee cash preservation v Lessor lack of new lessee pressure

The new issue

- Lessors were generally thinly resourced technically
- A whole new demand profile
 - Multiple work-outs
 - Additional aircraft on the market (finance failures)
 - More competition for technical resource
 - Lack of lessor engagement in some cases
- And Supply had been stifled due to mobility issues

Lease Termination Forecast



LEASE CONTRACT CONSIDERATIONS

NOT JUST COVID RELATED BUT THE MAX TOOK US TO NEW CHALLENGES



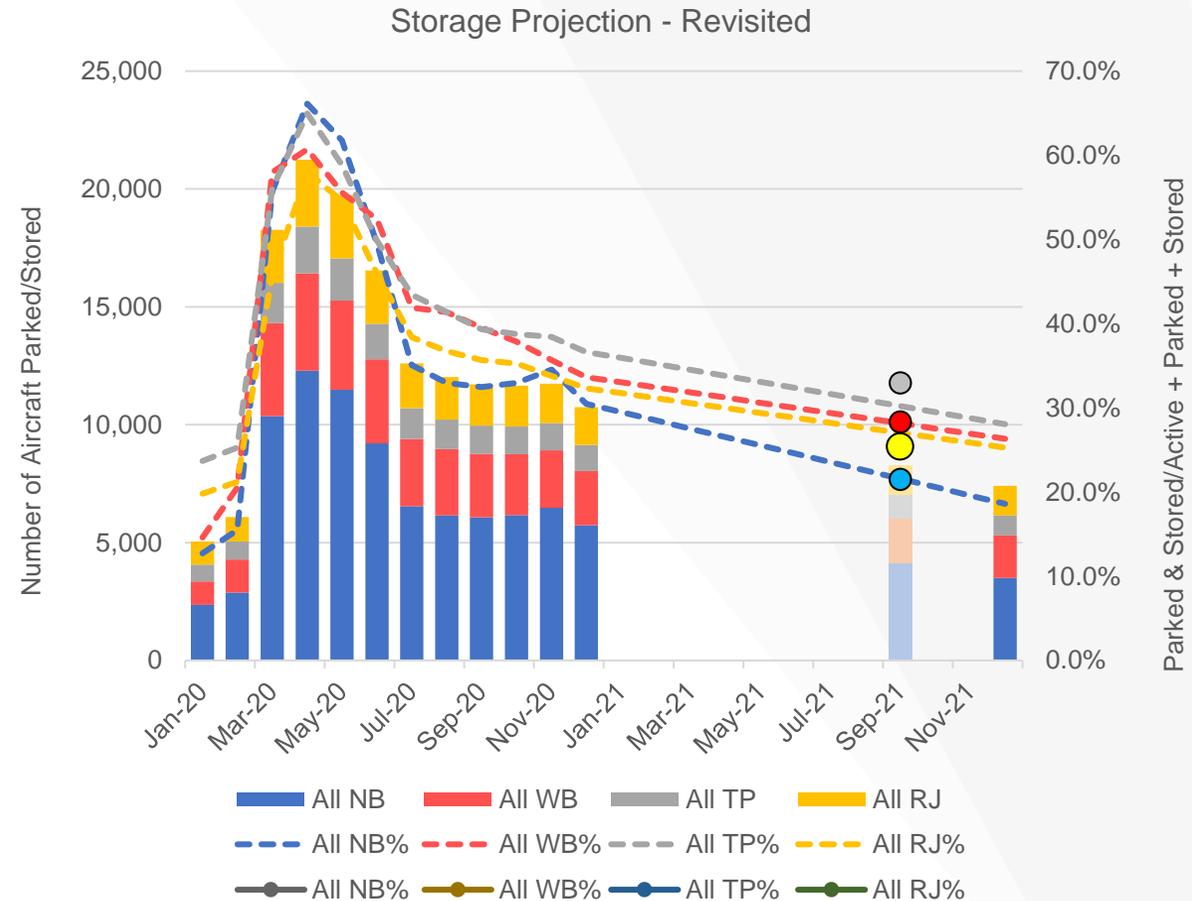
MAX related - extended grounding due to the design faults

- Already delivered - Warranty/AD position
- Impact on delayed maintenance and reserve funds

What if we see another pandemic – will we see provisions for it – built into leases?

- It will be requested
- Case by case?
- Step down/step up rates?

DEFINITION of 'Hell or High Water Contract'. A hell or high water contract (also known as a promise-to-pay contract) is a noncancellable contract whereby the purchaser must make the specified payments to the seller, regardless of any difficulties they may encounter.



ESG - MRO CONSIDERATIONS

- **Understanding Scope 1, 2 and 3 aspects of the business**
 - Many MRO's still behind understanding what to do
 - Some are part of larger entities others stand alone
 - Investors want and need to know the ESG strategy
- **The Logistics challenges**
 - Direct – flying to the facility
 - The parts in and parts out cycle
 - Workshop processes
 - JIT v bulk
 - Waste
- **New technology**
 - 3D printing
 - Paperless processes

insight^{IQ} Carbon Emissions Calculator (CEC)

SUPPORTING EMISSION REDUCTIONS, FLEET SELECTION, COMPETITOR BENCHMARKING, ESG REPORTING REQUIREMENTS AND DEAL ORIGATION

Carbon Emission outputs by:

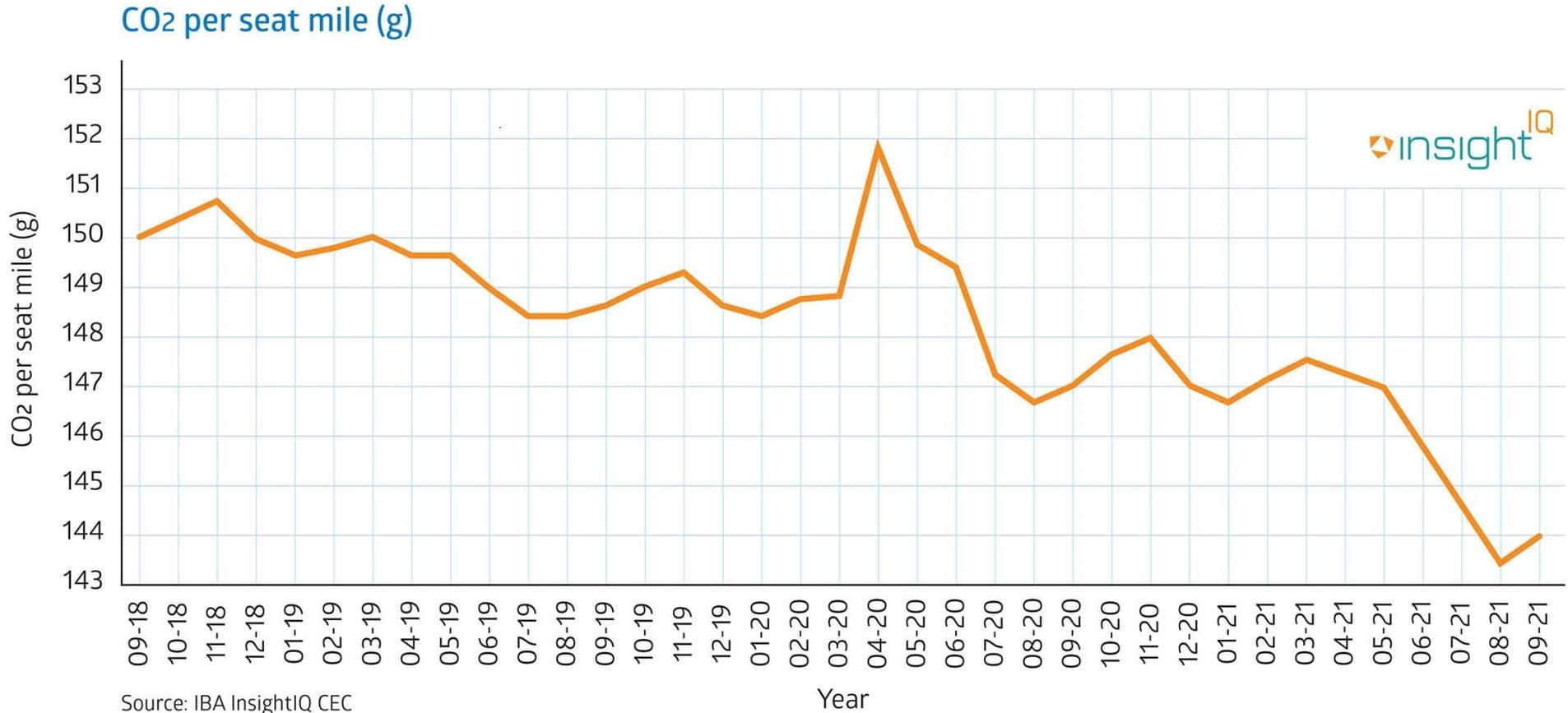
- MSN and Aircraft Model
- Portfolio and Organisation
- Geography
- SAFs
- Average CO₂ per Mile
- Ratio of SAF Usage
- Load Factor Calculations
- Average Emissions per Seat, per Mile

Striving for Net Zero

IBA

IBA'S CARBON EMISSIONS INDEX

IBA is proud to announce the launch of our new Aviation Carbon Emissions Index in association with KPMG. A new standard for aviation CO2 analysis.





IBA Presentation to IATA MCC

October 6th 2021

Phil Seymour
Company President

Questions?



Phil SEYMOUR

President and Head of Advisory –
IBA

phil.seymour@iba.aero



MRO Outlook

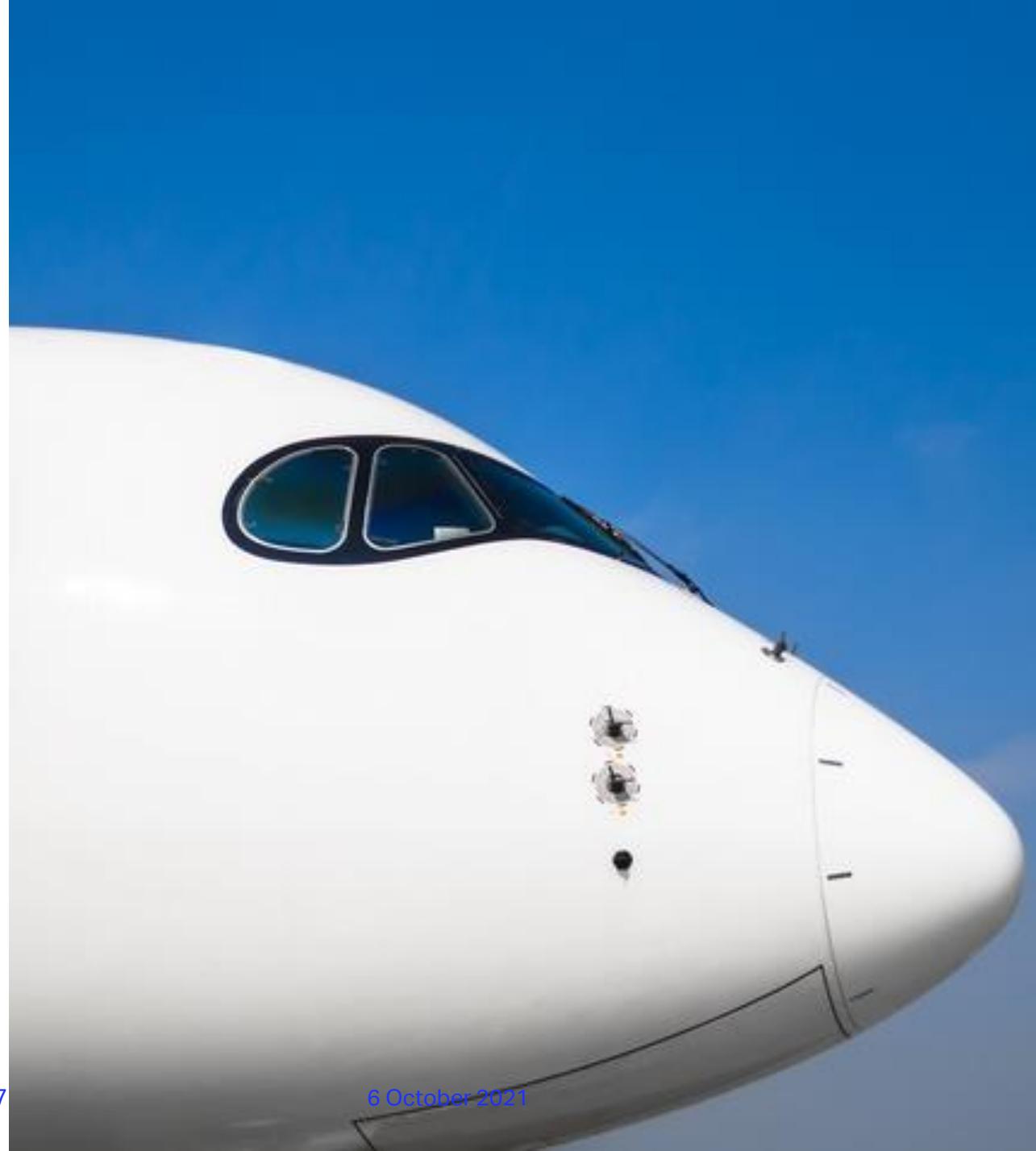
COVID's implications for airlines and MRO suppliers



Jonas MURBY

Principal – AeroDynamic
Advisory

jmurby@aerodynamicadvisory.com



MRO Outlook

COVID's implications for airlines and MRO suppliers

Jonas Murby, Principal

6 October 2021

PREPARED FOR

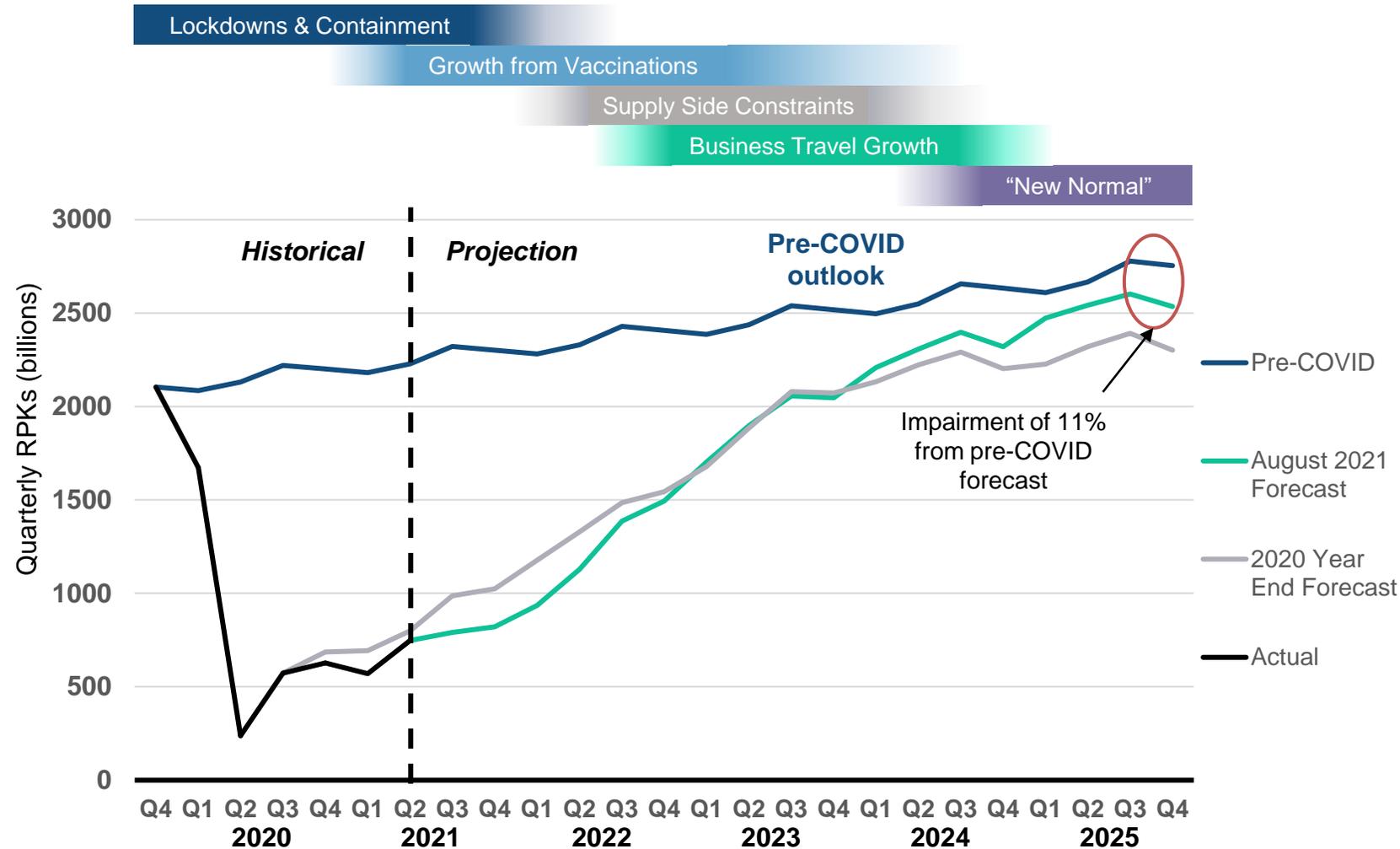


IATA
17th MAINTENANCE
COST CONFERENCE
WEBINAR SERIES



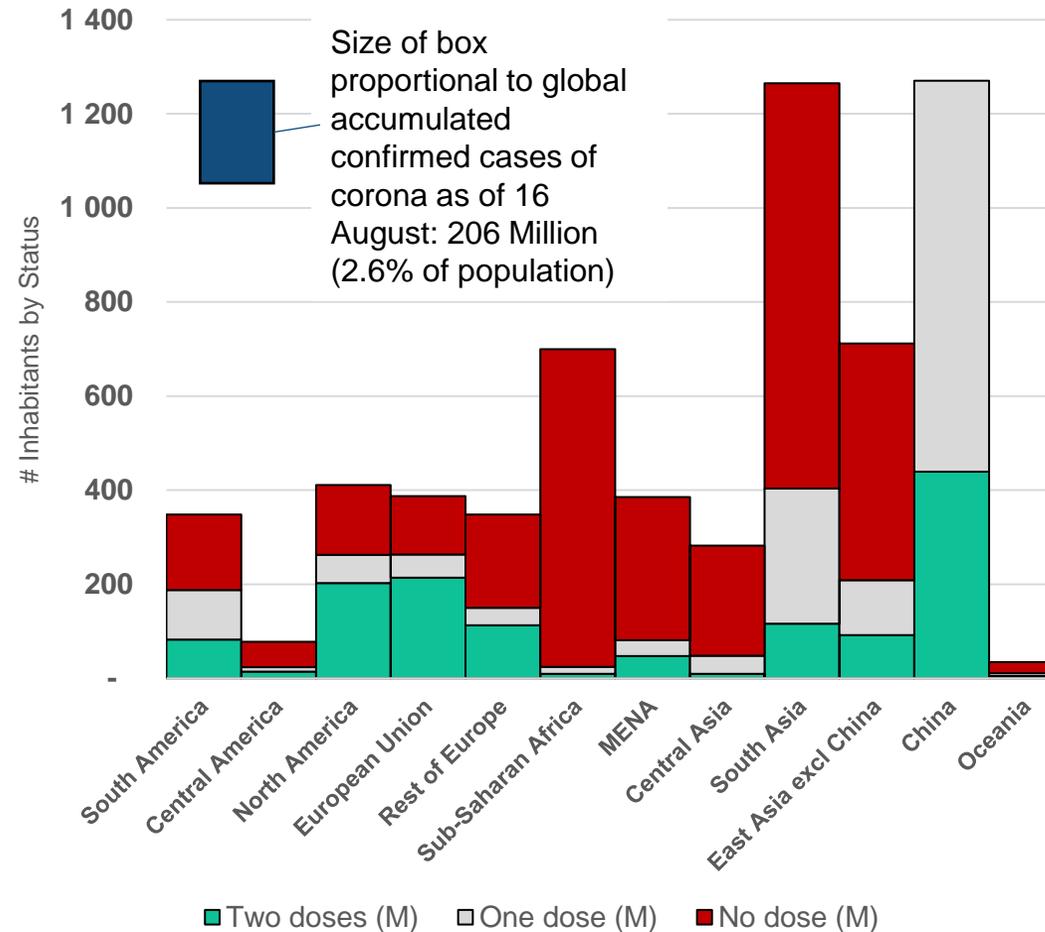
AeroDynamic forecasts air travel recovery by late 2023 or early 2024

Nominal Scenario for Air Travel Recovery



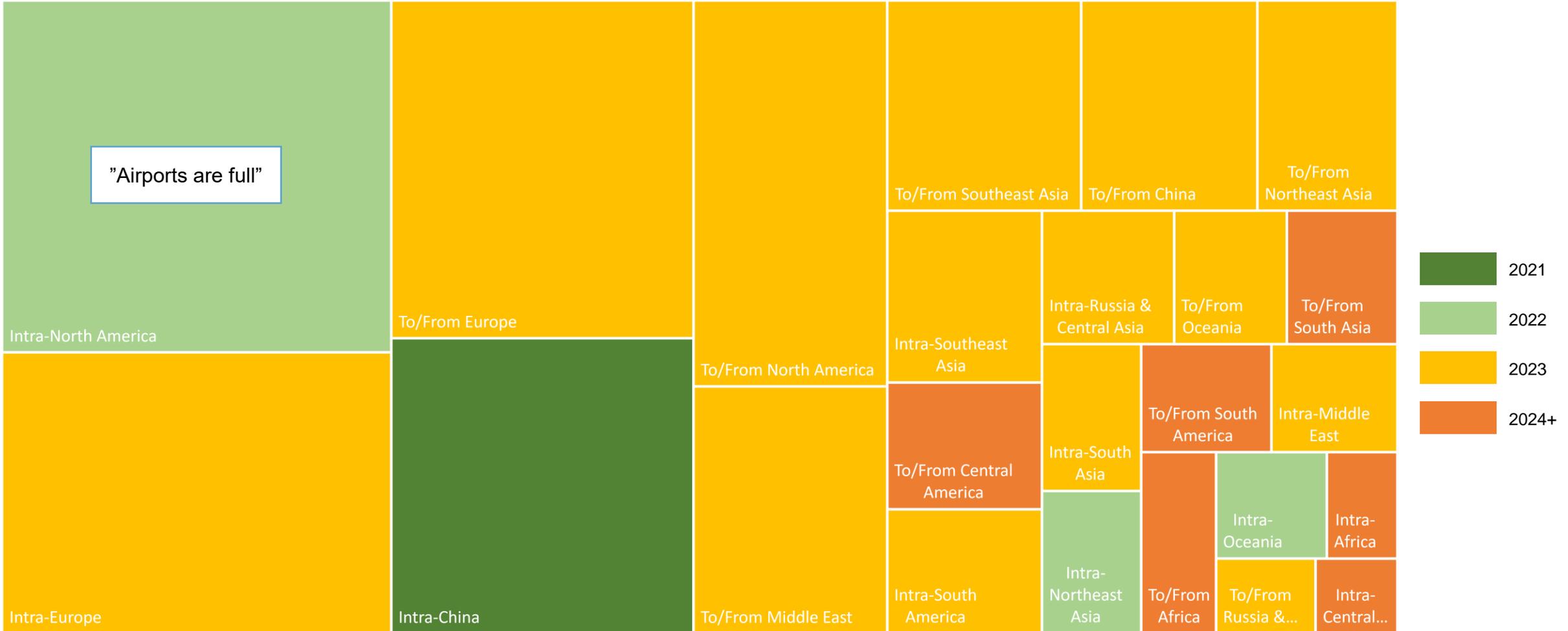
A large portion of the global population remains unvaccinated; the coming years will be a race between vaccines and new variants

Global Adult Population and Vaccination Status*



For most regions, returns to 2019 traffic levels will take multiple years

2019 Global RPK, Broken Down by Region (Intra / Inter) – Color Based on Estimated Return to 2019 Levels

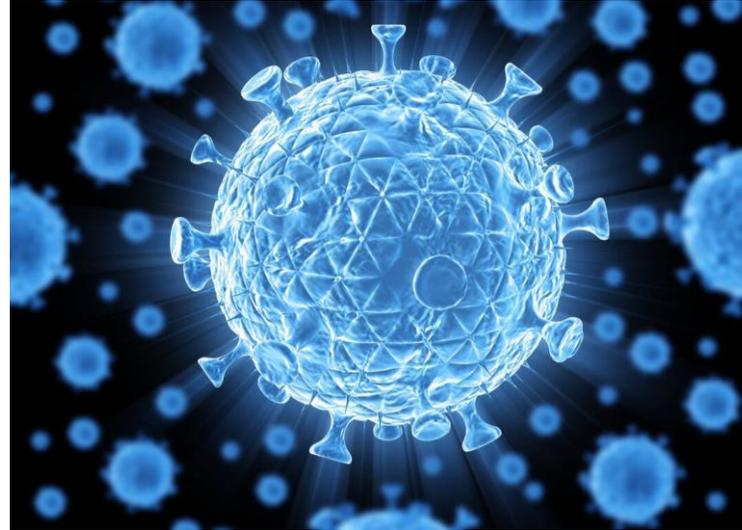


Three factors are preventing a full recovery during the coming few years



Vaccines

- › 20 percent of adult global population fully vaccinated as of 1 Aug 2021
- › Theoretical capacity of 15 Billion doses in 2022, but only 5 Billion mRNA
- › Vaccine skepticism and distribution challenges linger



Variants

- › Only 230 Million confirmed cases (3% of global population) → large feedstock for virus to work on & mutate
- › Delta variant 4 times more infectious than original version
- › Several vaccines provide less efficacy versus Delta variant

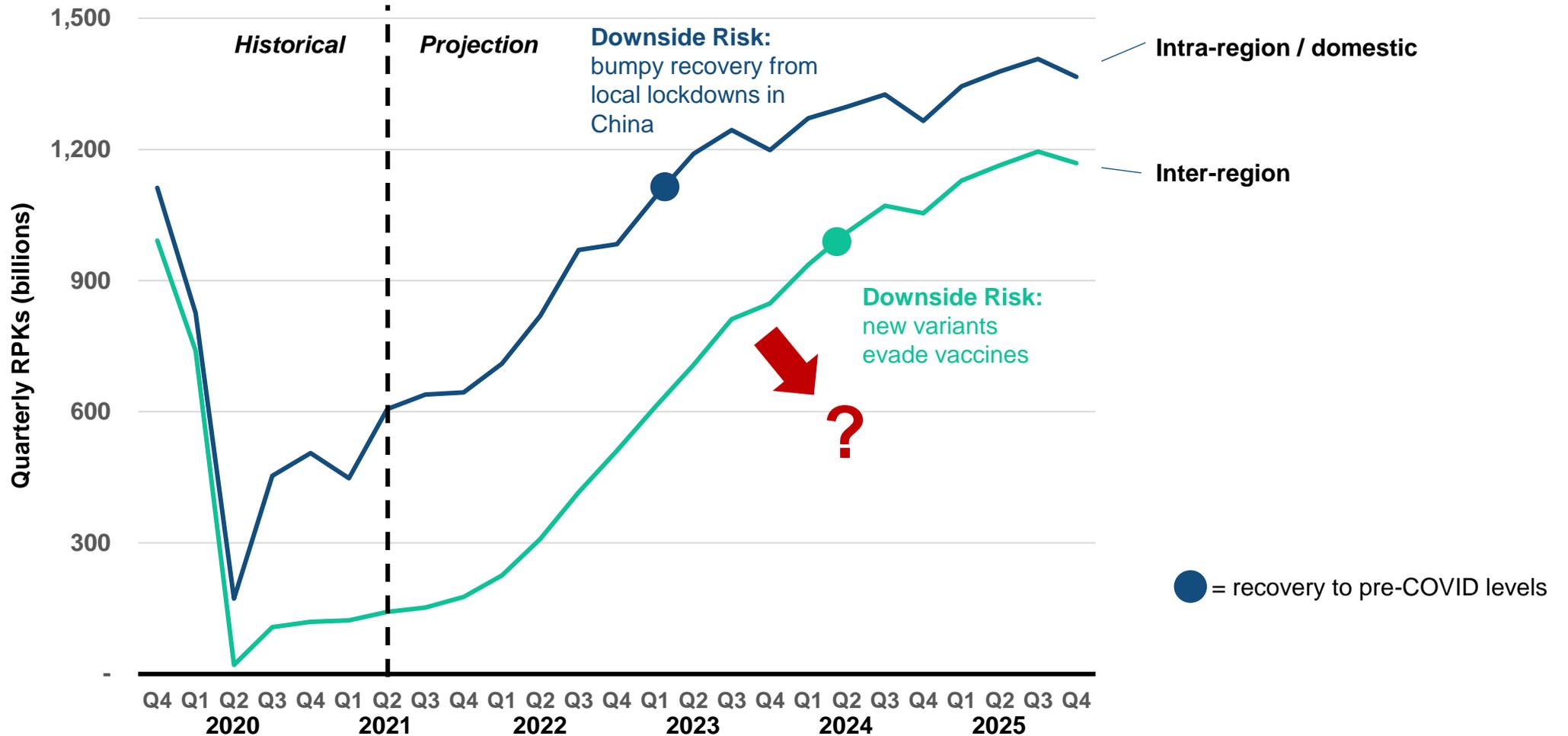


Government Responses

- › Extremely difficult to coordinate a consistent global scheme of COVID-related travel restrictions
- › As a result, a heavy layer of unpredictability may hamper international travel for a long time

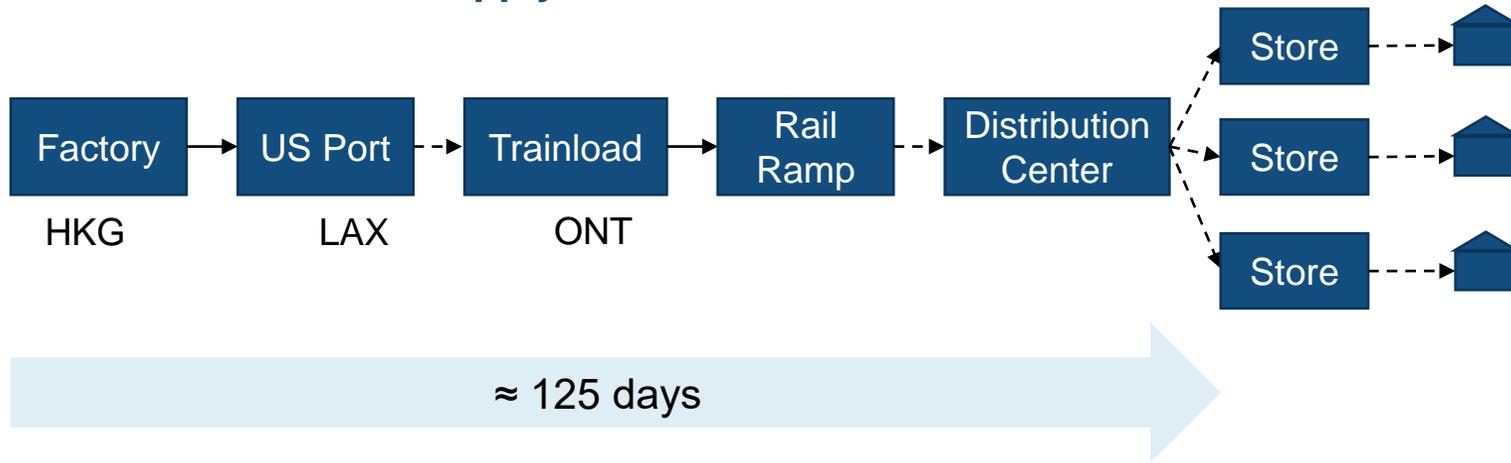
The recovery of air travel will be bifurcated between intra-region and inter-region travel

RPK Forecast by Flow Type, Intra-Region and Inter-Region

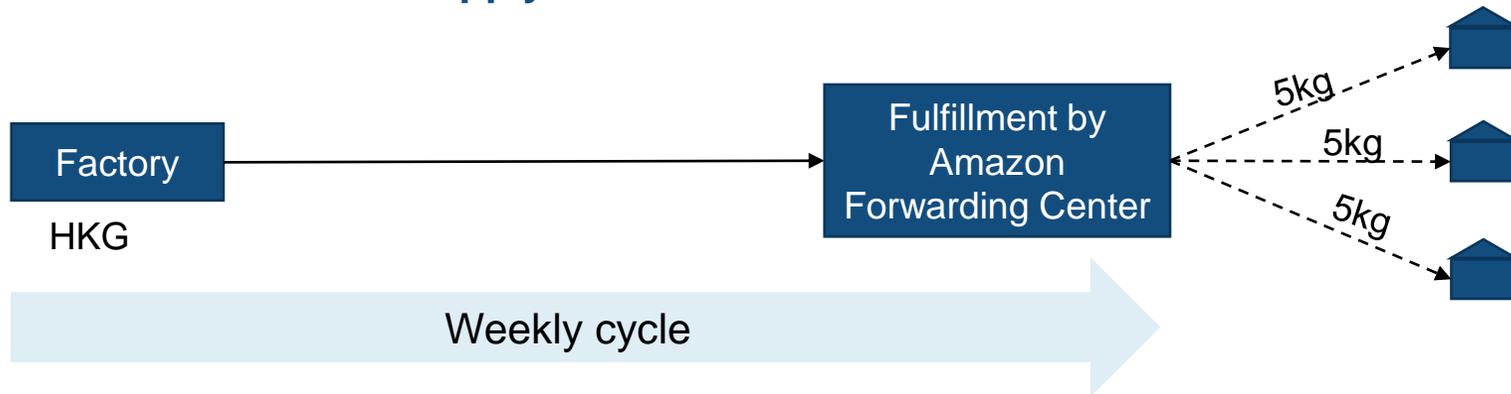


However, shifting supply chains are driving long-term growth in air cargo

Conventional Retail Supply Chain



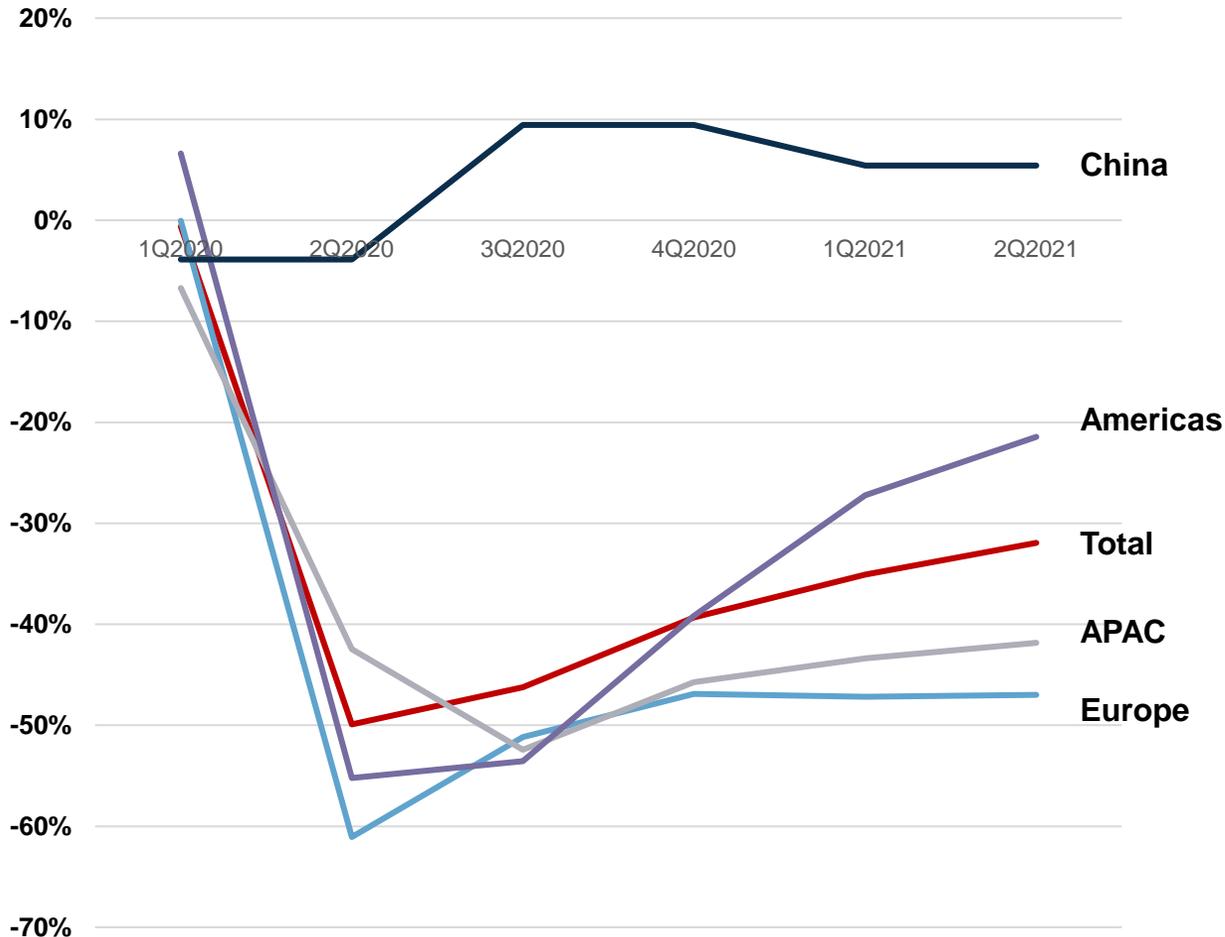
E-commerce Retail Supply Chain



Structural tailwind for Air Cargo

MRO spending remained resilient in China and nearly recovered in the US...elsewhere it remained well below pre-COVID levels

Quarterly Airline MRO Expenditures* By Region



(*) Versus same quarter 2019, 44 airlines covered

- › Global MRO spending remains >30% below pre-COVID levels
- › China and the US are the most resilient MRO markets
- › Europe and APAC remain well below pre-COVID spending levels

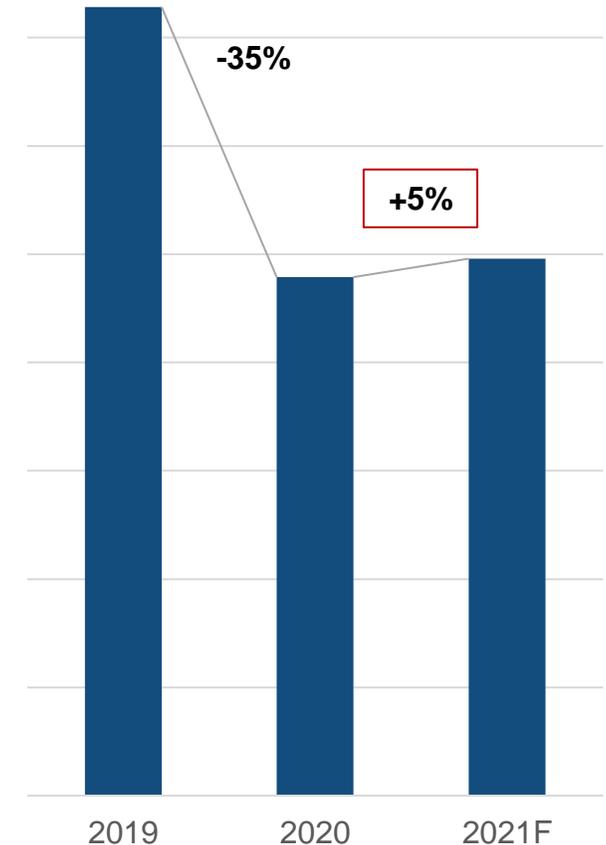
High-level estimates point at a full-year increase of MRO expenditures of 5 percent in 2021

MRO Outlook for Second Half of 2021 (Trajectory Versus Similar Quarter 2019)

Region	Q3	Q4	Commentary
China			<ul style="list-style-type: none"> August outbreaks impacted airline utilization. Capacity could come back in Q4, but road is bumpy
APAC			<ul style="list-style-type: none"> Little improvement in utilization expected due to high case loads
Americas			<ul style="list-style-type: none"> Close-to-full domestic capacity towards summer However, outbreaks of Delta variant in August meant fewer-than-expected paying passengers. No meaningful growth expected in winter MRO activity beyond typical peak
Europe			<ul style="list-style-type: none"> A few airlines may embark on ambitious preparations for next summer, but most will need to manage costs carefully



2019-2021F Airline MRO Expenditures



Airlines post-COVID will be very focused on cost, and simultaneously more dependent on the supply base

Air Travel Post-COVID

- › Market uncertainty
- › Reduction in business travel
- › Leisure travel is new center-of-gravity

Airline Business Impact

- › LCC growth, while traditional airline business models under threat
- › Short planning horizons
- › Staffing challenges
- › Strict cost regime and cash-out restrictions
- › Greater focus on cargo



Implications for Airline MRO & Suppliers Requirements



Slimmer airline organizations

Greater dependency on suppliers

Inventory burn & green-time management

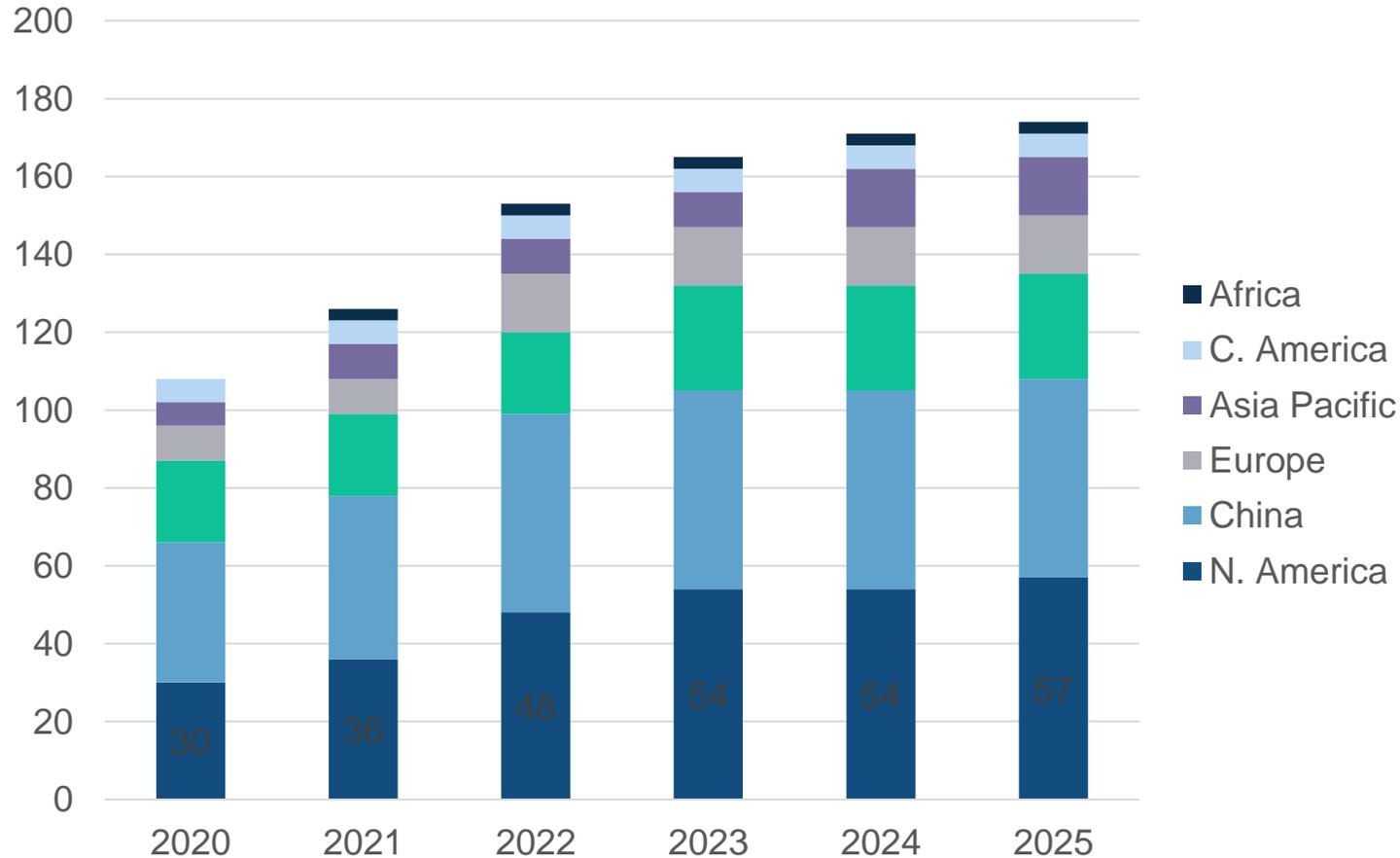
Alternative materials & repairs

Need for supplier flexibility

Modifications - including Passenger-to-Freighter conversions

Passenger-to-freighter conversions are expected to reach historical levels - many facilities are fully booked through ~2024

2020-2025 Estimated Global Freighter Conversion Capacity (# aircraft)



Winners: larger variants & ample feedstock

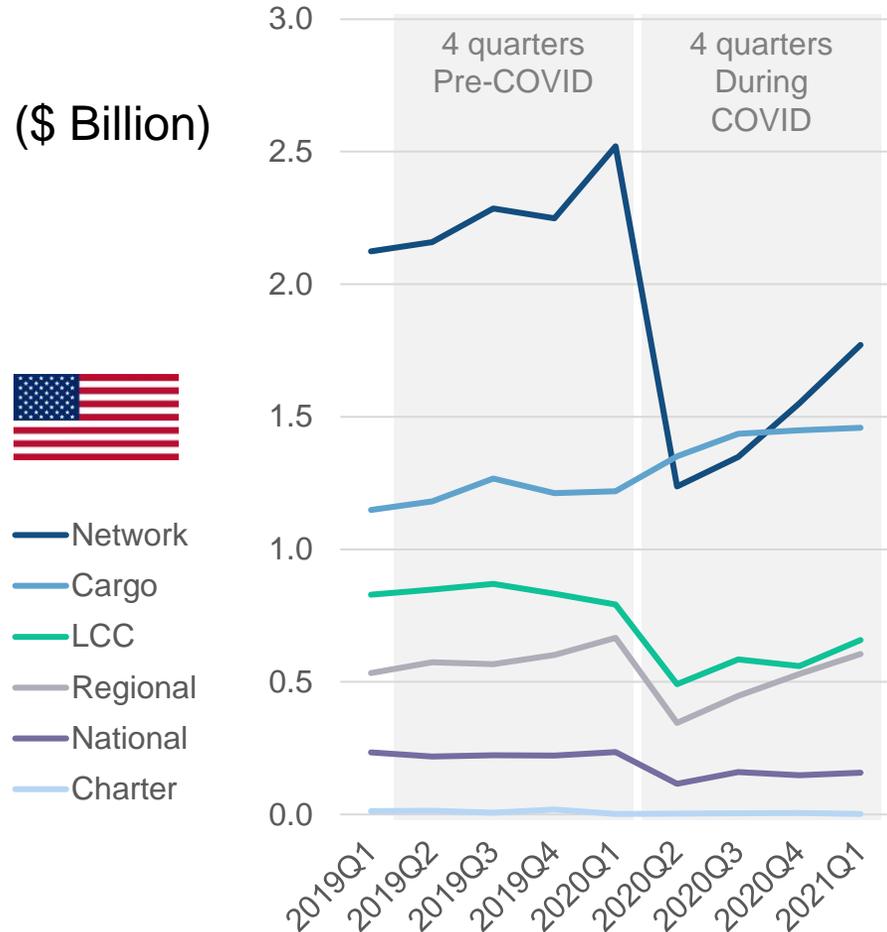
A321, 737-800, A330-300, 767-300, 777-300ER

Losers: smaller variants & declining feedstock

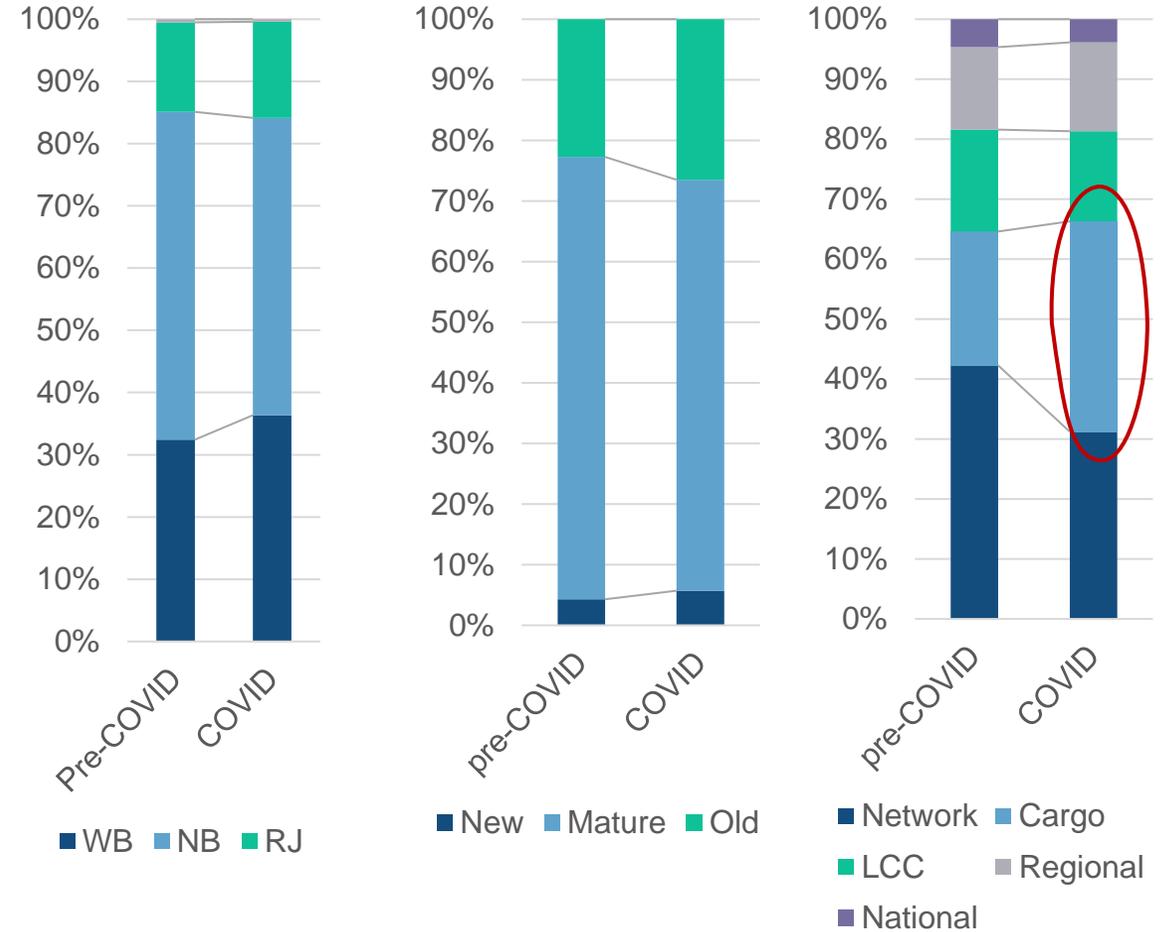
A330-200, A320, 757, 737 Classic, 737-700

US airline MRO numbers show the significance of cargo operators in a post-COVID environment, and how this alters MRO demand composition

US Airline Quarterly MRO Expenditures



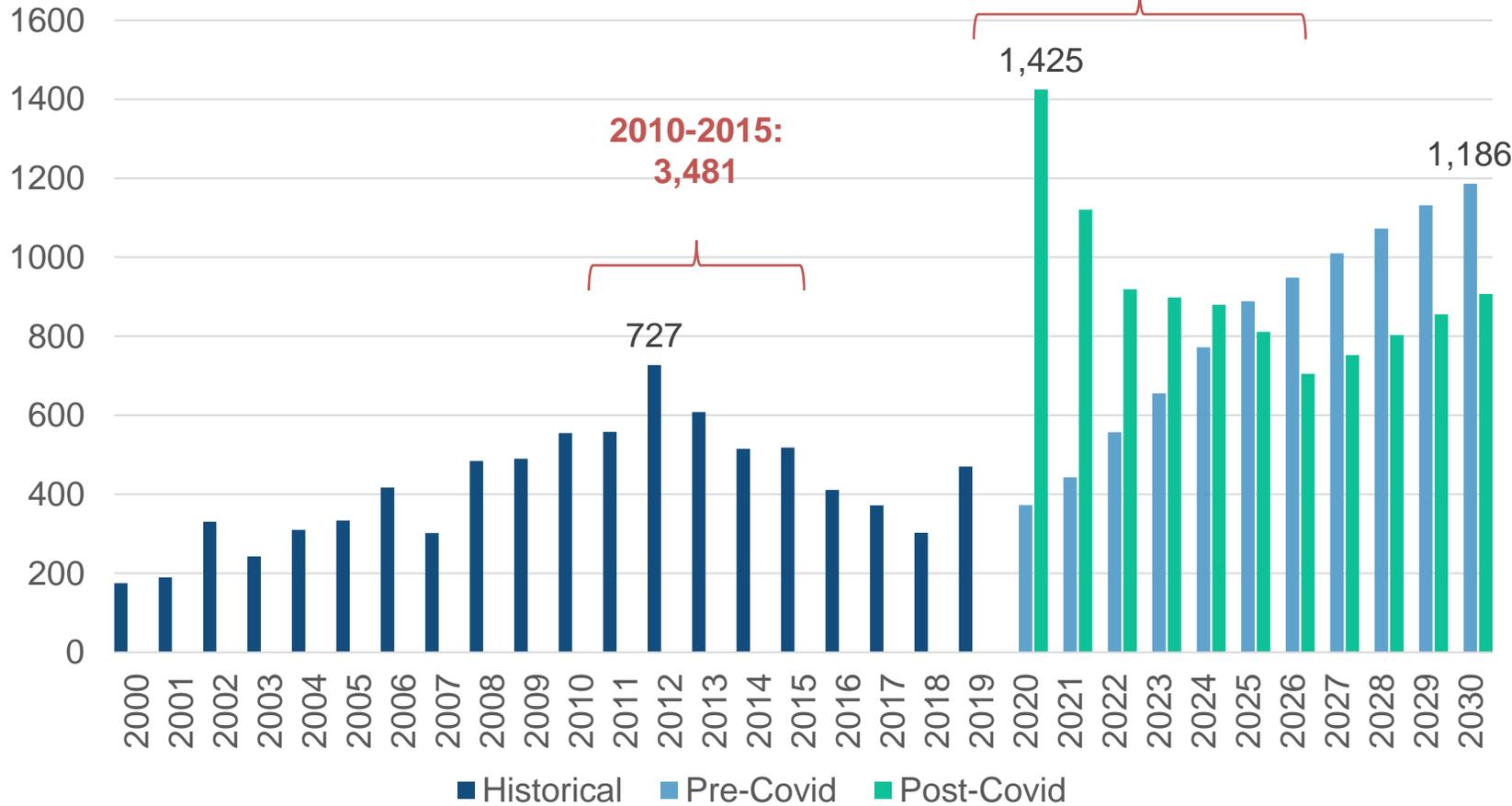
US MRO Expenditures 4 Quarters Pre- and During COVID



Fleet demographics coupled with COVID-induced fleet removals will result in record retirements

Historical, Pre-Covid, and Post-Covid Retirements

2020-2025:
Post-Covid Forecast: 6,054
Pre-COVID Forecast: 3,690



- › Not all retirements turn into part-outs
- › Aircraft part-outs to reach 700-800 per annum
- › Surplus parts market to grow from \$2.2 Billion pre-COVID to \$4.3 Billion
- › A320, 737, 777 and A330 parts will contribute the most to USM growth

Suppliers of integrated component support are being asked to provide greater flexibility



Changing Nature of Integrated Component Support Contracts

Airline Needs

- › Greater need for supplier to cover operative risk
 - Smaller airline engineering / purchasing organization
 - Dispatch reliability still important - EU261 claims need to be avoided
- › Greater need for flexibility
 - Pandemic-specific regulations in contract
 - Remove rule for minimum flying hours
 - Flexible contract periods?
 - Need to conserve cash → updated payment terms
 - Less-inclusive contracts
- › Cost still of utmost importance

Supply Side Implications

- › Becomes very important to build USM acquisition & management capabilities
- › Need to closely monitor market developments which customers will make it through the crisis?
- › New contracts need to carry financial securities due to the risk involved
- › Changed cash flow
- › How make business case for customer-related investments?



- › Concentration of supply base of integrated providers
- › Virtual pools
- › Partnerships

A dynamic time awaits the MRO industry on multiple fronts

COVID Recovery – Implications for MRO Suppliers



OEMs

- Aircraft OEMs revising aftermarket goals and narrowing offerings, including broad support
- Component OEMs to position offerings to a more price-sensitive customer, including USM
- Engine OEMs need to watch supply chain to handle coming ramp-up. Need to carefully manage their supply chain to prepare for the ramp-up



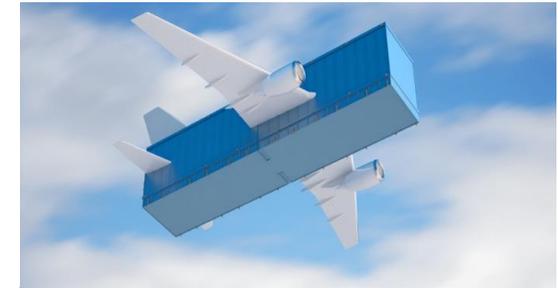
MROs

- Integrators prepare for more flexible contracting
- Independents poised to a period of growth - well-positioned to support the freighter fleet
- Must cope with human capital constraints, preparing for ramp-up
- MRO consolidation (incl partial sell-off of Lufthansa Technik?)



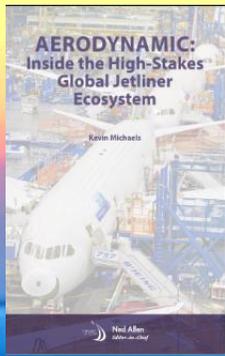
USM Suppliers*

- \$2 Billion pre-COVID, growing to \$4.5 Billion in a few years
- A320ceo, 737NG, A330, 777 key platforms
- Will impact airline sourcing, OEM aftermarket revenue streams and become central in most support contracts



Passenger-to-Freighter Conversions

- Structural trends favoring long-term cargo growth
- Cargo important piece of airlines' revenue mix
- Majority of supply of freighters to come from PTF conversions
- Significant ramp-up in PTF conversion capacity
- Over-supply mid-decade?



AeroDynamic
2019 Winner
Choice Outstanding
Academic Title Award

AeroDynamic
ADVISORY

Thank You!

Jonas Murby
Principal
jmurby@aerodynamicadvisory.com

+1 (734) 773-3899

121 W Washington Street, Suite 400
Ann Arbor, MI 48104

www.aerodynamicadvisory.com

Questions?



Jonas MURBY

Principal – AeroDynamic
Advisory

jmurby@aerodynamicadvisory.com



Navigating through the pandemic



Swaran SIDHU

Head of Fleet Technical
Management – easyJet

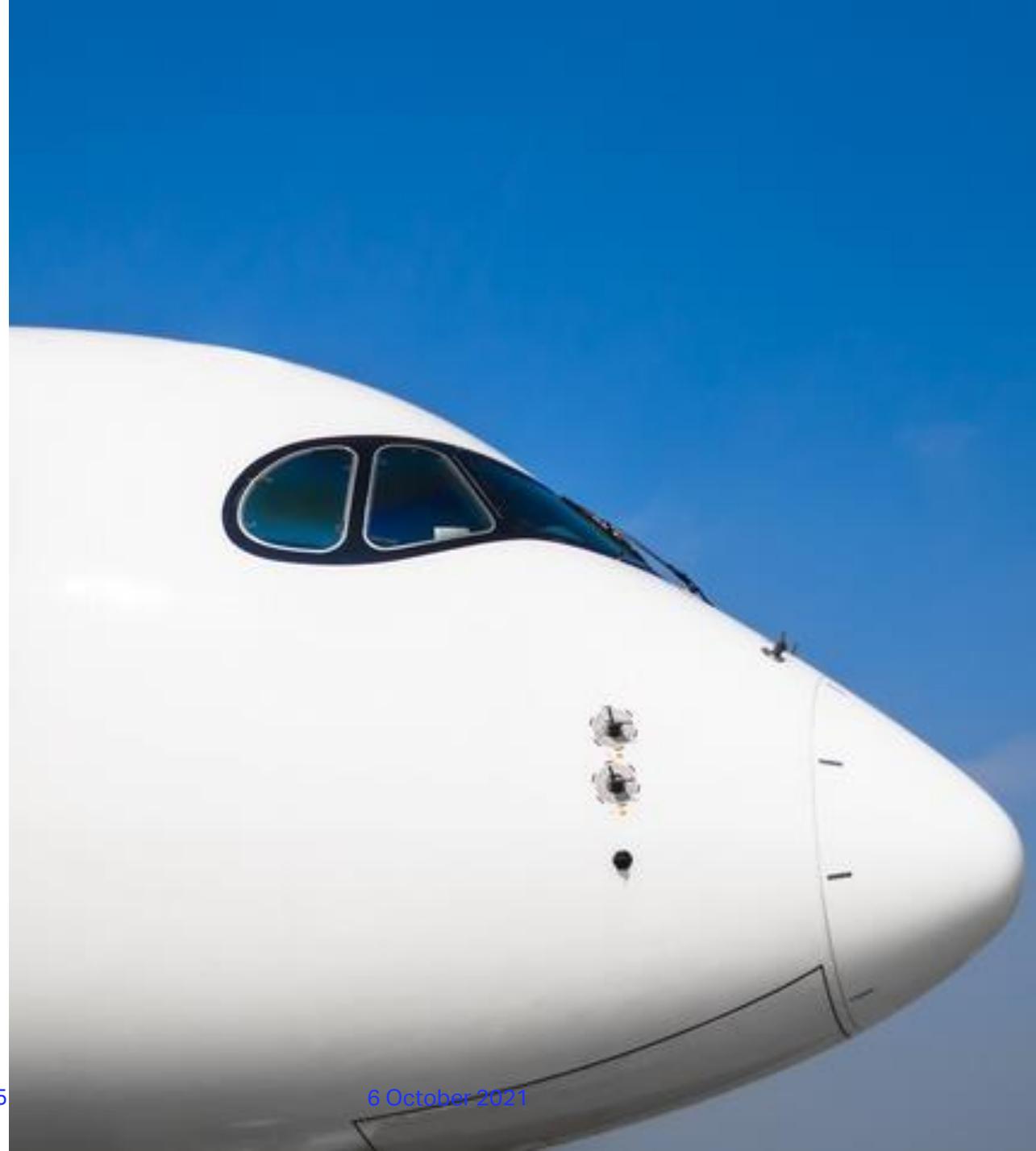
swaran.sidhu@easyjet.com

IATA
17th MAINTENANCE
COST CONFERENCE
WEBINAR SERIES

Ep 4 - Operating in the post pandemic

35

6 October 2021

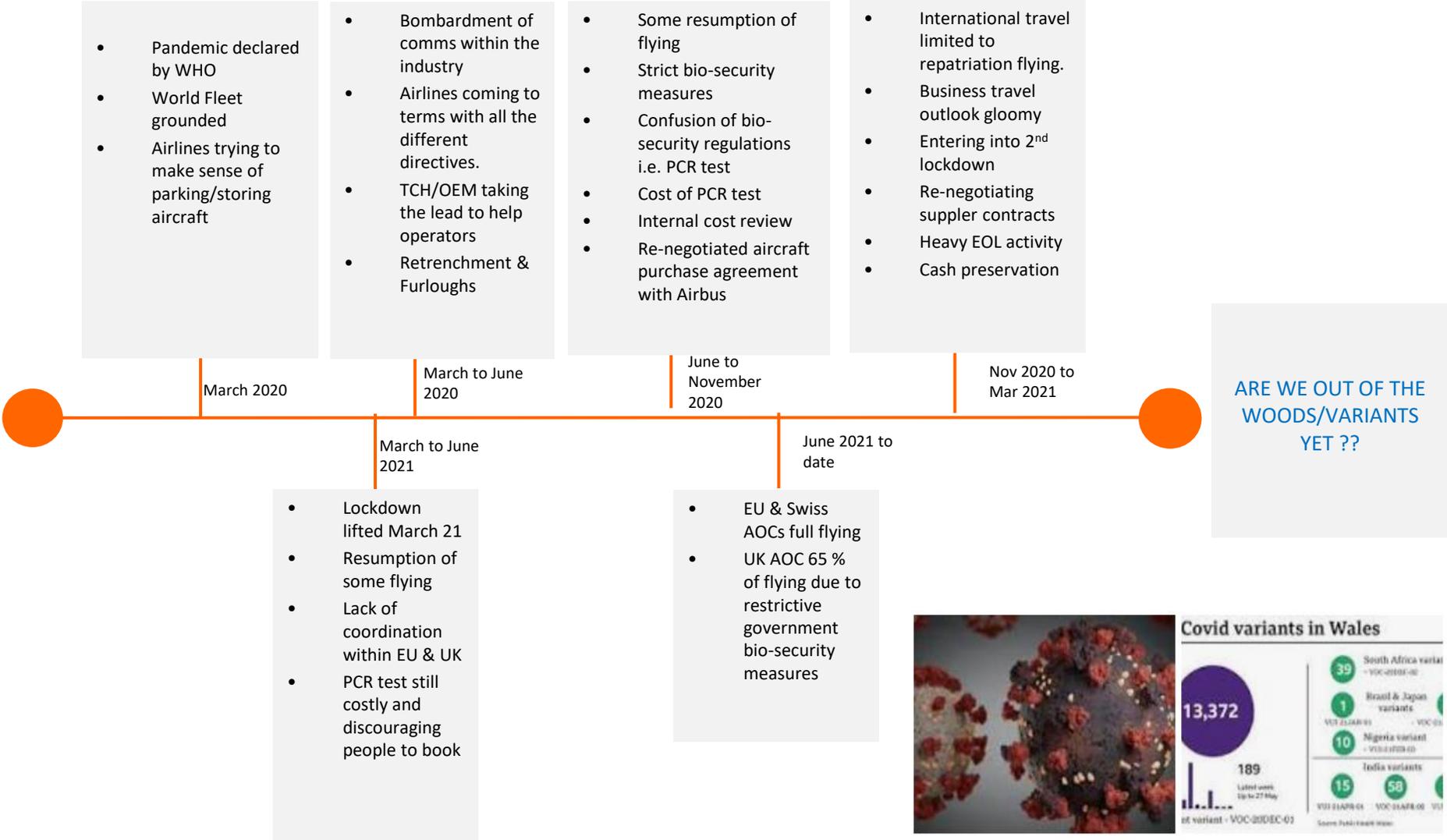


Navigating through the pandemic

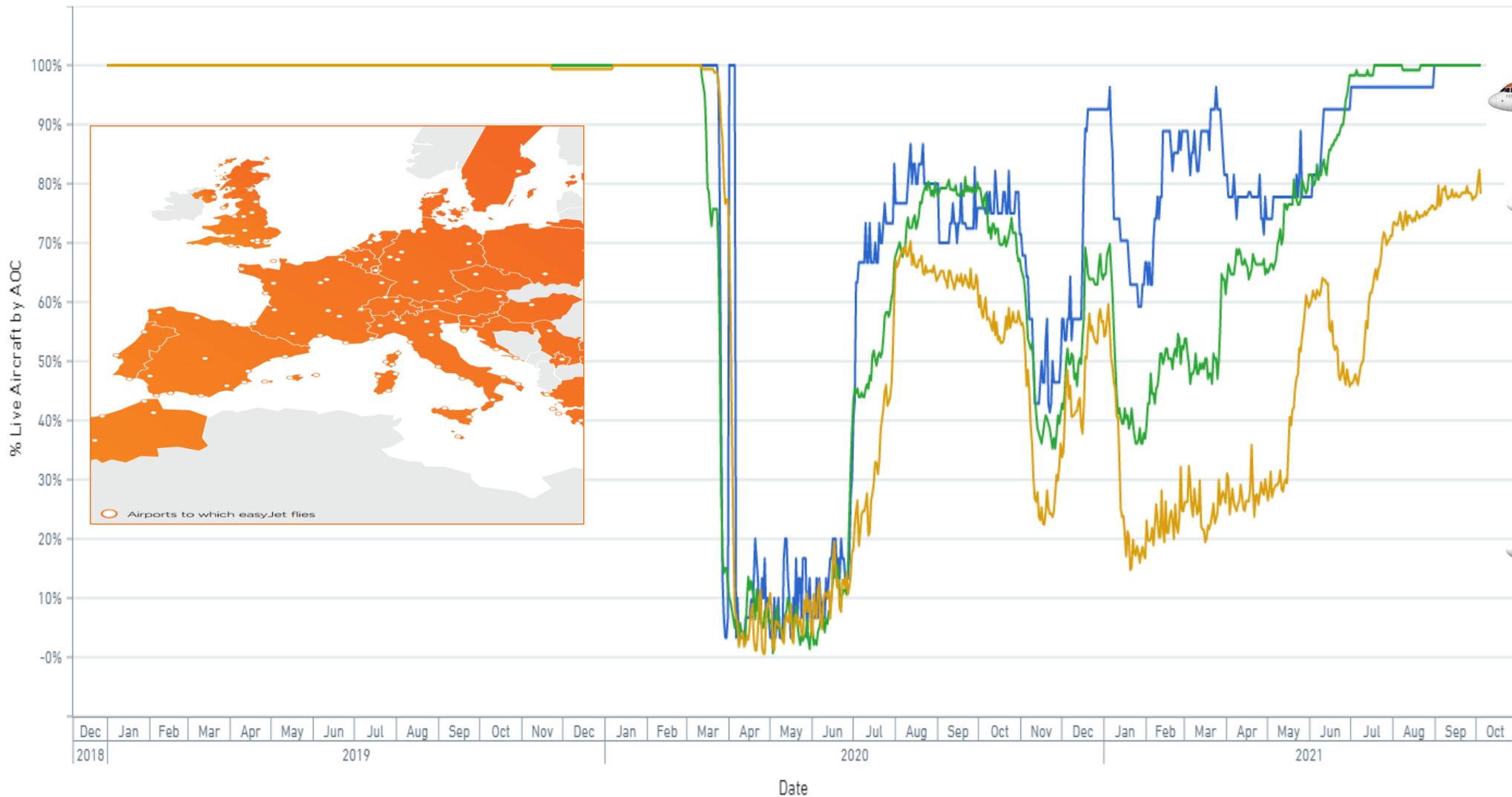
SWARAN SIDHU
Head Of Fleet Technical Management

europe by
easyJet

The pandemic path reminder



Our airlines' operation



A321 NEO



A320 NEO

- SWISS_AOC
- EUR_AOC
- UK_AOC

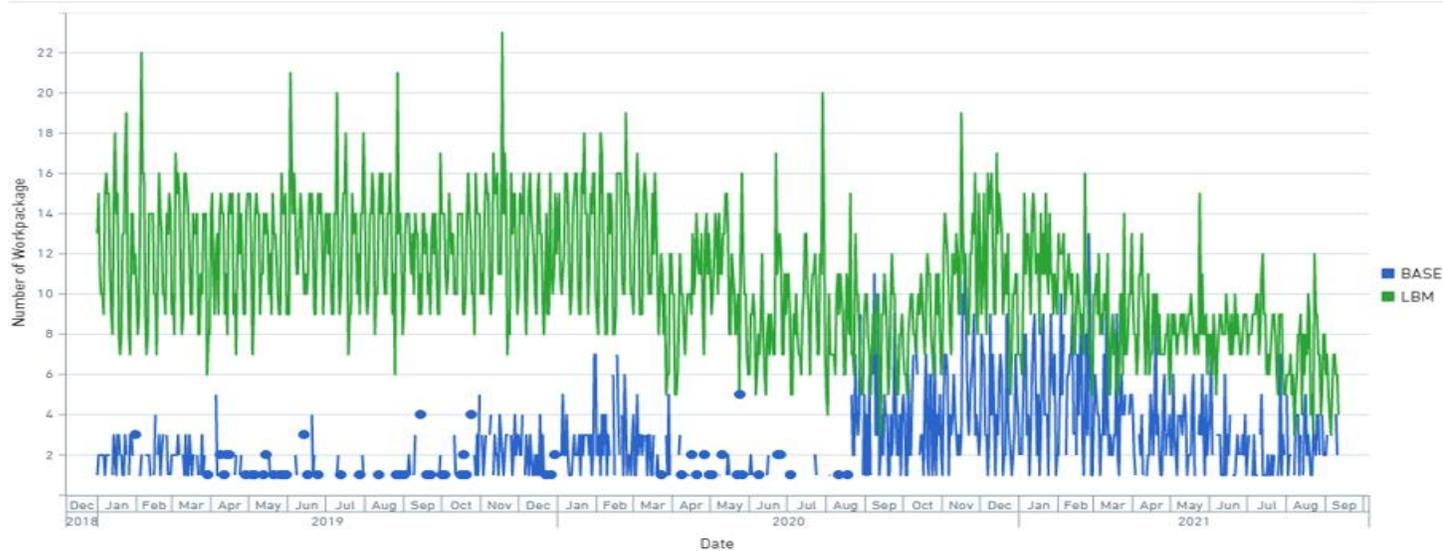


A320 CEO



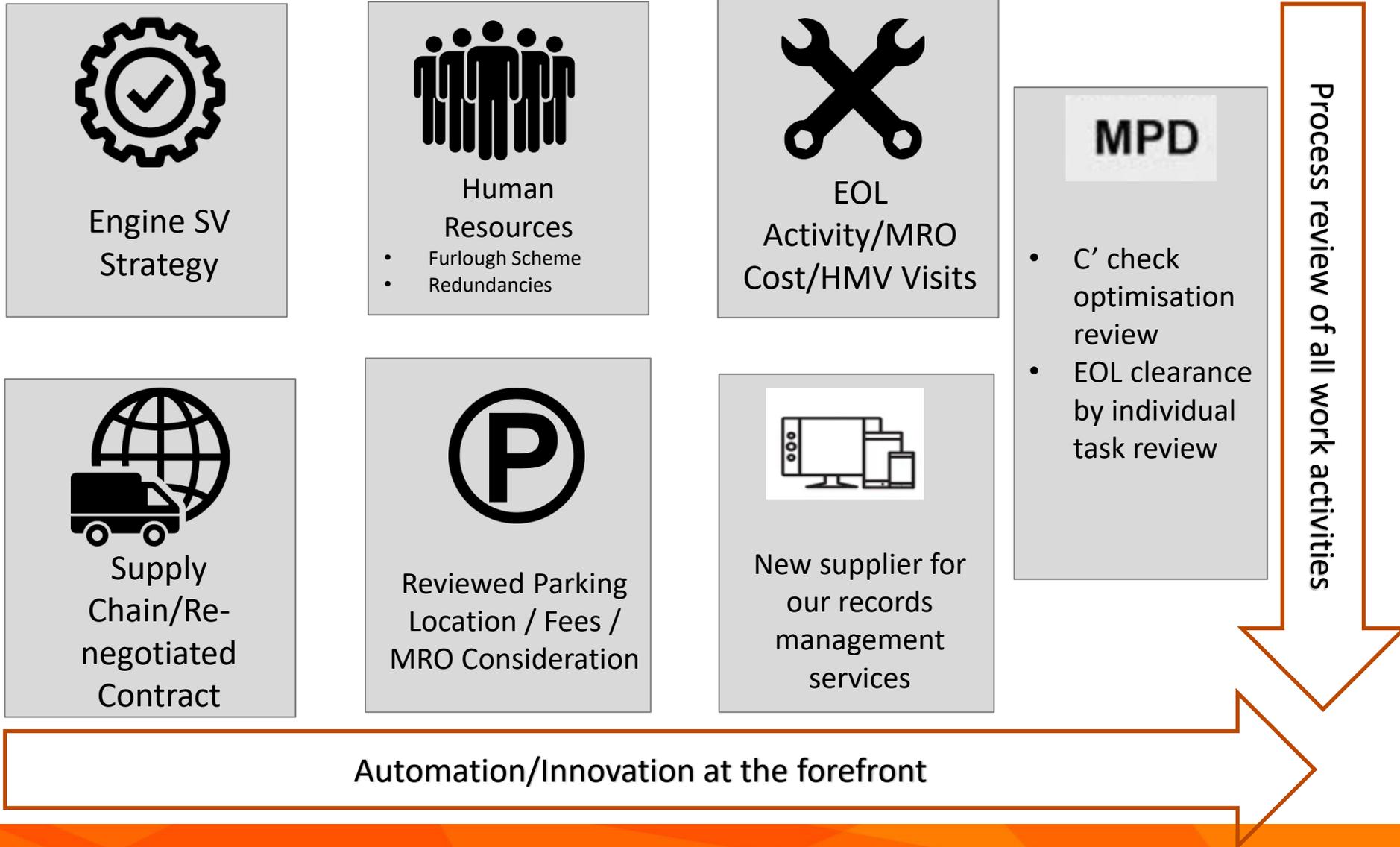
A319

Our Maintenance activity

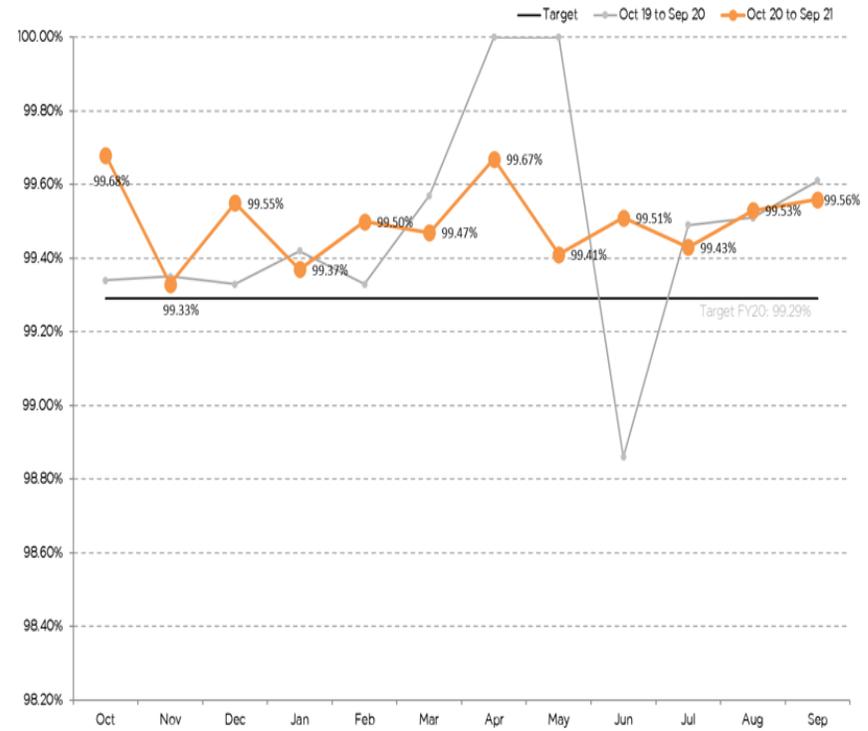
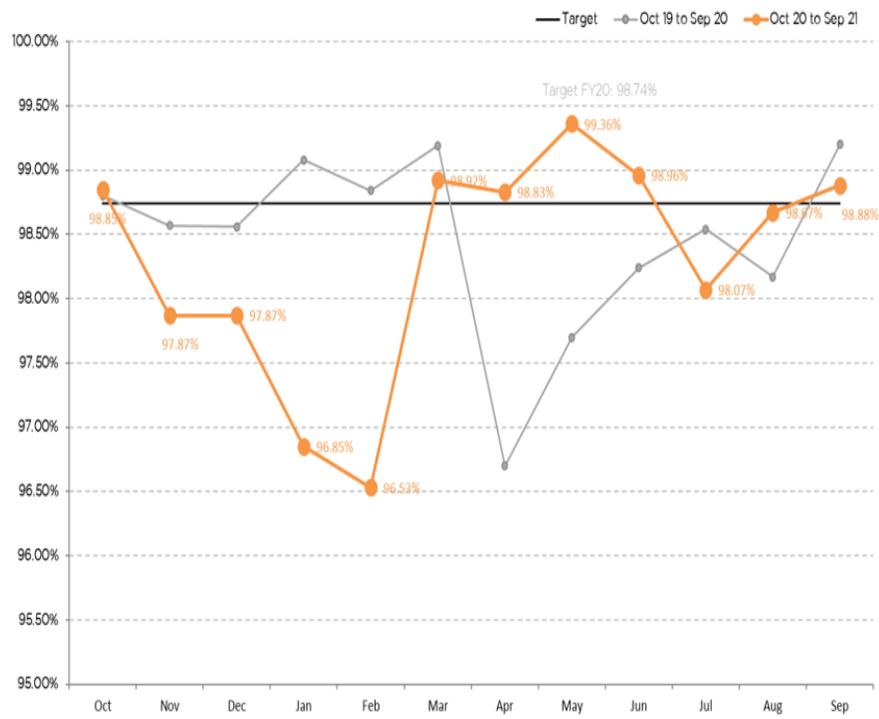


Older MSNs
rested to
delay
HVM/Costly
Inputs

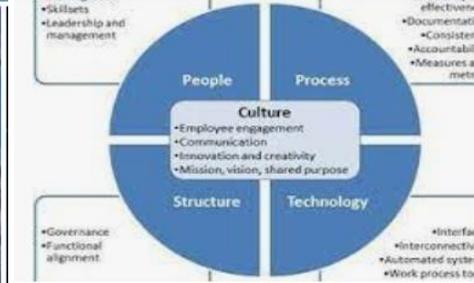
Our Cash Preservation strategies



Our Technical operations KPI



The new normal



Signs of Recovery??



NEWS

Miami Airport is first U.S. airport to pilot COVID-19 detector dogs



NEWS

Emirates accelerates digital innovation for passengers



NEWS

Latest EUROCONTROL data reveals aviation's COVID summer recovery



NEWS

IATA July passenger traffic report but remains below pre-COVID-19 levels



NEWS

Mumbai Airport attains ACI Health Accreditation for second year running



NEWS

EUROCONTROL data shows delays caused by passenger COVID forms

Summary

- Embracing/Embedding the new normal
- View the crisis as an opportunity
- Show good leadership and take your people through this journey
- Learn the lessons, document them and store them safely for the future.....(tell your grandchildren this story)

We are now in a Recovery Phase



We need to get to a Sustainable Growth Phase

THANKS!

europa by
easyJet

Questions?



Swaran SIDHU

Head of Fleet Technical
Management – easyJet

swaran.sidhu@easyjet.com



Useful links

- Maintenance Cost Technical Group
www.iata.org/mctg
- Technical Operations Working Group
www.iata.org/tog
- [Safely Restarting the Aviation Industry](#)



Thank you!

For more information on MCC 2021,
please visit www.iata.org/mcc

Contacts

- Chris Markou, markouc@iata.org
- Geraldine Cros, cros@iata.org

See you next year for MCC 2022!

