

**IATA**

**16<sup>th</sup> MAINTENANCE**

**COST CONFERENCE**

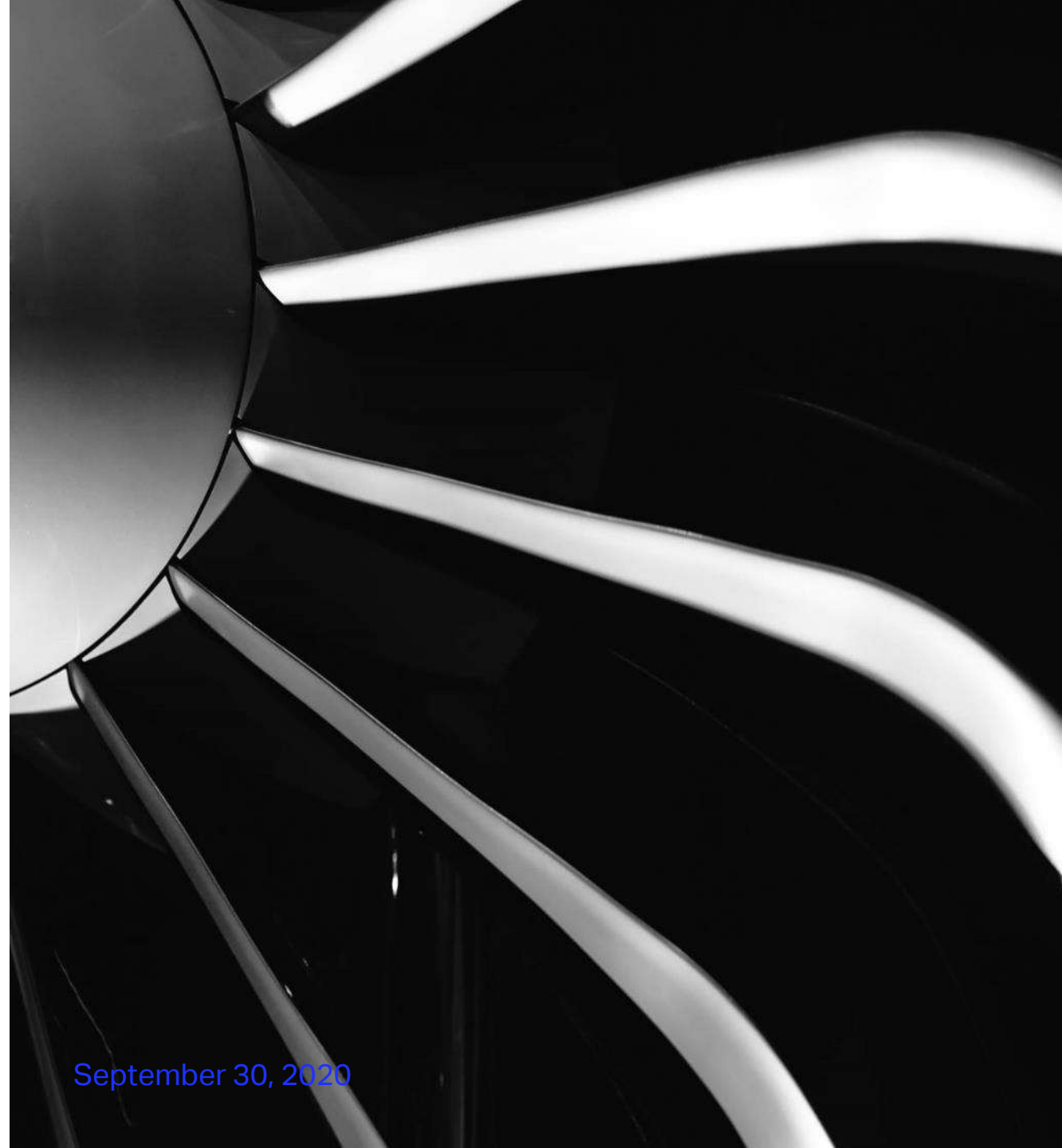
**WEBINAR SERIES**

**Episode 4:  
The role of used serviceable  
material (USM) in the  
industry restart**

**Wed. 30 September 2020 - 7:30-9:30am EDT**



- This session is **recorded**.
- Your mic is automatically **muted**.
- **Poll:** Click on Submit once you have selected your answer
- Use the **Q&A feature** on the right side of your screen to submit your questions to our panelists



# Competition Law Guidelines

IATA's Legal Anti-Trust Counsel will  
be screening the questions



Daniel Kanter

Assistant General  
Counsel, IATA

[kanterd@iata.org](mailto:kanterd@iata.org)

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# Opening Remarks

- Role of the [MCC](#)
- MCTG Data collection  
⇒ [www.iata.org/mctg](http://www.iata.org/mctg)
- [IATA resources about COVID](#)
- Poll and Q&A

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- Our moderator today:



Chris MARKOU

Head, Operational Cost  
Management – IATA

[markouc@iata.org](mailto:markouc@iata.org)

# Previous Episodes

- Episode 1
  - Economic context and forecast; aircraft parking/storage strategies
- Episode 2
  - Adapting to exceptional circumstances (transport of cargo in the passenger cabin; aircraft cleaning & disinfecting; fuel testing & biocide treatment)
- Episode 3
  - How COVID-19 is reshaping the aircraft leasing and MRO businesses

Watch all episodes on  
[www.iata.org/mcc-2020](http://www.iata.org/mcc-2020)

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# Episode 4 - Agenda

- Opening Remarks & Introductions
- Trends on USM Market
  - GA Telesis
  - Aerodynamic Advisory
  - VAS Aero Services
- Incident Clearance Statement (ICS)/Non-Incident Statement (NIS) – IATA
- Consumable Stock Optimization with Data Science and AI – Icelandair
- MRO SmartHub – IATA
- Episode 4 & MCC 2020 Wrap-up

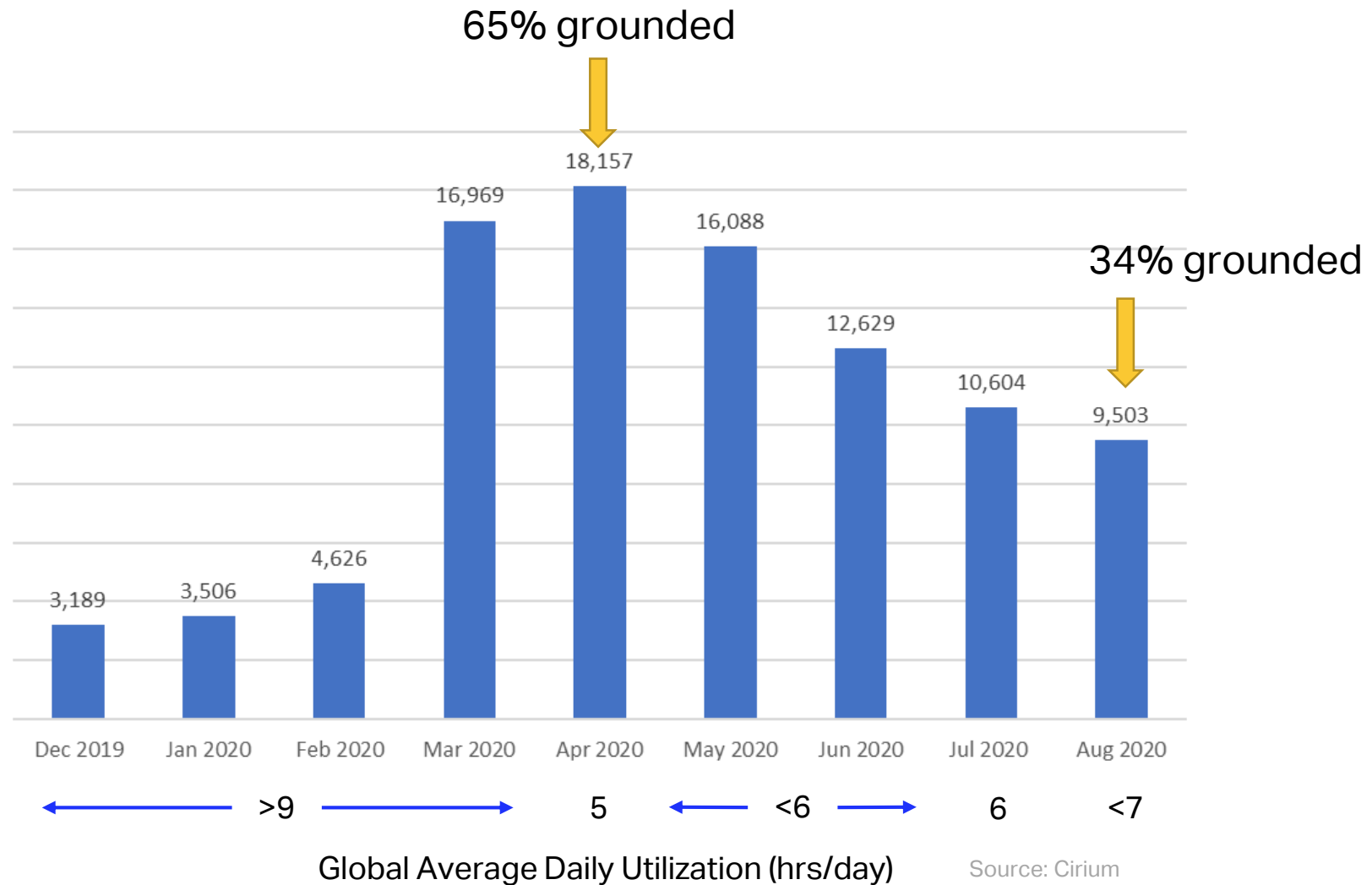
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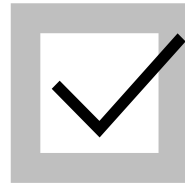
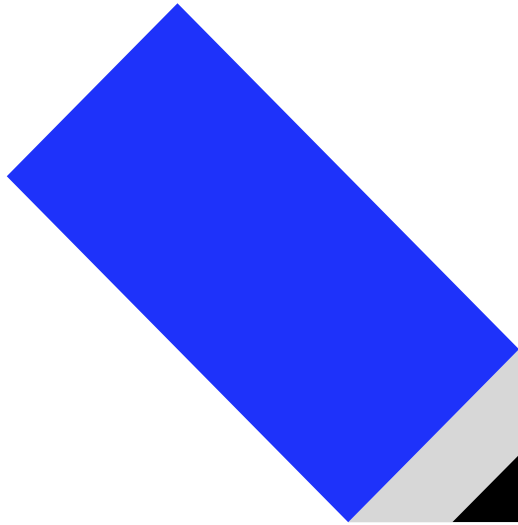
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# COVID-19 impact on world fleet



# Poll



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# Oops, technical glitch here!

Please go to [page 54](#) for the poll results.



# Introductions



**Chris MARKOU**

Head, Operational Cost Management – IATA

[markouc@iata.org](mailto:markouc@iata.org)



**Abdol MOABERY**

President & CEO – GA Telesis

[amoabery@gatelesis.com](mailto:amoabery@gatelesis.com)



**Jonas MURBY**

Principal - AeroDynamic Advisory

[jmurby@aerodynamicadvisory.com](mailto:jmurby@aerodynamicadvisory.com)



**Tommy HUGHES**

President & CEO – VAS Aero Services

[tommy.hughes@vas.aero](mailto:tommy.hughes@vas.aero)



**Jens BJARNASON**

SVP Corporate Affairs – Icelandair

[jensb@icelandair.is](mailto:jensb@icelandair.is)



**Garath HARRIES**

Product Manager and Business Development for MRO SmartHub – IATA

[harriesg@iata.org](mailto:harriesg@iata.org)



Episode 4  
The Role of Used Serviceable  
Material (USM) in the Industry  
Restart

Presented by:  
Abdol Moabery, President & CEO



GA Telesis is the only aftermarket company with significant operations on five continents



Our shareholders are GA Telesis Founders, Tokyo Century Corporation and All Nippon Airways Trading Co. Ltd

# The EVOLUTION of the USM Market

## Opportunist Era

1950s-1990

- USM suppliers were not very prevalent
- USM was not widely accepted by airlines
- Referred to a surplus parts



## Sector Expertise Era

1990-2001

- Many new companies emerge from pioneers and early adopters
- OEMs take notice and a few enter the surplus market sector
- More and more airlines start integrating surplus parts into their maintenance philosophy

## Sophistication Era

2001-2020

- The USM market was born and money poured in
- Sophisticated companies entered the USM market
- Technologies were developed to help airlines manage USM
- Almost every airline in the world adopted USM integration
- Almost Every OEM entered the USM market



## Smart Data Era

2020 – Going Forward

- Unprecedented inventory levels of USM will come to market thru 2030
- Buying decisions will be made via algorithmic adaptation models
- A constant drive towards optimization will result in a need for less inventory



## LET'S LOOK BEHIND THE SCENES



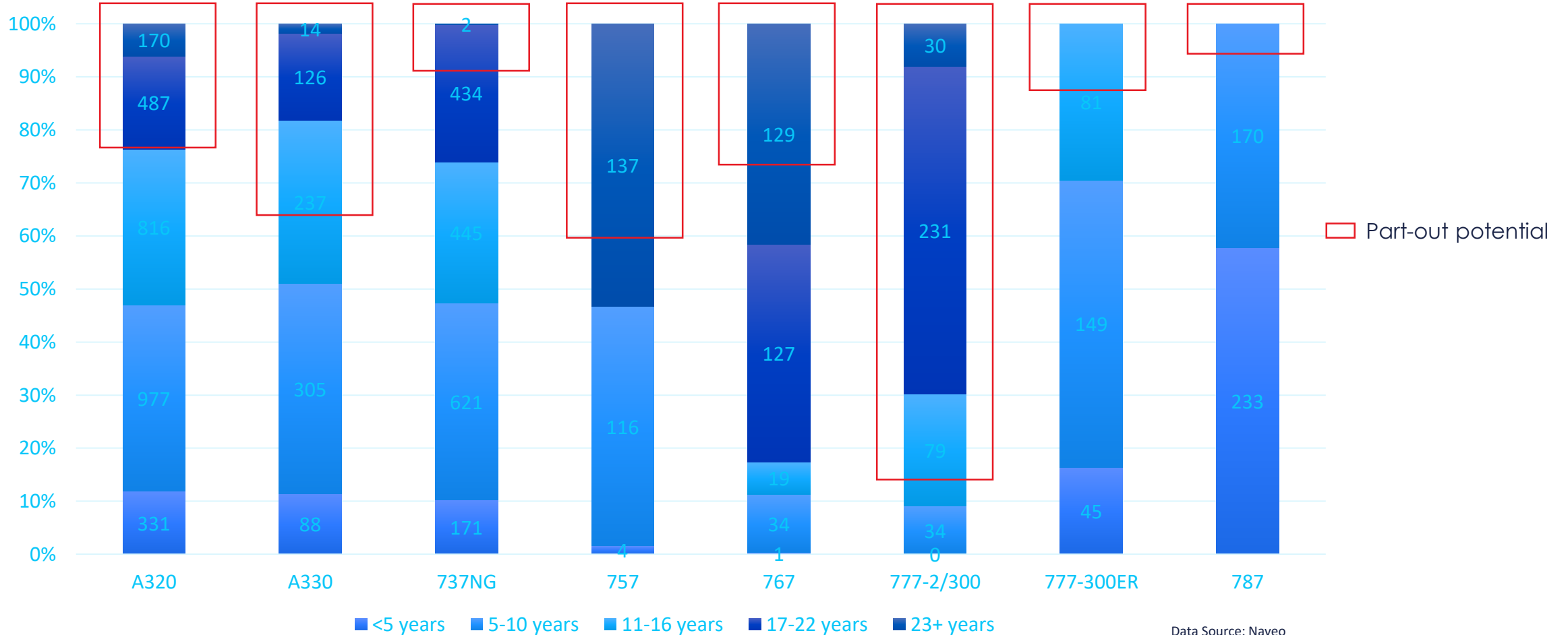
**I am purposely not including MD-80s, 737 Classic, A340 & A380 et al as they were in distress prior to COVID-19**

# Some Parked Aircraft Will be Parted-out Prematurely Due to a Lack of Demand



The problem is exasperated for engine OEMs because of the amount of maintenance deferrals due to available Greentime

## Vulnerable - In Demand - Key Aircraft Models



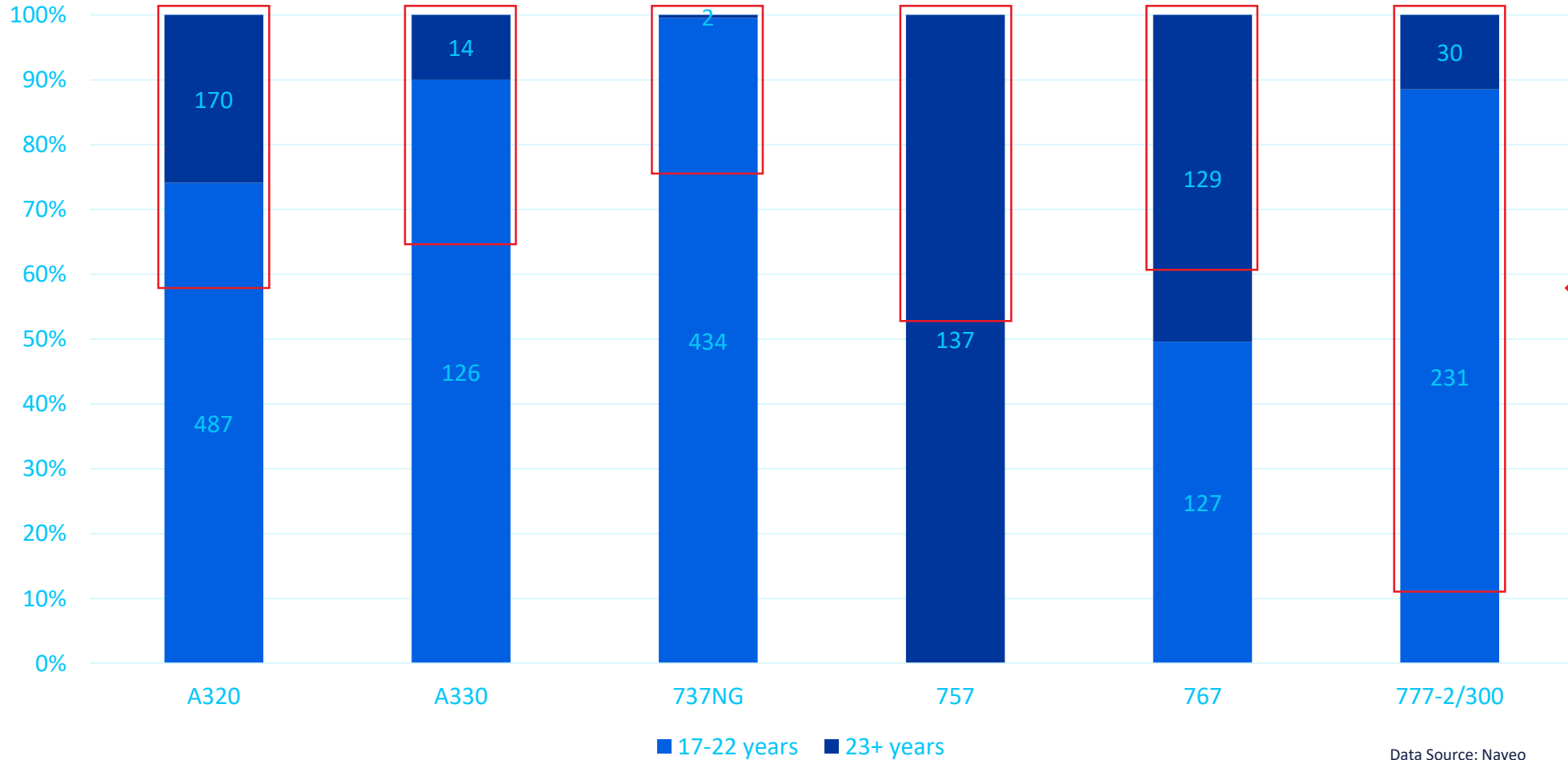
Data Source: Naveo

# Digging Deeper - Maintenance Cycles May be a Driver as to What gets Parted-Out



The A330-300 makes a great freighter, but adoption has been slow  
The 777-2/300 (non-ER) will vastly go to part-out thus saturating the market for the foreseeable future

The 737, 757, 767 have some level of protection for those specific aircraft that are freighter candidates



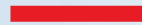
Over 1,000 aircraft at risk of premature part-out

Data Source: Naveo





## SO WHAT'S HAPPENING IN THE USM MARKET TODAY?





# The Engine USM Market Will Feel the Impact

This downcycle is seeing enormous pressure on older CFM56-5/7, V2500-A/D, RB211-535 & Trent 700/800, PW4000 (94", 100", 112"), CF6-80C2 and GE-90 engines

The sheer amount of Greentime that is coming available is causing maintenance deferrals on certain models that will last for up to 4 years

Post Greentime most engines will not be overhauled but rather disassembled where the USM will be used as an alternative to new and thus impacting the engine OEMs

The COVID-19 cycle is somewhat different than other industry cycles whereby there will be newer aircraft models retired prematurely thus putting GE90-115B, GENx, GP 7000, Trent 900 and Trent 1000 engines in the crosshairs

While there is little to no part-out market for the new-tech engines above, the availability of Greentime will impact engine MROs and OEMs as shop visits are deferred into the future

Due to the availability of significant amounts of USM it is more economically feasible to short-build engines thus impacting MROs and OEMs

# USM

## Engine Impact

T  
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D  
A  
Y



# The Airframe USM Market IS Under Constant Pressure

There is tremendous pressure on existing pooling and cost-per-hour models as airlines will favor a pay as you consume model

Airlines are parting-out their own airframes to harvest the key components that they consume and either sell, consign or scrap the remaining parts

Airlines are burning Greentime on major components like APUs and Landing Gear before consuming replacements or performing maintenance

Airlines are cannibalizing parked/stored aircraft before buying parts (new or USM). With many OEMs in the USM market it is hard for them to differentiate New part benefits from USM

Airlines are operating their newest most maintenance ready aircraft and parking/storing aircraft in need of maintenance or major parts

With the amount of USM available, the market prices are becoming commoditized more than before COVID-19 and therefore values are very volatile

# USM

## Airframe Impact

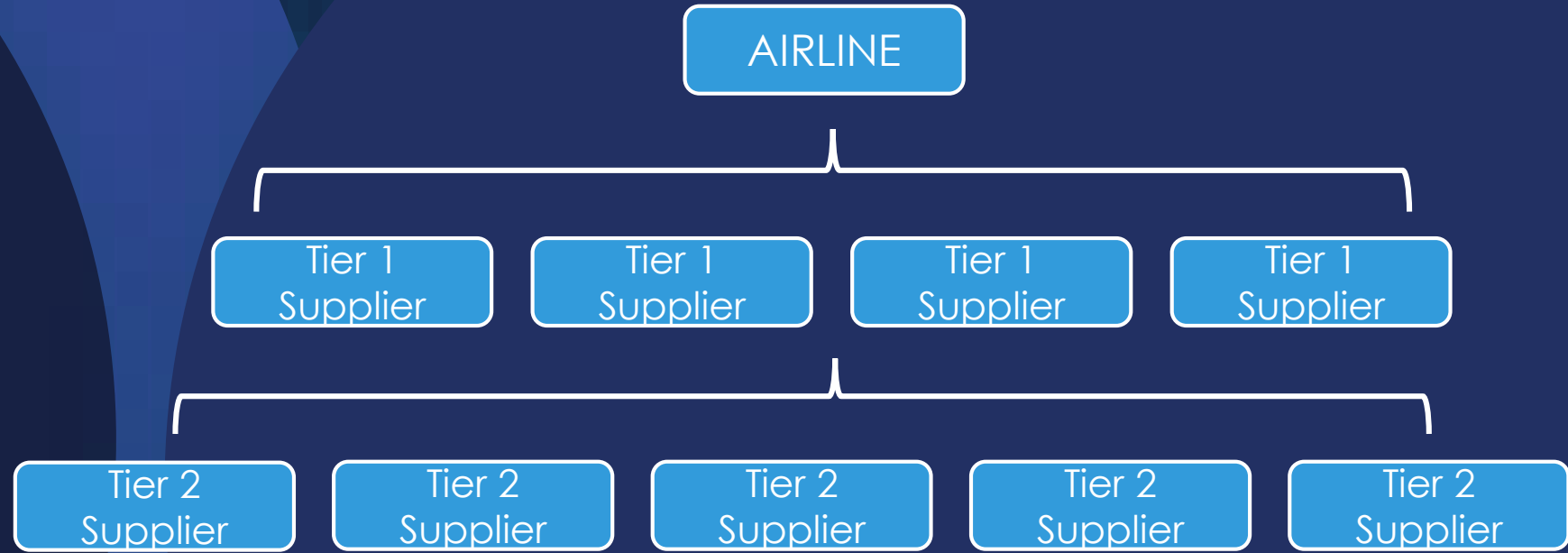
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# The Market is Heading Towards Supplier Tiering

# SUPPLIER Tiering

S  
H  
I  
F  
T



Airlines will gravitate towards larger suppliers because of their ability to maintain inventory levels sufficient to support their operations

Airlines will focus on suppliers capable of offering integrated services beyond just providing parts

Airlines will be drawn to USM providers that can provide financial structures around new and USM inventory

Airlines will look at suppliers to provide financial flexibility for the foreseeable future and this will take balance sheet strength

Tier 1 Supplier are: > USM \$150M Annual USM Sales  
OEMs  
Major Airline MROs



## WHAT WILL HAPPEN NEXT?



# Inventory Risk



Airlines will favor a model whereby  
the inventory that supports them does  
not reside on their balance sheet

Started with aircraft leasing and  
moved to include engine leasing  
Going forward...

## The Role of USM in the Industry Restart

- OEMs will try to play a more active role in USM to attempt to capture the displaced revenue lost from selling new replacement parts
- USM Suppliers will become more of a competitor to *OEMs NEW PRODUCTS* because of the sheer volume of USM inventory availability
- MROs will have to adopt an inventory rich model to support the airlines

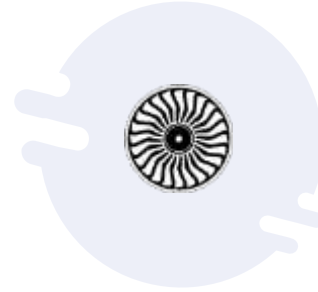


**USM Suppliers**  
**OEMs**  
**MROs**

## Airframe USM

Airframe USM Will Become an  
Extremely Volatile and Difficult Market

- ✓ While there will still be 1,000s of core fleet aircraft flying, the sheer number of available airframe parts from part-outs will depress pricing for years to come
- ✓ Airlines will be forced to part-out their own airframes because there will not be enough buyers for the volume of airframes coming to market
- ✓ Airlines will consume their own material versus buying
- ✓ Airlines will prefer to not own inventory

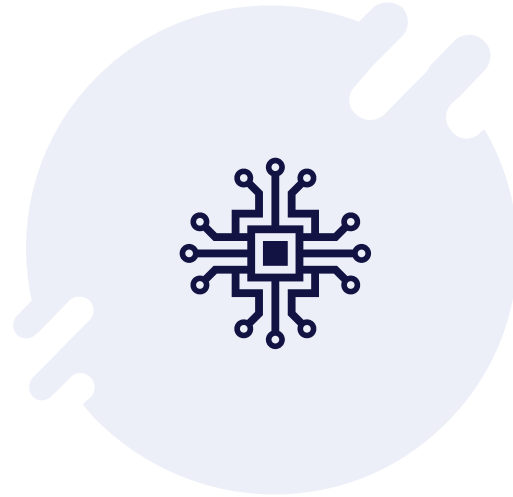


## Engine USM

Engine USM Will Hold Value  
for core fleet engines

- ✓ Models used for cargo aircraft as well as core Narrowbody will maintain strong demand
- ✓ Engine USM will be used as a cost saving mechanism for engine operators and owners
- ✓ Eases engine OEM advantage
- ✓ Can have increase MRO effect for some due to affordability of short build engines
- ✓ OEMs that have USM businesses will potentially have a conundrum – sell new parts or sell USM





## Digital Technologies & USM

The entire replacement part market, including USM, as well as MRO will shift towards a technology driven AI solution

- ✓ Combination of aviation sector expertise and technology combined with tools from the IOT
- ✓ Data science will be used for the creation of an AI system to be predictive versus reactive
- ✓ Blockchain system of record is a potential solution that solves for a critical trust component

# Four Things That Will Inevitably Happen

▼  
**#01**

Since COVID-19, airlines are and will continue decoupling from exclusive programs in favor of bundled services without an advanced or current pay element

**Decoupling**

↗ **Risk Transfer** →

▼  
**#02**

Airlines will partner with USM suppliers to ensure alignment of objectives and services levels while also allowing the airlines access to the greatest amount of USM inventory in the sector's history

**Partnership**

▼  
**#03**

USM suppliers will play a greater role by working with airlines and integrating their USM with supplier USM to maximize accessibility, while also reducing cost and utilizing their own assets through the entire lifecycle

**Integration**

← **Risk Mitigation** ↖

▼  
**#04**

USM consumption will be data driven. Airlines and the entire supply-chain will need to evolve into a universal system linking airlines, OEMs, MROs and USM providers to use the collective data, combined with AI, to drive efficiency and cost savings

**Data Strategy**



*// Leading through innovation*

## GA Telesis Digital Technologies

In 2018, GA Telesis identified and created a new software division to address the current and future needs of aviation addressing security, reliability, safety, asset valuation and efficiency.

The digital division implemented a software factory model, designed to quickly deliver complex, artificial intelligence aided solutions both in aviation and finance.

### Current Projects

- ✓ **BlockIt™**  
A secure, blockchain based financial messaging platform
- ✓ **SmartCerts™**  
An aviation, blockchain based system for digital records, value capture, optimization and transparent data exchange to address the lifecycle of USM from birth

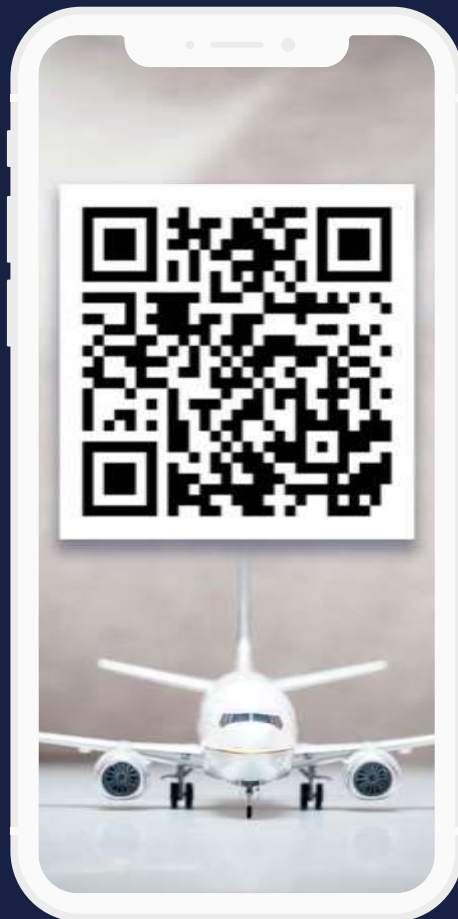


# What if...

We worked together to transform our industry?

## Global System of Records

- Back to birth trace
- Non-incident statements
- Bill of sale / Packing slips
- Repair reports
- On and off logs
- SB/AD status
- Maintenance history
- Warranty information
- No Fault Found
- Engineering troubleshooting
- Etc....



**Digital Twin**

---

**Universal  
Format**

---

**Global  
Collaboration**

Scan a component and let it describe  
itself!

# Everyone Benefits



## Airline Operators

Automatically allocate maintenance resources and \$ based on technical needs by fleet type. Automatic warranty management and down time visibility. Engineers sharing information globally.

## Leasing Companies

Can digitally inspect their assets upon return analyzing return conditions and quickly turn around assets. Instant billing to lessors.

## OEMs

Can easily maintain a digital footprint of reliability and maintenance from birth to the aftermarket

## Airframers & Engine OEMs

Manufacturers can boost R&D with a complete view of their product, its maintenance cycles, and its fuel burn

## MROs

Can partner with operators to plan incoming workloads and help the industry by digitizing ongoing trace records. Full subcomponent history.

## Aftermarket

Can procure and sell assets and USM easier, safer and faster with digital trace. The end of the Non-Incident Statement.

## Aviation Authorities

Can increase safety by full oversight to ensure airworthiness directives and maintenance compliance.

# What if...

The future of USM looked like this?



## Timely Information

Delivery safety information, service bulletins and airworthiness directives with the ability to track compliance



## Instant Credibility

Gain instant credibility by proving digital trace that complies with the customer or airline's requirements



## Identify Rouge Parts

Quickly identify rouge parts that can cause costly repairs and warranty re-work resulting in significant down-time for the airlines



## Better Troubleshooting

Use pattern recognition to surface similar problems and suggest troubleshooting guides across a global industry and fleet

**Our only limit is our imagination of what's possible!**

# It's Time For Transformation

Here's how the aviation industry benefits!

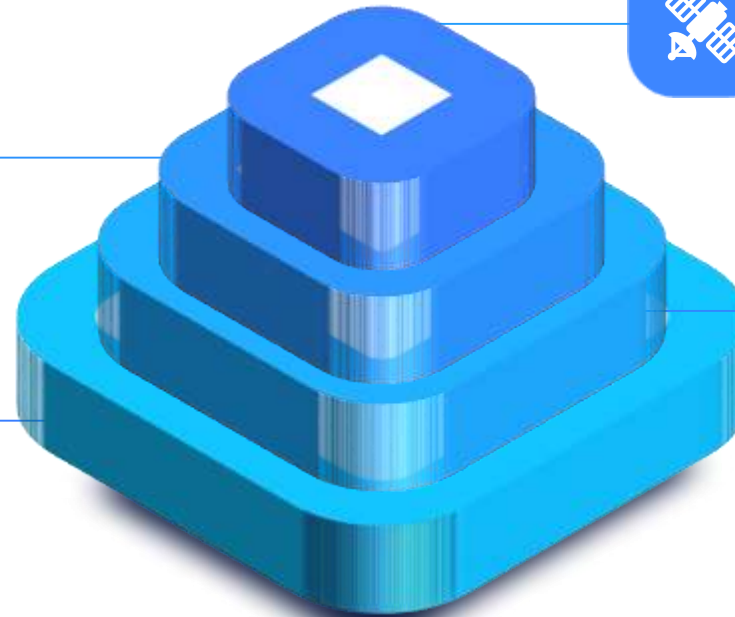
## Reliability

Use network to identify and reduce repeat problems, identify rogue parts and assist with engineering



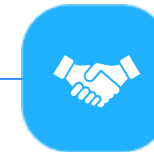
## Asset Value

With easy, fast and complete back to birth trace, assets retain their value



## Safety

Creating a system of trust in order to break down data silos and share pertinent information



## Efficiency

Easy part sales, warranty, replacement, troubleshooting and turn-around-times

To all the **TRAILBLAZERS** Let's talk future!



GA  
TELESIS

TELESIS



## ***The Evolution of the USM Market***

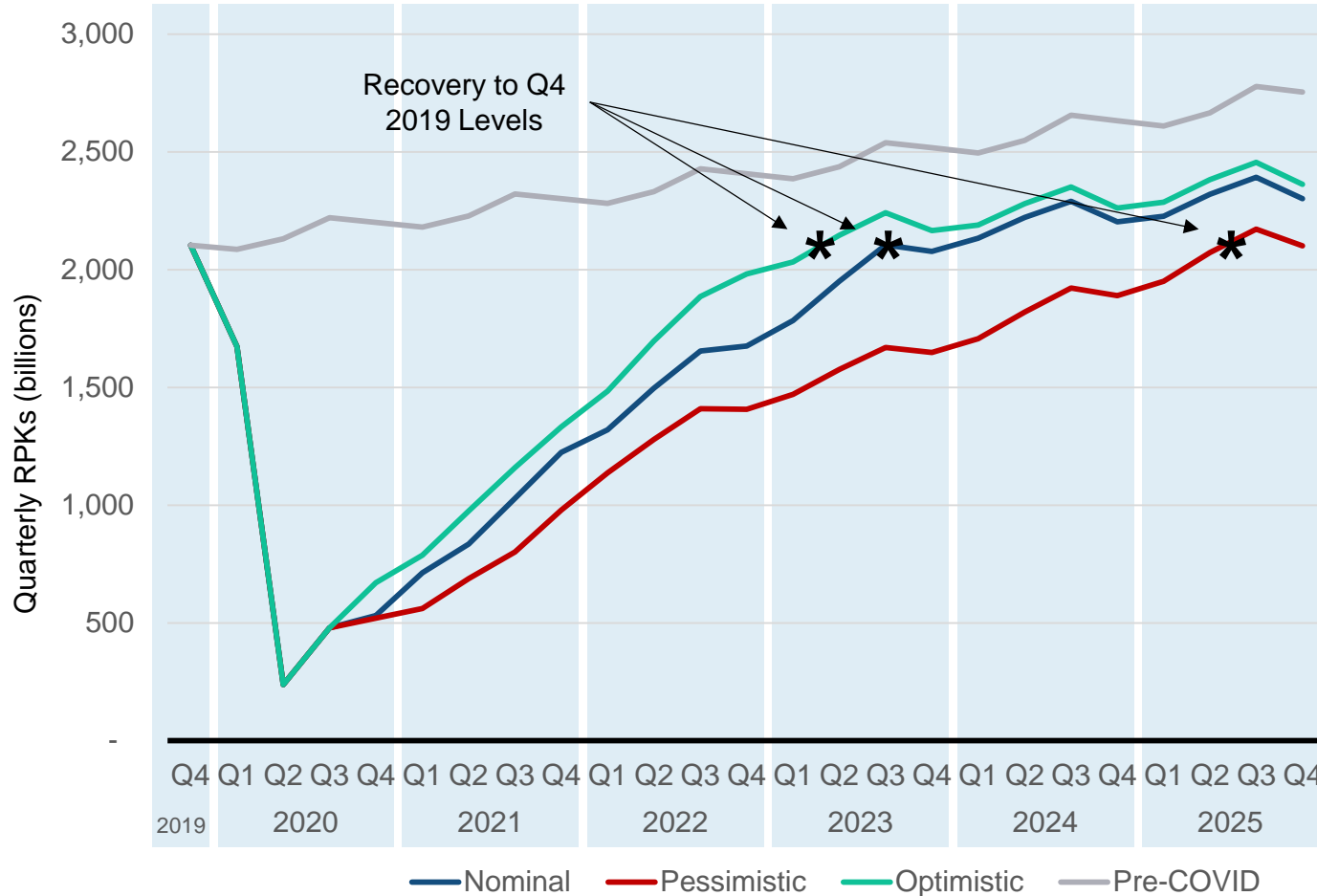
Status and Outlook

30 September 2020



# AeroDynamic's forecast is for air travel to recover in late 2023...and possibly later

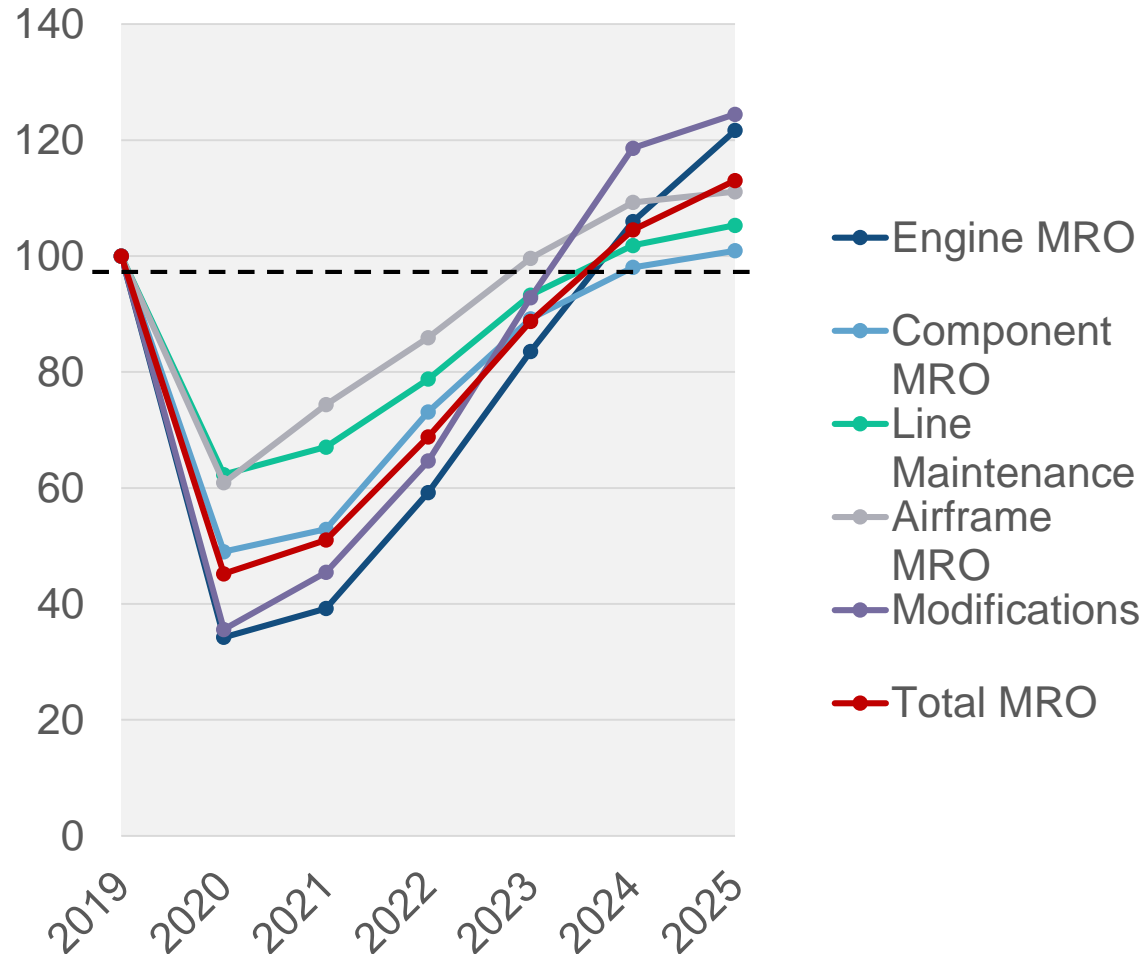
## AeroDynamic's COVID-19 Global Traffic Scenarios



- › The nominal scenario assumes vaccine created in early 2021 and widely distributed 6-12 months later
- › The downside risk is greater than upside opportunities; it may take an additional two years for full recovery
- › Even in the optimistic scenario, the industry loses three years of air travel...and demand for new aircraft

## MRO will suffer an unprecedented decline...in tandem with production

### Indexed Recovery of Air Transport MRO (2019 = 100)

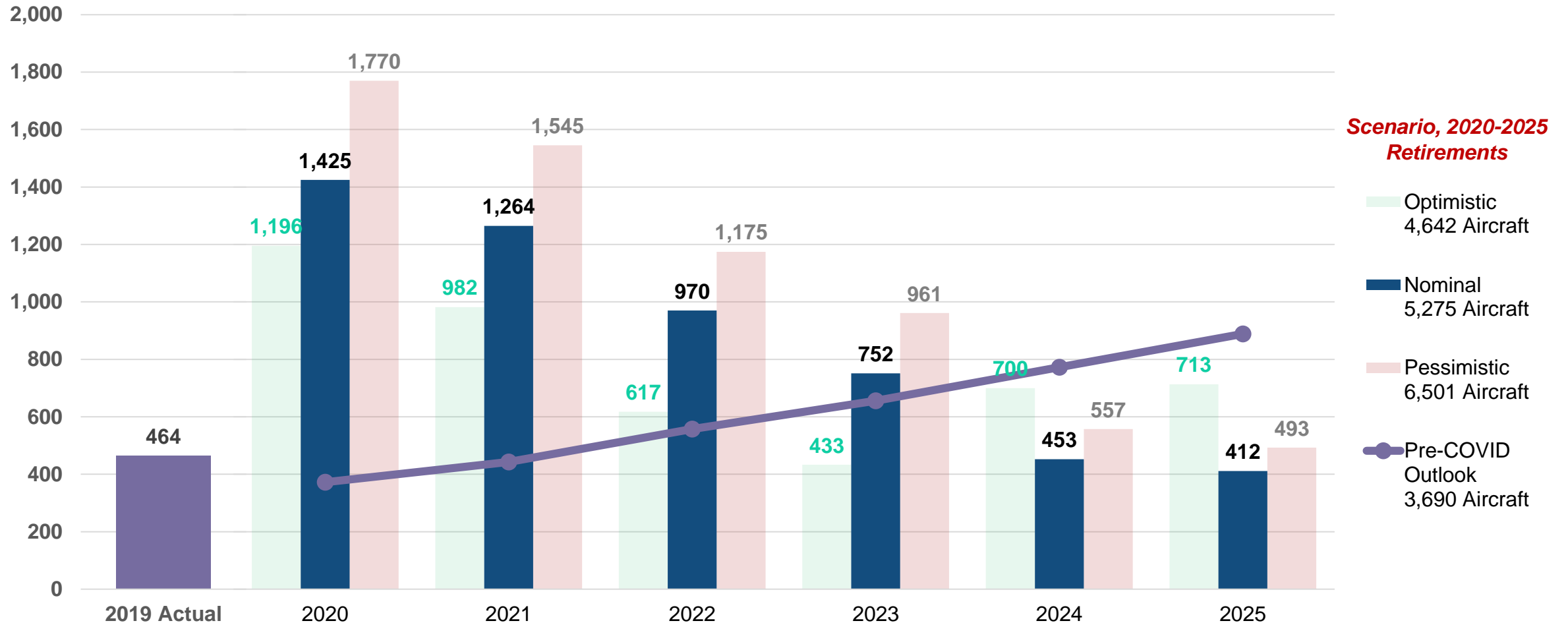


### Implications

- › The scale of the drop is unprecedented in MRO/aftermarket in the jet age
- › Never before have production and MRO experienced traumatic recessions at the same time
- › The financial implications are massive for engine OEMs, which make 100% of their commercial profits from the aftermarket
- › The downturn will also challenge the ambitious service revenue goals of aircraft OEMs

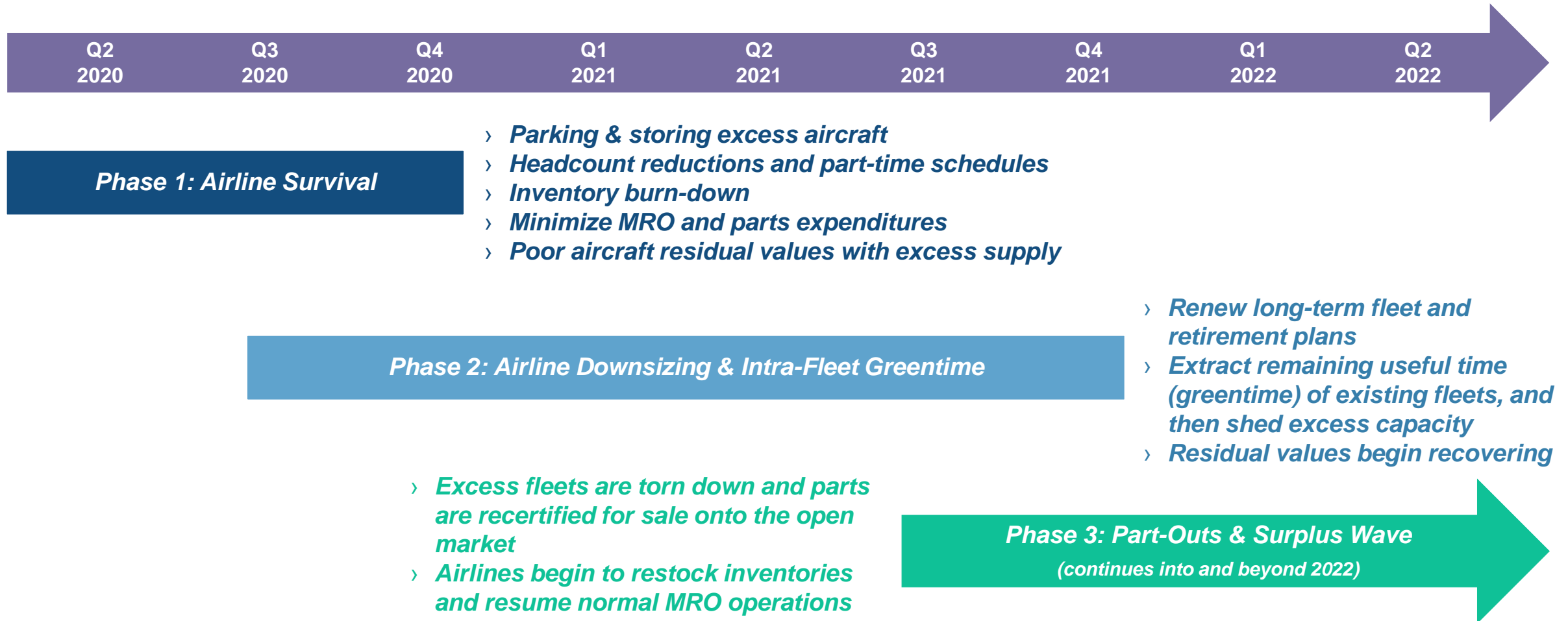
Approximately 5,300 aircraft will retire under the nominal scenario, or ~1,600 more than the pre-COVID outlook

### Preliminary Air Transport Retirement Forecast, by Scenario



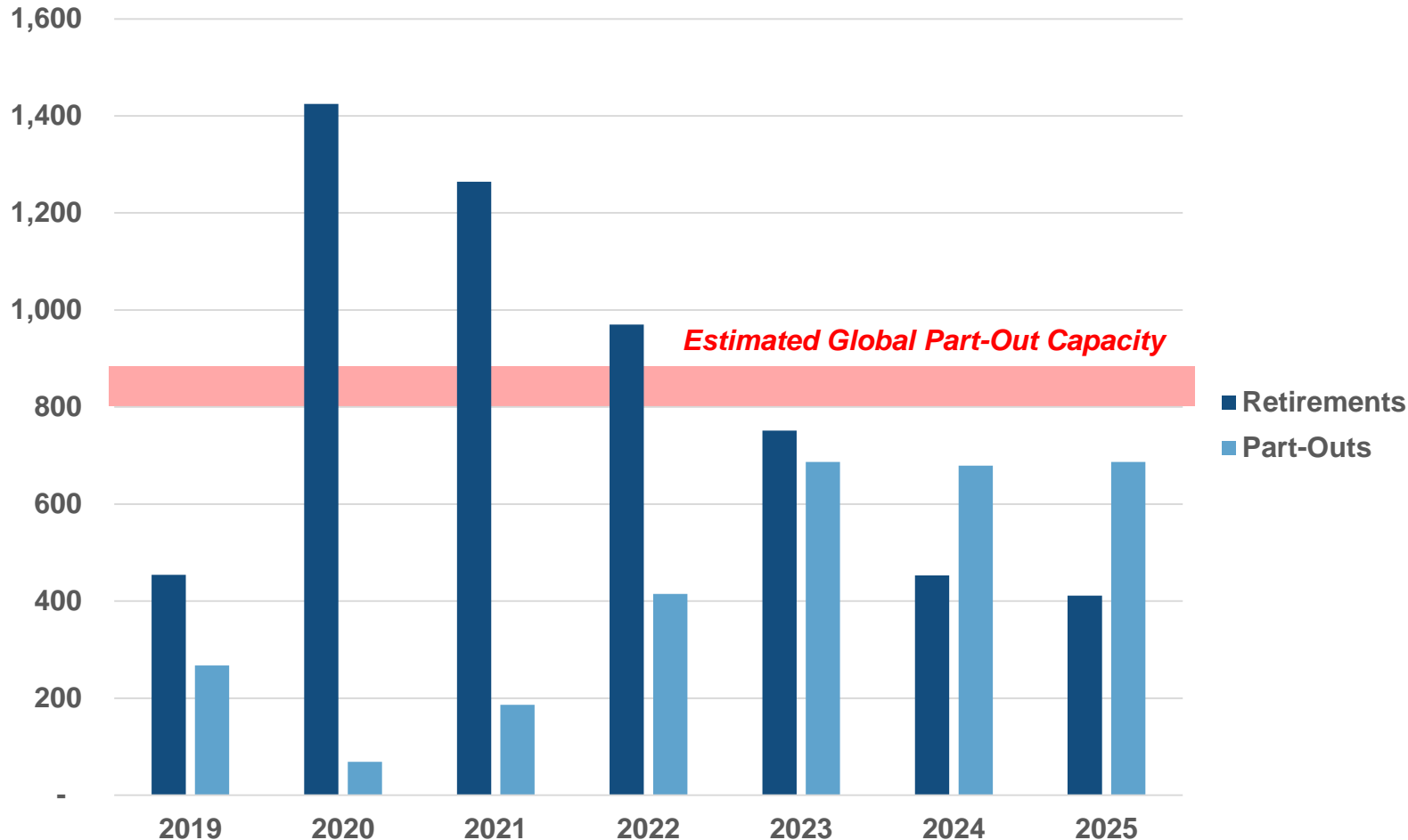
# Three phases will define the impact of COVID-19 to the commercial aftermarket

## Expected Phases of COVID-19 Recovery & Aftermarket Impacts



While annual retirements are expected to reach record levels, AeroDynamic projects that part-out activity will remain tepid until MRO demand recovers, but could reach ~680 annual part-outs by 2023

### 2019-2025 Estimated Retirements & Part-Outs

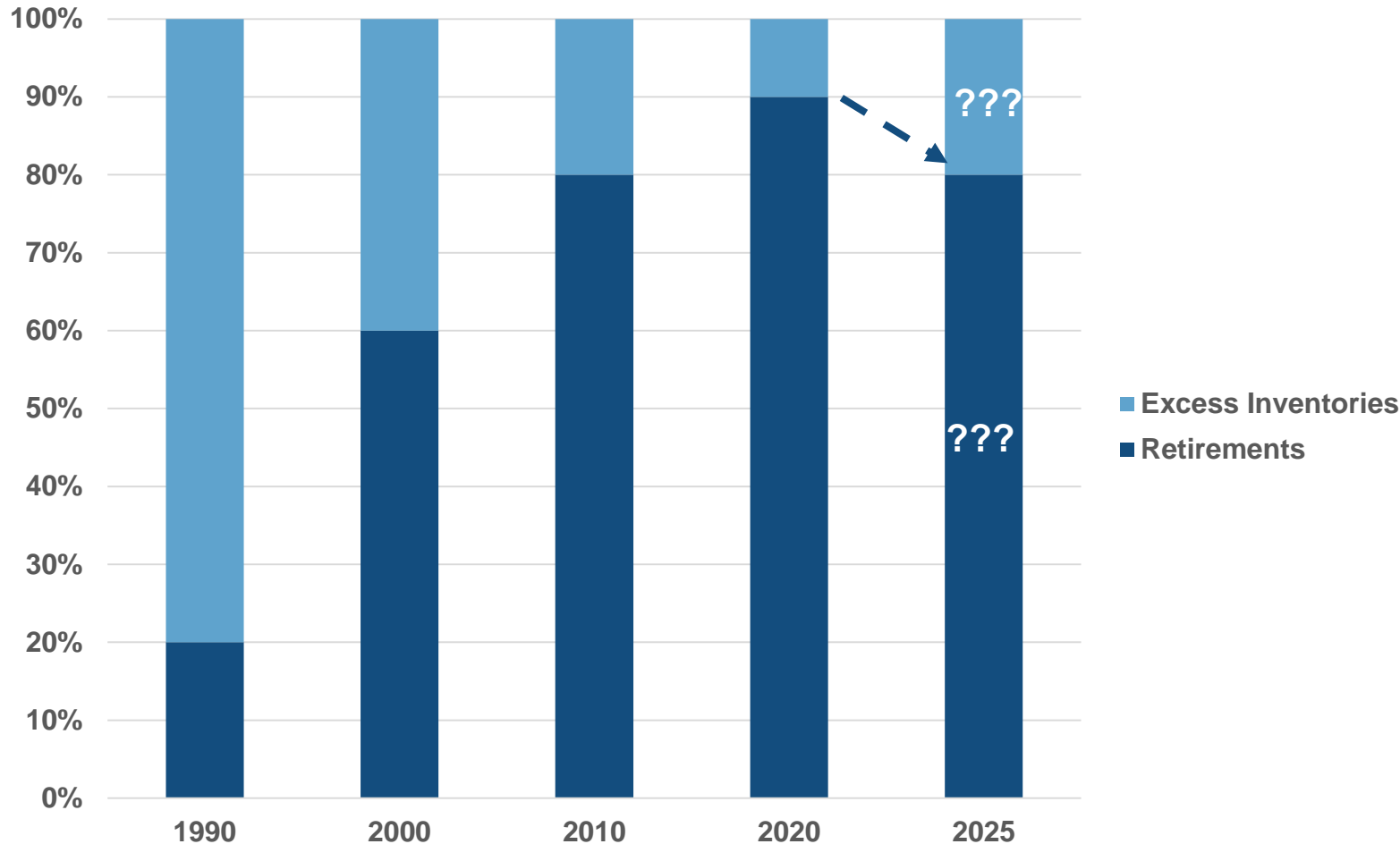


### Part-Out Delay Contributing Factors

- › Airlines and lessors waiting for market value of assets to recover to at or above book value
- › Lessors keeping assets placed at customers at significant discounts
- › Low costs of parking & storage
- › Poor MRO demand for surplus parts
- › Near-term shortage of part-out capacity as suppliers make more room for aircraft storage – constraints will loosen as aircraft return to service

The share of surplus material generated from part-outs could decrease due to excess inventories from airline bankruptcies & failures, as well as excess inventories at OEMs and MROs

**Estimated Breakdown of Surplus Material Sources, 1990-2025**



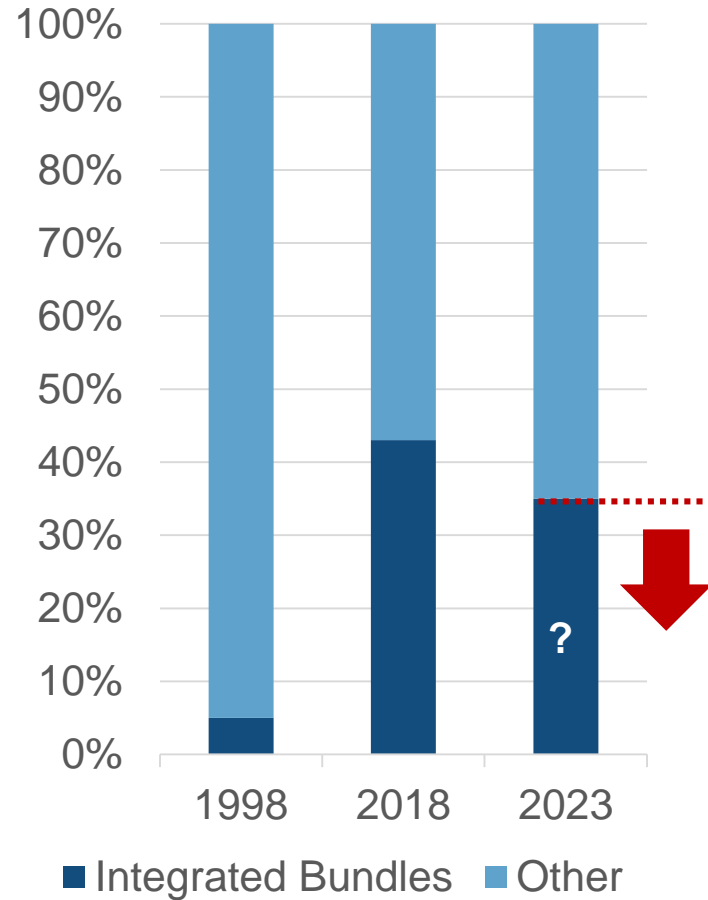
**Implications**

- › ***More surplus material generated from excess inventories***
- › ***More surplus consumables & expendables***

The world of integrated contracts may undergo significant change, as customers become fewer, substitutes more prevalent and suppliers are reshaping their operations

Pre-COVID Component MRO Market\*, By Contract Type

Outcomes

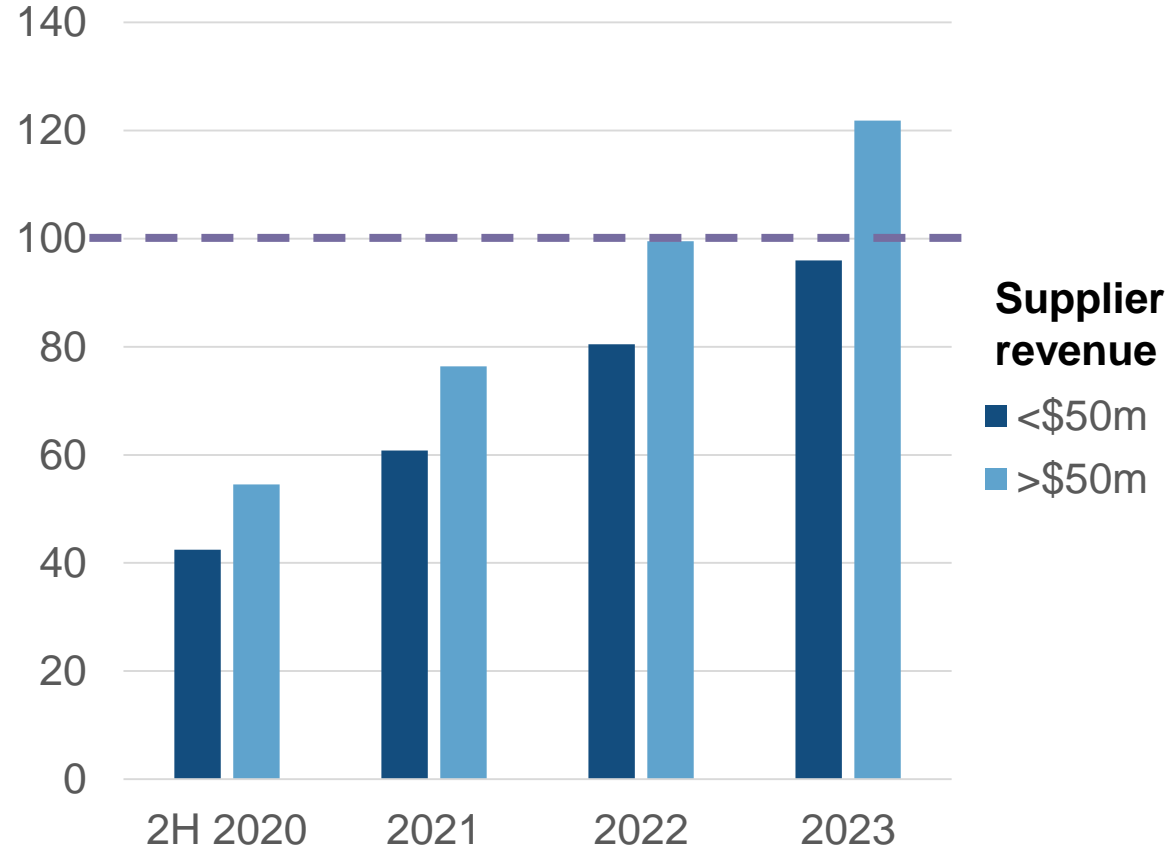


- › Integrated bundles have been on the rise for decades
  - Provided with airlines with guaranteed service level and affordable access to asset pools
  - Suppliers got long-term predictable revenue
  
- › Unpredictable environment post-COVID
  - Airlines in need of greater flexibility
  - Uncertainty increases the risk element of integrated bundles, which are seen as expensive insurance
  
- › Increasing prevalence of substitution from USM following part-out wave



According to a recent survey, USM is expected to recover in 2023; large suppliers are the most optimistic

**Recent Aviation Suppliers Association / AeroDynamic Advisory Survey:  
How do you expect USM revenue to develop over the next 3 1/2 years?  
(2019 = 100)**



**Supplier revenue**  
 ■ <\$50m  
 ■ >\$50m

- › USM is the most rapidly recovering segment according to survey respondents
- › Expect market share gain for USM over:
  - › PMA
  - › New OEM parts
  - › High-value MRO
- › Large companies (>\$50M) are more bullish, expecting recovery already by 2022

n = 44

n = 44



## *AeroDynamic*

2019 Winner of Choice  
Outstanding Academic  
Title Award

# AeroDynamic

ADVISORY



**Jonas Murby**  
Principal

+1 (734) 773-3899

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

[www.aerodynamicadvisory.com](http://www.aerodynamicadvisory.com)



## VAS Market Brief

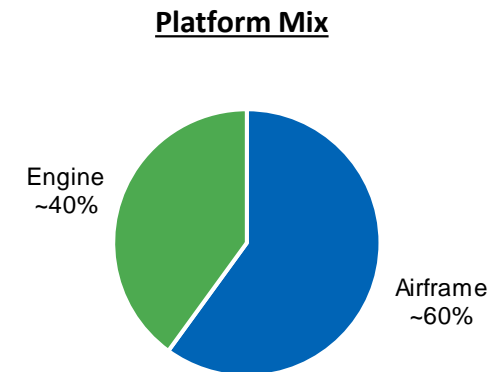
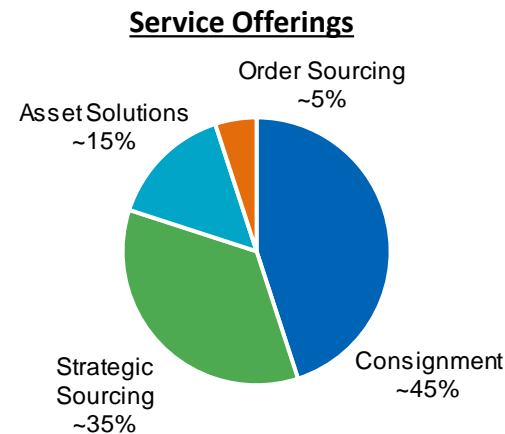
**Tommy Hughes**  
Chief Executive Officer

IATA MCC Webinar  
Sept. 30<sup>th</sup>, 2020

## Core Competency

- VAS Aero Services is the **leading provider of re-distribution services** for aftermarket parts serving the global aviation sector with a **focus on Used Serviceable Material (“USM”)**
- VAS uses an **asset light approach** through exclusive agreements to connect buyers & sellers of parts

## Revenue Breakdown (2020)



**40 Years**  
Operating History

**\$4+ Billion**  
New and Used Parts  
Sold Since Inception

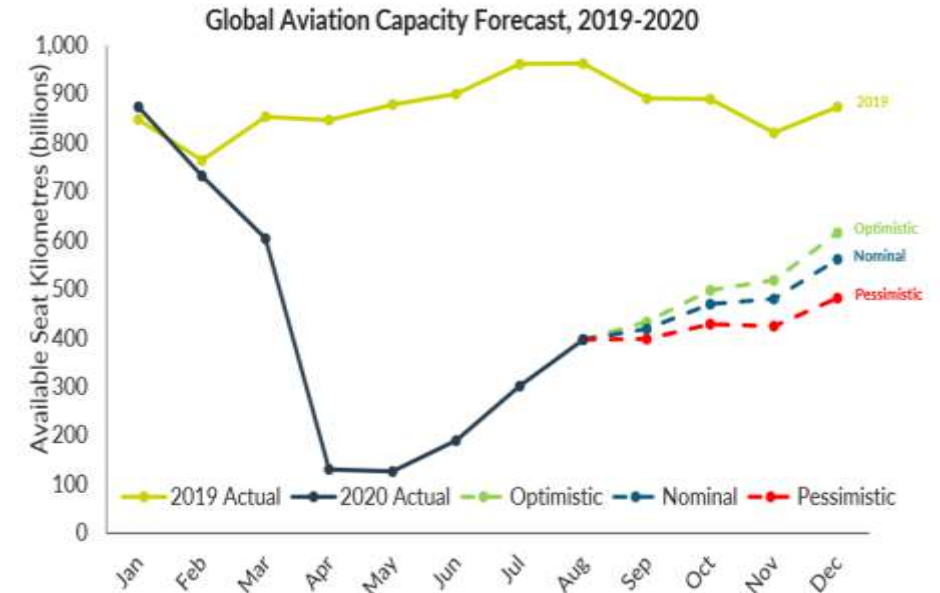
**1.1 Million**  
Unique Material  
Numbers

**850+**  
Customers

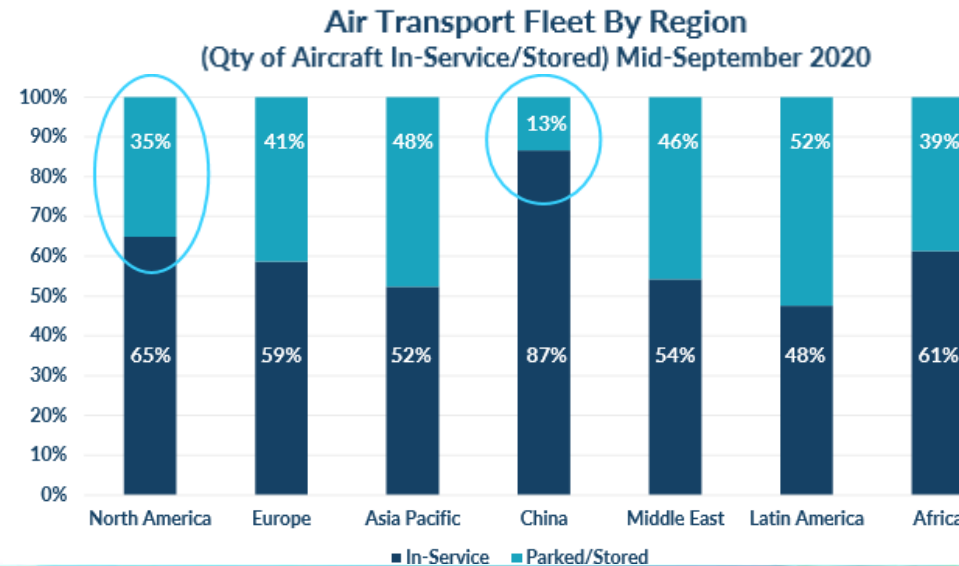
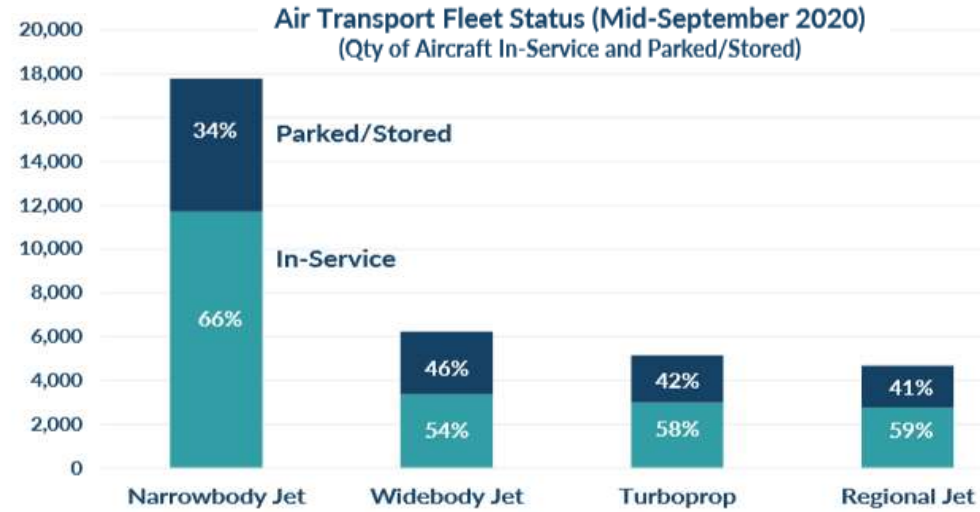
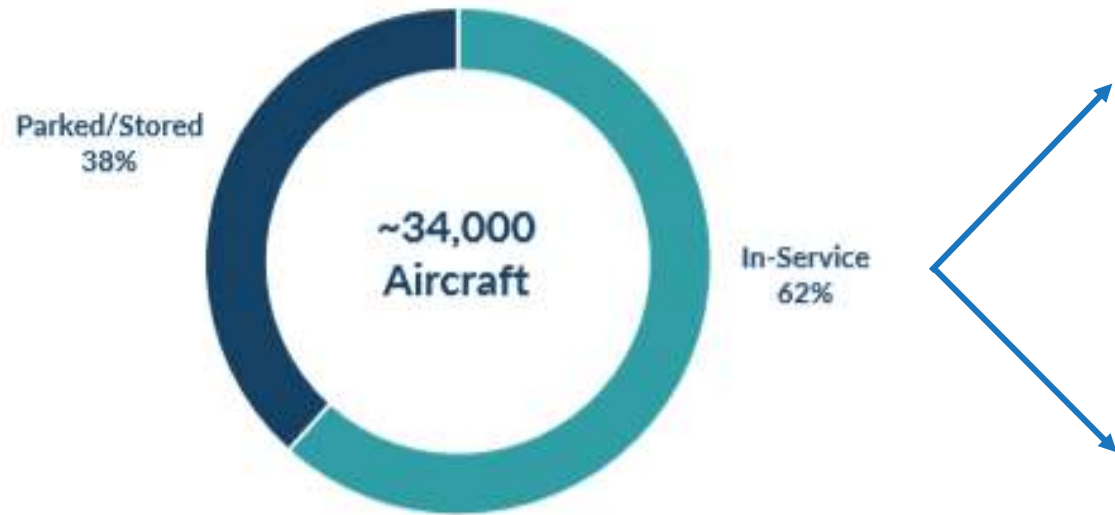
**100%**  
Commercial  
Aftermarket

**VAS is the One of the Largest Independent Re-Distributors of Aftermarket Aerospace Parts**

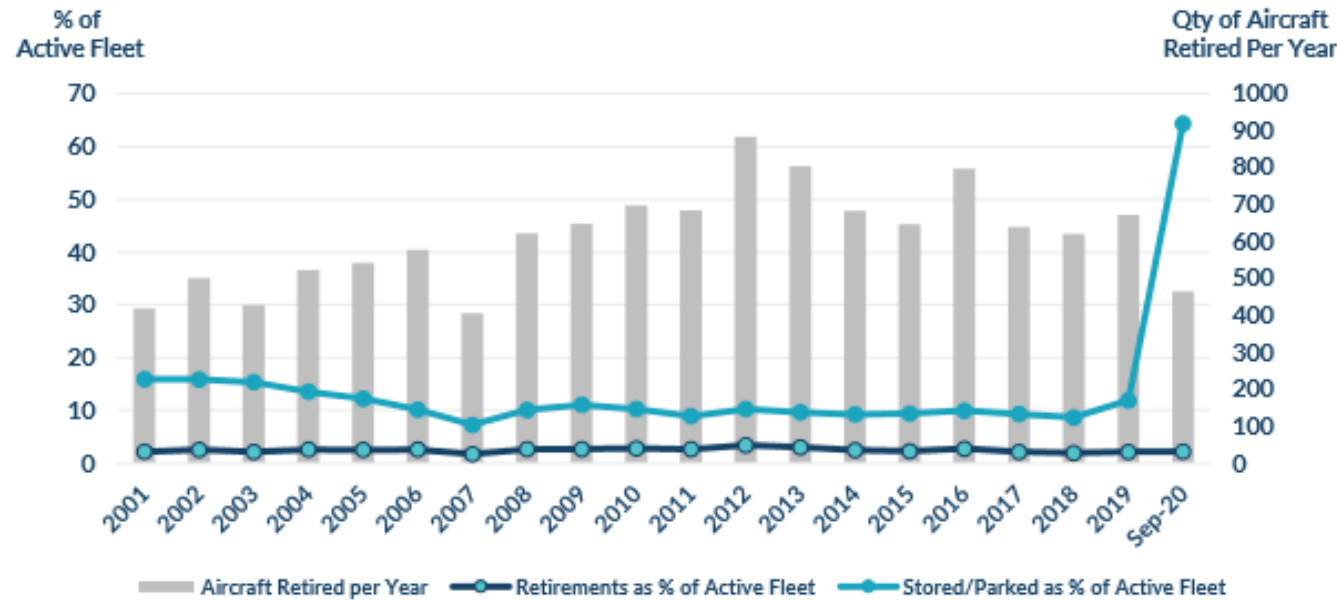
- Crisis unlike past major events (9/11, SARS, 08' financial recession)
- Significant reductions in passenger flights & traffic across all global regions
- Aircraft Manufacturers hit with reduced production rates and orders cancellations
- MRO providers impacted greatly by scheduled & un-scheduled events
- Component OEMs will require a deeper interface into the USM segment
- Lessors still scrambling to support operators with storage and early lease returns
- USM Suppliers witness significant demand reduction from Commercial Airlines and MRO providers



As of September ~38% (13,000 AC) of the air transport fleet is categorized as Parked/Stored

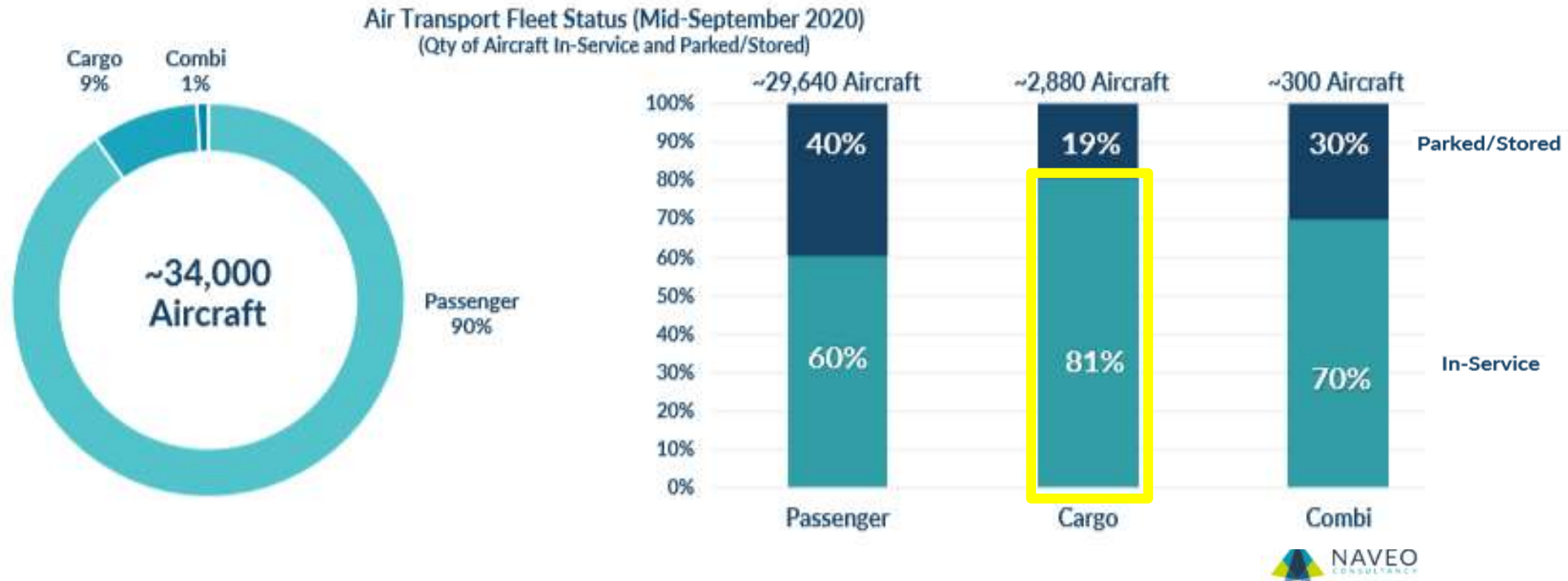


- Through September ~465 aircraft will be retired from the market.
- Some projections associate as many as 1,500 retirements annually.
- What is the actual dismantlement capacity and does demand support the increased supply?



# Demand For Cargo Operations During Crisis

Strong need for air cargo (PPE equipment, eCommerce, shipments in passenger cabins)





# VAS Market Intelligence Tools During This Crisis

- Component demand levels impacted by 50% or more within specific regions, customers, and timeframes, efficient IP tools & eCommerce drives VAS's business more than ever.
- VAS's IT infrastructure and capabilities are constantly evolving to remain a leader for market intel tools and customer data integration. (i.e. SAP experience & Voice Over IP Network)
- VAS is integrated with large strategic partners to exchange real-time data and manage transactions seamlessly and virtually.
- Industry resources will be affected. Digital connectivity, while providing availability and transaction efficiency will be increasingly required from aftermarket providers. The race for digital transparency and efficiency is in full gear.



- **The Company maintains a global network with aggregate warehousing capacity of approximately 450,000 ft<sup>2</sup>**
- VAS has deployed “lean” tools and procedures to maximize accountability and improve KPIs
- More than 40% of the Company’s annual investment in IT and other programs is focused on accelerating speed through VAS’s distribution network
- **SAP enterprise environment provides scale in both the number of lines managed (>900,000) and speed in B2B integration, typically providing a 50% reduction in complex customer integrations**
- **Typical partner integration takes less than 30 days**
- VAS has been operating SAP for over 12 years and has leveraging system enhancements and implemented industry-specific upgrades



Boca	Seattle	London	Tarbes
125,000 ft. <sup>2</sup>	238,000 ft. <sup>2</sup>	20,000 ft. <sup>2</sup>	30,000 ft. <sup>2</sup>



Thank you for your time and attention

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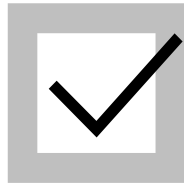
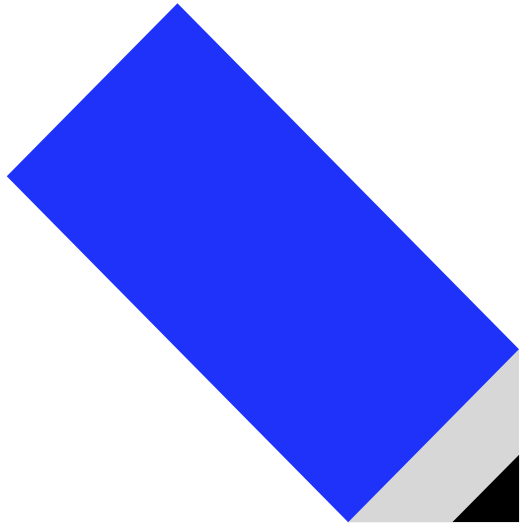
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**USM Market**

# Poll



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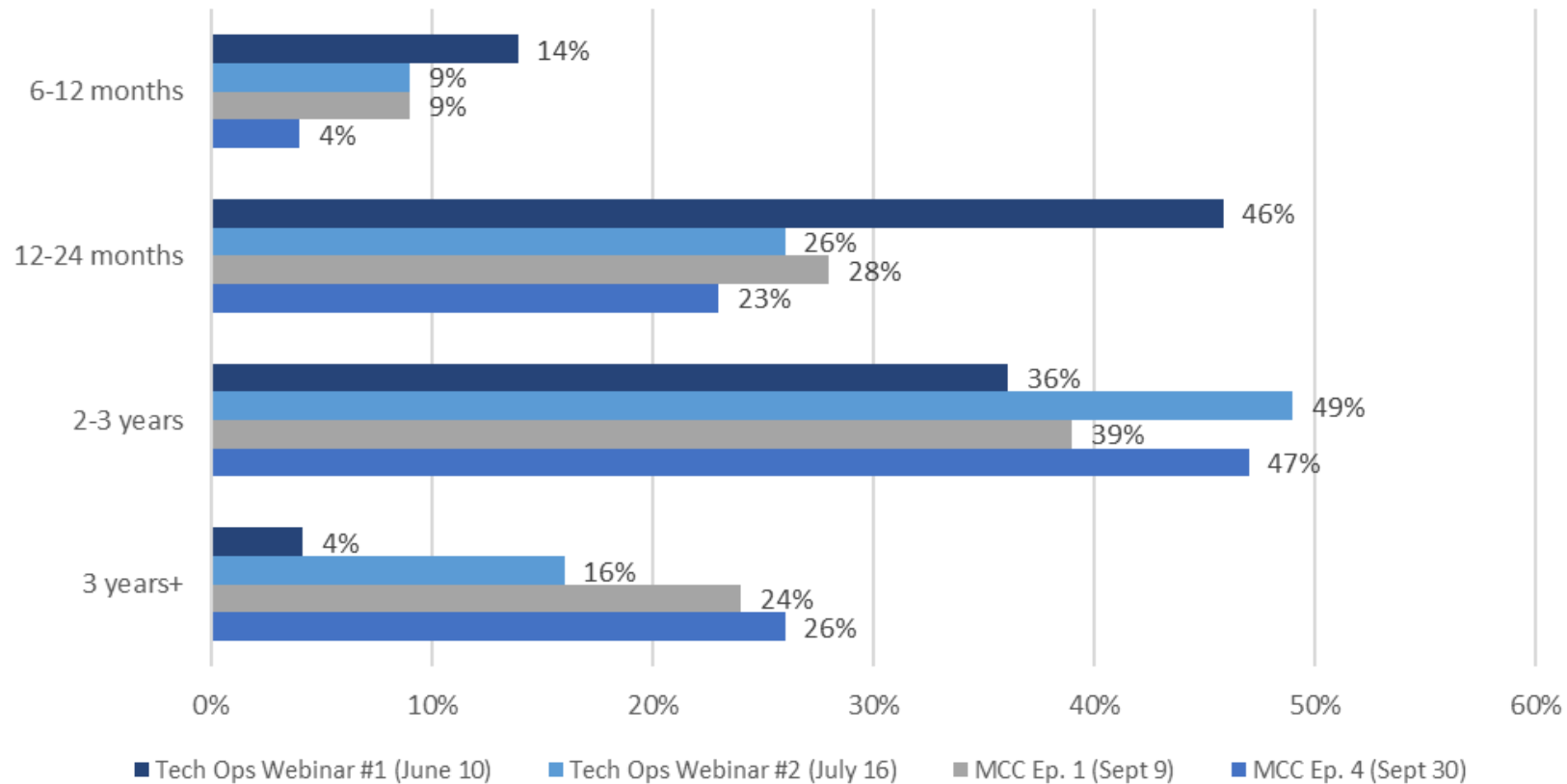
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# Poll Results

When will demand for travel be back to 2019 levels?



A front-facing view of a large commercial airplane, likely a Boeing 787 Dreamliner, inside a spacious hangar. The aircraft is white with red accents on the engines and landing gear. The hangar has a high ceiling with a complex metal truss structure and bright lighting. A mobile staircase is visible on the right side of the aircraft.

# Incident/Accident Clearance Statement (ICS)

**Chris Markou**  
Head, Operational Cost Management – IATA



# While Trading USM...

- Commercial interests have added a lot of paperwork.
- The NIS (Non-Incident Statement) is one piece that may be asked for.
- It states that the Aircraft/Engine has not been involved in an Incident.
- The purpose of the Incident/Accident Clearance Statement (ICS) is to declare that the aircraft/engine/part has been deemed acceptable for continued use.



# From: Non-Incident Statement (NIS)

- Adds unnecessary paperwork
- Does not add anything to Safety
- Loss of Asset Value
- Difficult to obtain

# To: Incident/Accident Clearance Statement (ICS)

- Adds unnecessary paperwork
- Does not add anything to Safety
- Agreed upon by IATA & AWG\*
- Step in the right direction!!!

\*Aviation Working Group: Lessors' Association



# Ultimate Goal

Incident/Accident  
Clearance Statement (ICS)



Airworthiness Tag:  
**Form 1 / 8130-3**

Issue of Trust to our Quality System!!!

Details at [www.iata.org/altg](http://www.iata.org/altg)



**Thank you!**





# Consumable Stock Optimization with Data Science and Artificial Intelligence

Jens Bjarnason PhD, SVP Corporate Affairs



# What is the Issue? Do We Have a Problem?

## Yes, We Do

- Ever increasing inventory of consumable material – average increase of 3% per year, even for a stable operation
- Consumable material ordered for a specific maintenance task frequently not used
- Despite increase in inventory, service level remains stagnant, about 85 – 90%



# What Has Been Done to Address the Issue?

- Implementation of an internal approval process to discourage excessive purchasing
- Sales effort to reduce unused inventory
- Use of material forecasts generated by built-in utilities in Maintenance IT platforms (Amicos, TRAX, Maintenix)
- Various in-house software and methods, such as Excel, Power BI, etc.
- None of the above actions resulted in significant improvements
- Why?





## Current Forecasting Methodology

- Raw historical usage
- Simple forecasting methods such as moving average
- Tools such as regression and exponential smoothing

## Why Don't Traditional Methods Work?

- The number and frequency of aircraft part movements (one movement is defined as either entry into or removal from a registered inventory) is simply not sufficiently high for traditional statistical forecasting methods to work

# Monte Carlo Simulation

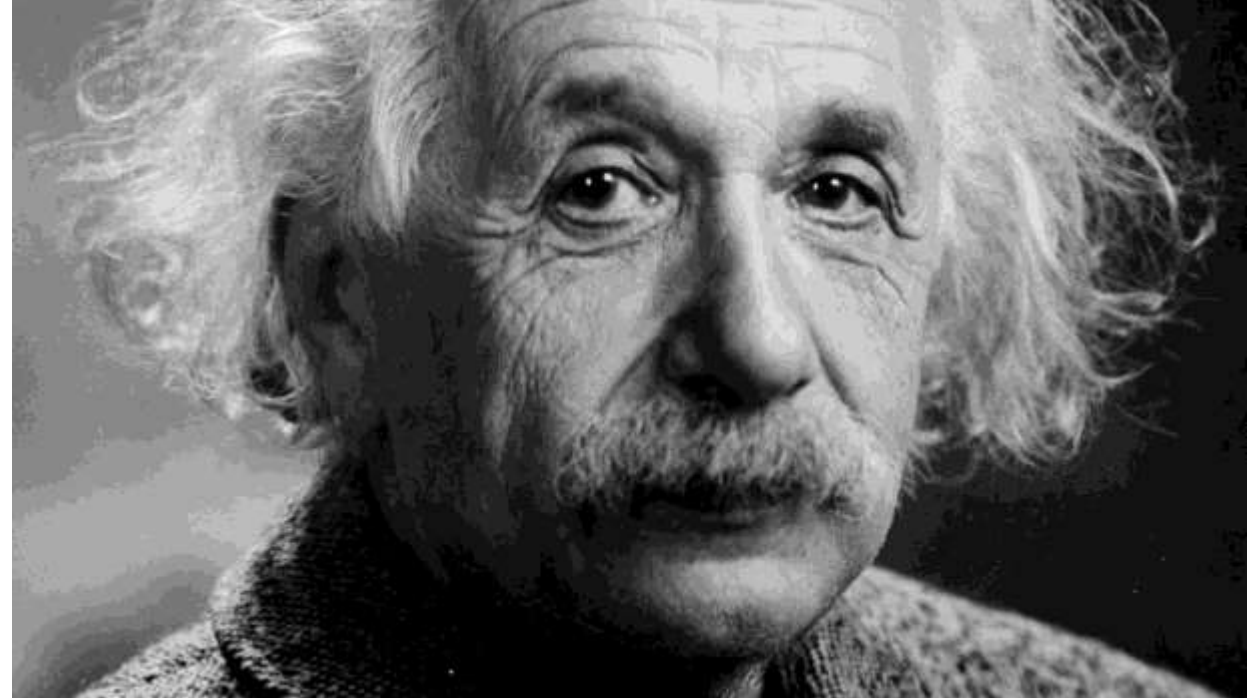
A Very Brief Background





# Monte Carlo Simulation – A Brief History

- In 1939, a few scientists who had escaped Nazi Germany reported that Germans were making significant strides towards building a nuclear bomb
- These scientists, including Albert Einstein, wrote to Franklin D. Roosevelt expressing their concerns
- This led to the launch of the "Manhattan Project" to develop a nuclear bomb for the United States
- As part of this work, nuclear diffusion studies led Stanislaw Ulam and John von Neumann to develop a randomized algorithm to determine distribution of neutrons in nuclear diffusion
- Their method came to be known as Monte Carlo, due to the secret nature of their work and/or randomized approach they used
- Since its inception, Monte Carlo has been applied successfully to a large variety of problems
- In this example, the method has shown to be ideal as a forecasting tool for use of aircraft consumable material
- The key is the ability to deal with parts with few movement (low usage)



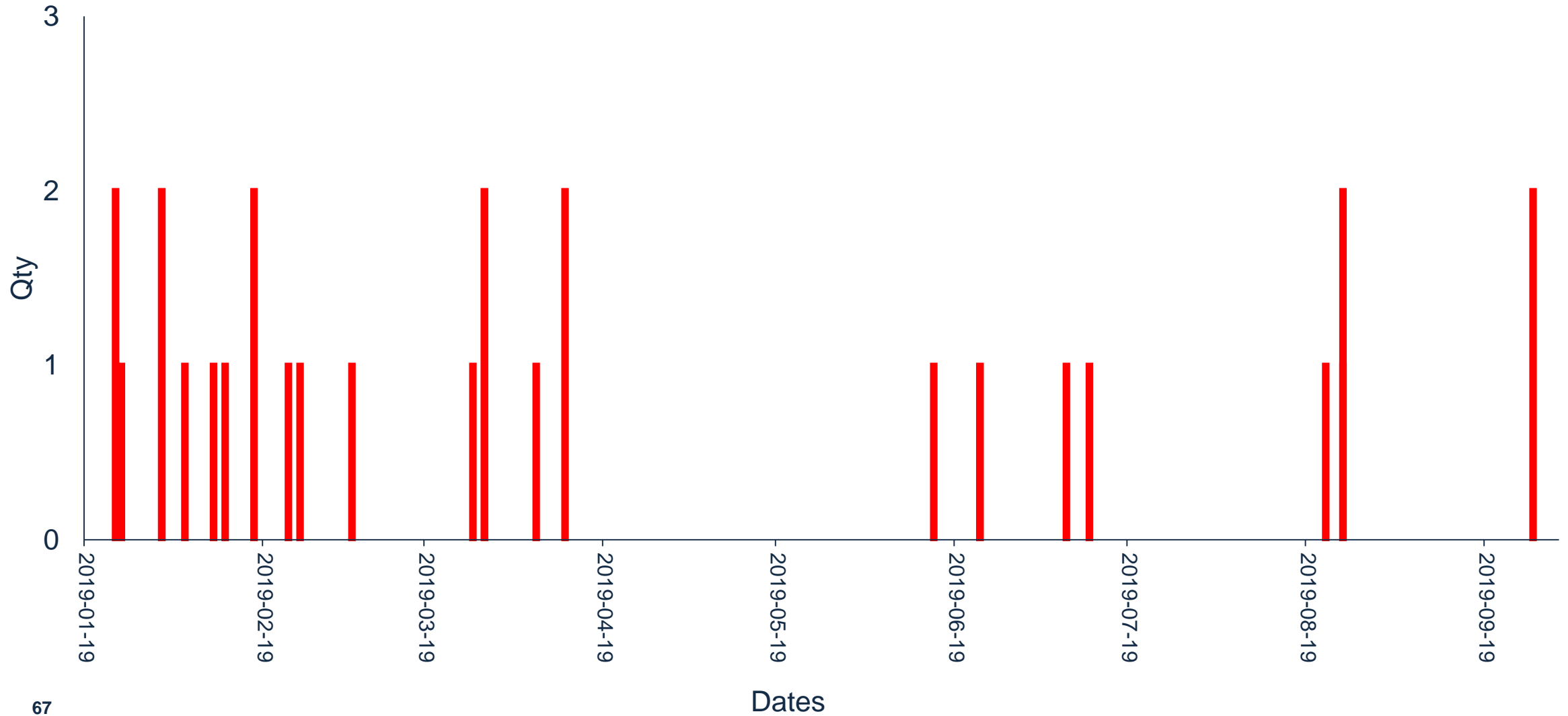
# Monte Carlo Simulation in Consumable Material Management

Example:

- Known part movement history
- Need to forecast future purchases, based on:
  - Desired Service Level
  - Expected Usage – This is essential, Monte Carlo Simulation can predict this accurately for a given service level
  - Lead Time
  - Buying Frequency
  - Minimum Package Size
  - Etc..

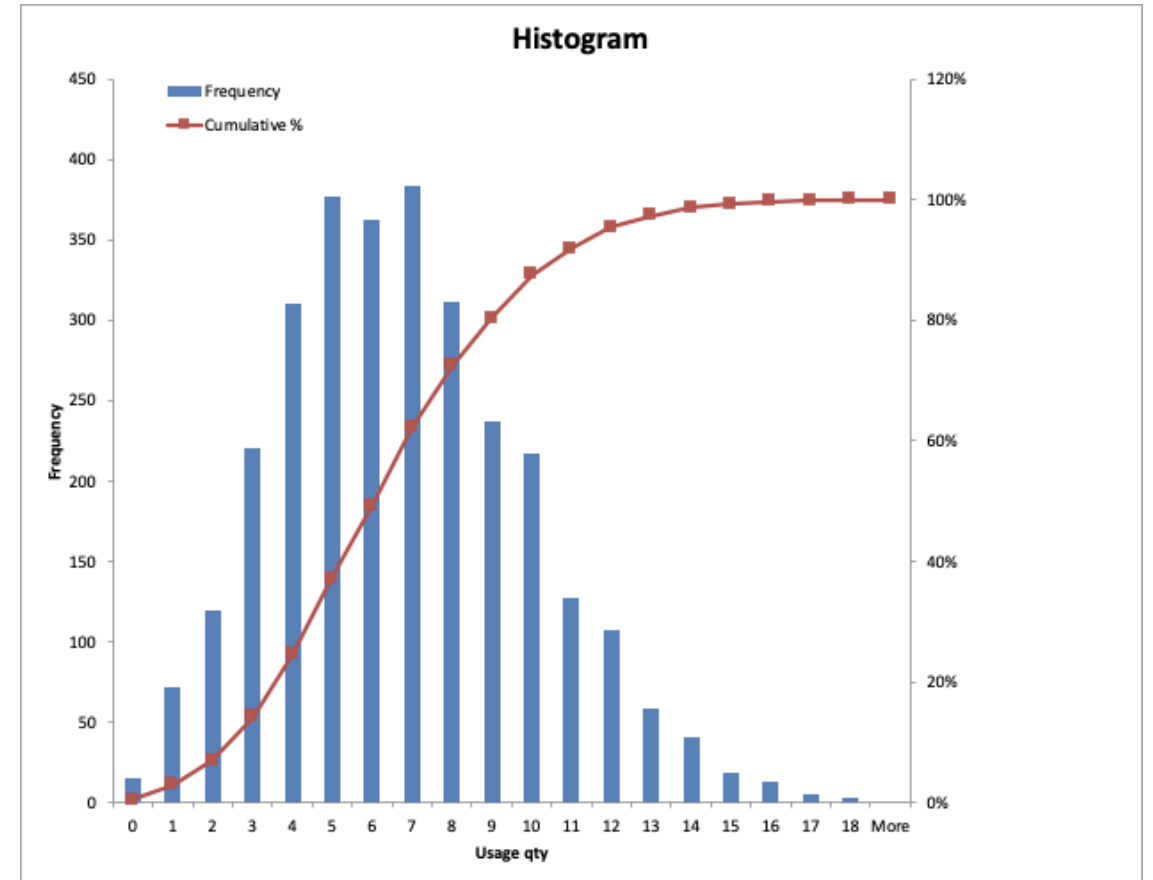


# Example of Low Usage Material Movement



# Monte Carlo Simulation - Example

- The part has a 10-day lead time. To generate a 10-day usage forecast we take usage for a randomly selected 10 days in movement history
- This is repeated for randomly selected 10 days until statistical stability is reached (typically 1,000 - 3,000 selections)
- When statistical stability is reached, 10-day usage can be forecasted for any desired service level
- In this example, eight movements can be predicted within 95% accuracy



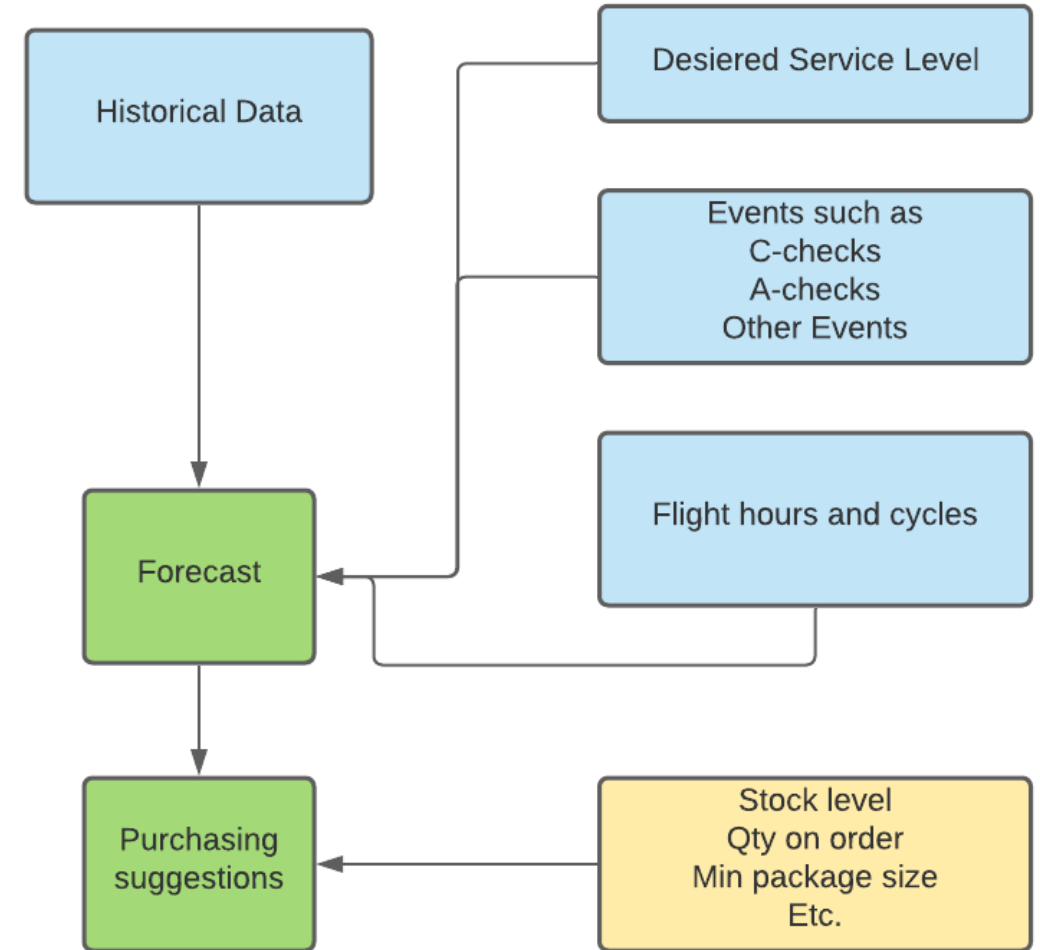
# Can This Prediction Be Used to Manage Purchasing?

To get as good forecast as possible we use

- Historical data
- Desired service level
- Historical and future events such as C-Checks and A-Checks
- Historical and future flight hours and cycles

To create purchasing suggestions

- We use the forecast
- Stock level and qty on order
- Other relevant factors such as package sizes, min order qty form vendor etc.





# Icelandair Case Study



# Icelandair Case Study

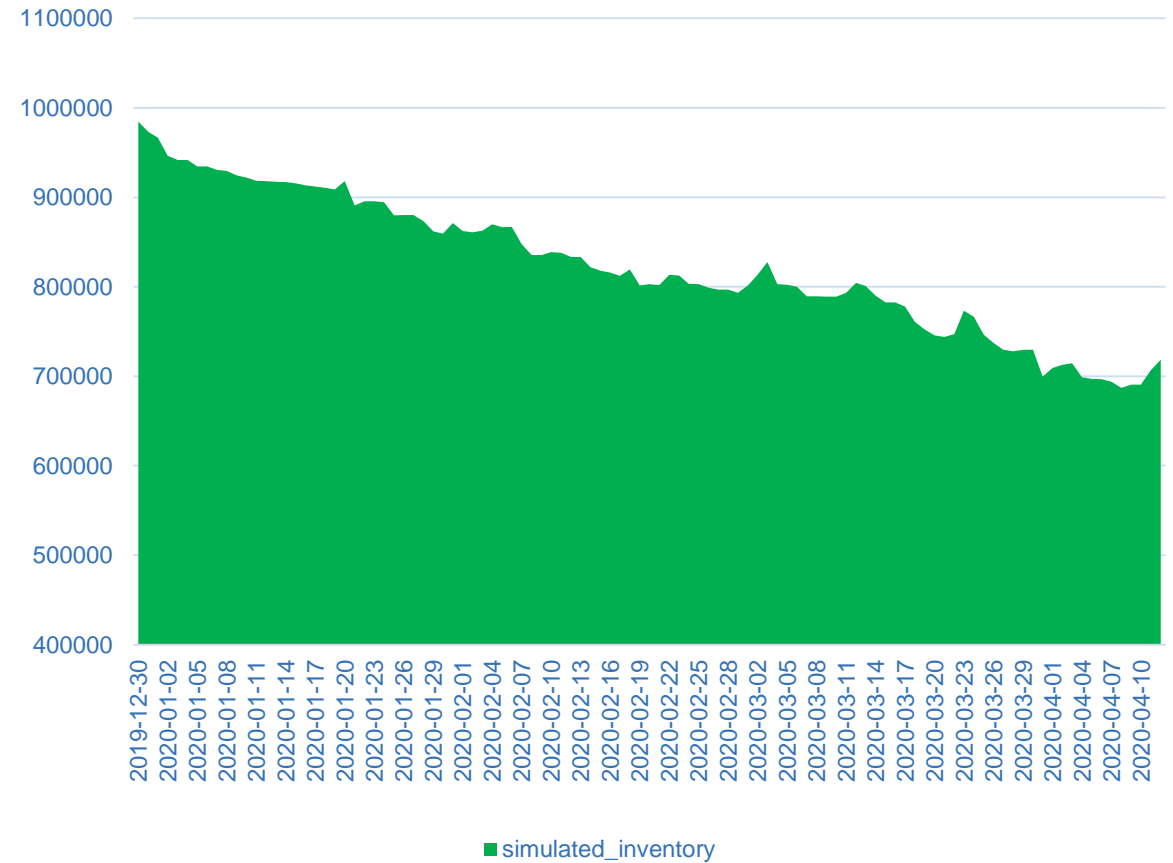


Simulation on selected consumable parts using discrete optimization algorithm



Inventory reduction by 25% in four months predicted by simulation

## Simulation



# Icelandair Case Study



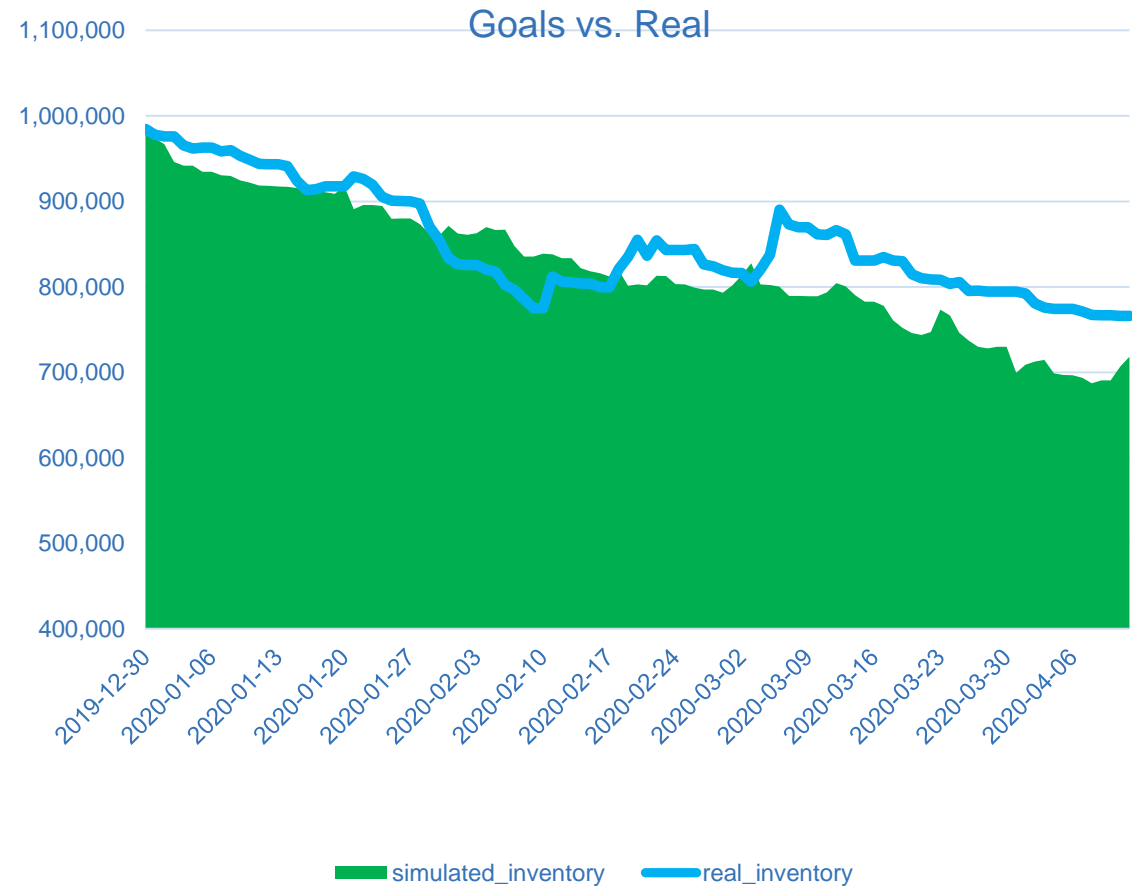
Excellent conformity between simulated and actual stock level for first three months



Divergence between simulated and actual stock level observed after three months is due to reduced production during Covid-19 lockdown



Overall results is 25% stock level reduction – with significantly higher service level (over 95%)







# Summary

1. Demonstrated savings of 25% due lower inventory and lower numbers of AOGs and material shortages
2. Advanced discrete mathematical modeling not used in any other purchasing system today
3. Cloud based, user friendly system
4. Key to success is implementation of agile and lean culture focused on cost savings





Questions?



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Icelandair**



**MRO SmartHub**

# IATA's unique solution for the valuation of USM

**Garath Harries**

Product Manager & Business Development MRO SmartHub

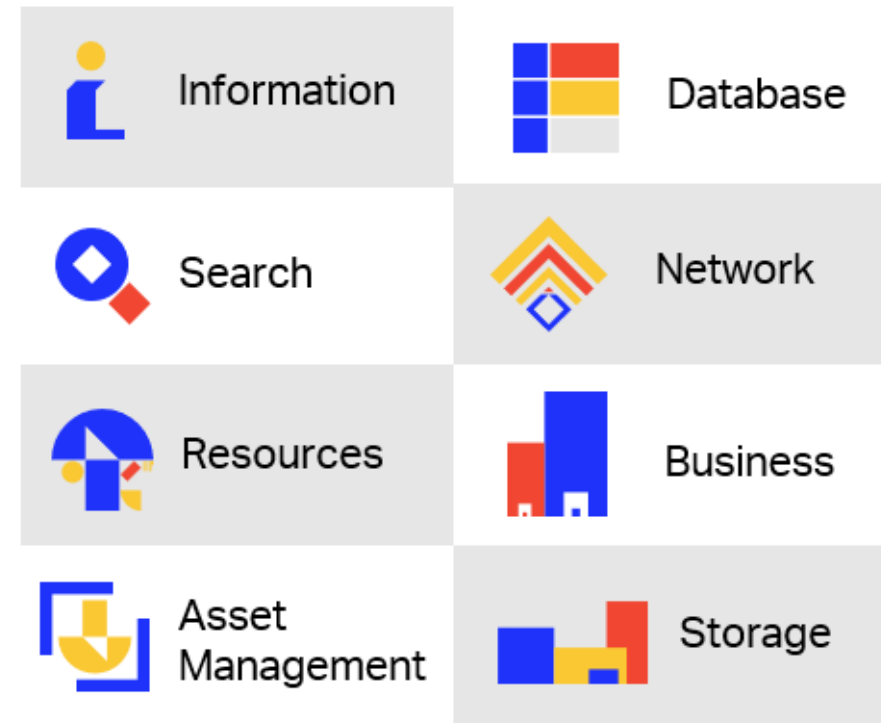
September 30, 2020

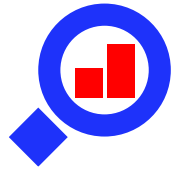
Confidential material under copyright, property of IATA



# Industry Transparency – Neutral, Unbiased Valuations

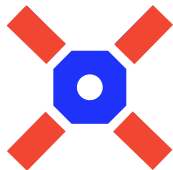
- **Increase transparency** to valuation, pricing & availability of USM
- **Central / neutral** platform to transact & benchmark
- Increase asset **utilization** functionalities
- Ensure a **systematic** valuation process
- **Unbiased** viewpoint of valuation for airline, MRO, OEM and aftermarket vendors
- Increase asset **value management** & marketability





## Evaluator

Provides **Fair Market Value** and **detailed statistics for surplus parts**



## Connector

Eases trading with **preferred partners** through a distinctive trading channel

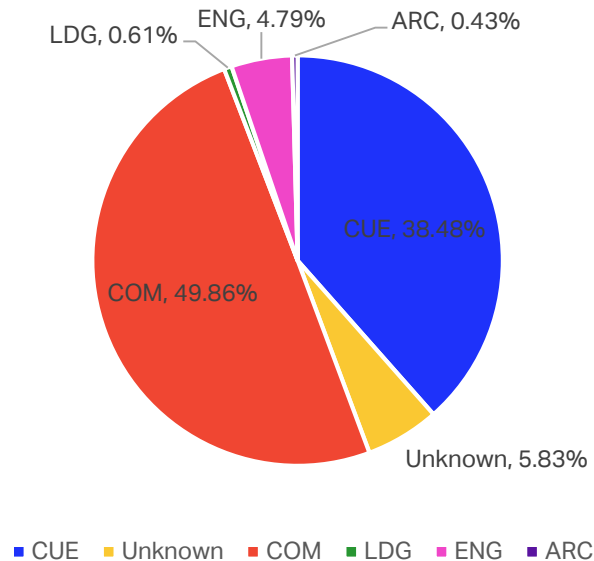
IATA MRO SmartHub is a **web-based business intelligence platform** enabling:

- Quick and accurate evaluation of excess inventories
- Transparent fair market value and true availability of surplus material
- Reduction in material cost while maximizing usability of on-hand inventory
- Buy, Sell, Exchange, Consignment
- Effortless integration and enhancement into any ERP system and other MRO tools

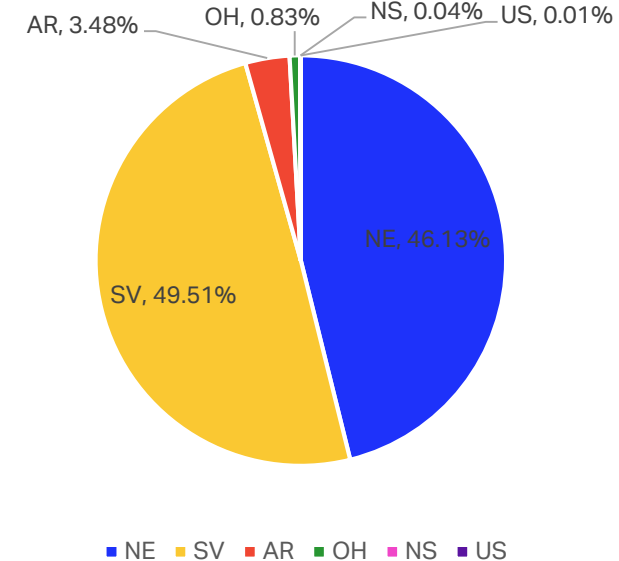
# KPI's IATA MRO SmartHub – Evaluator

- Time period covered: Jan 2018 – Sep 2020
- 1.15 million transactions → ~ 175,000 part numbers
- 0.7 million MRO events → ~ 17,000 part numbers
- ~ 1 million part numbers in parts catalogue with FMV
- Coverage: ~ 100 aircraft types & engine models

Transactions per material domain



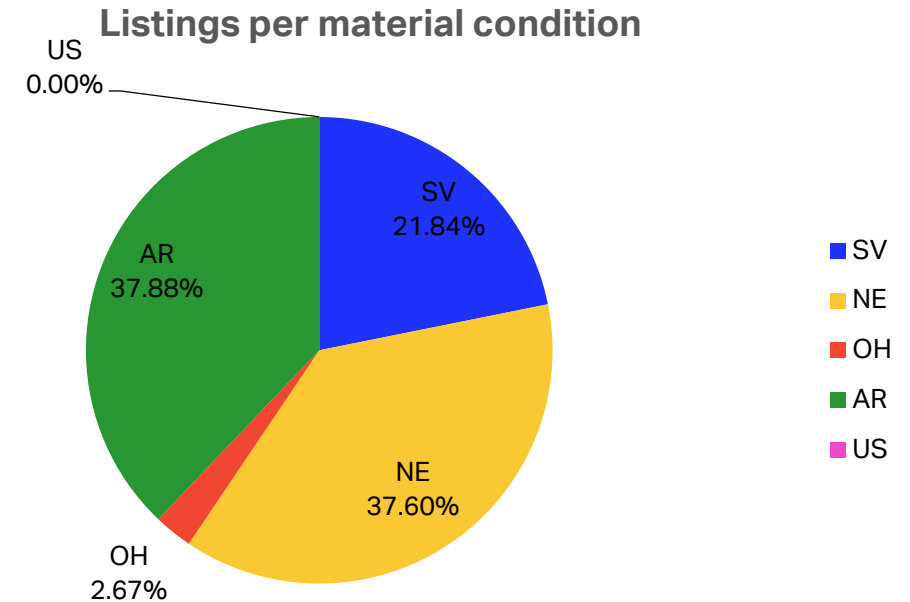
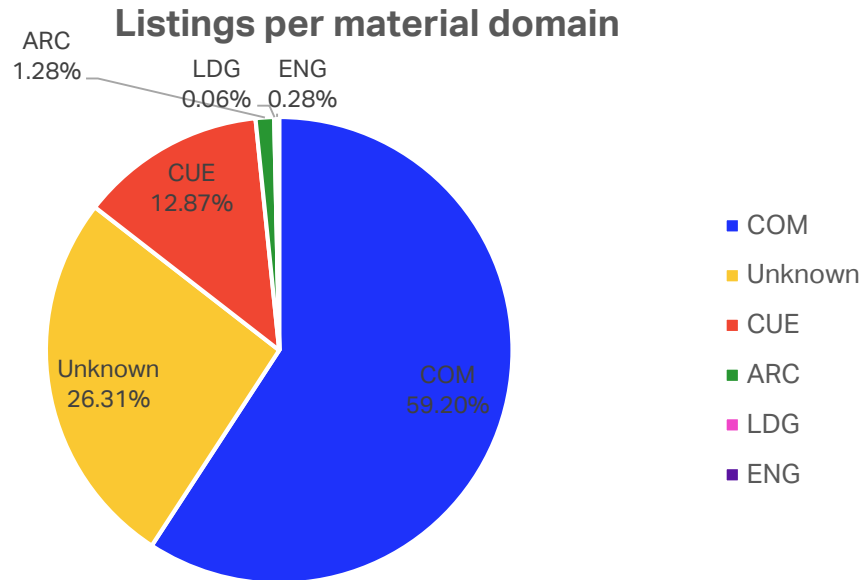
Transactions per material condition



Source: IATA MRO SmartHub Evaluator

# KPI's IATA MRO SmartHub – Connector

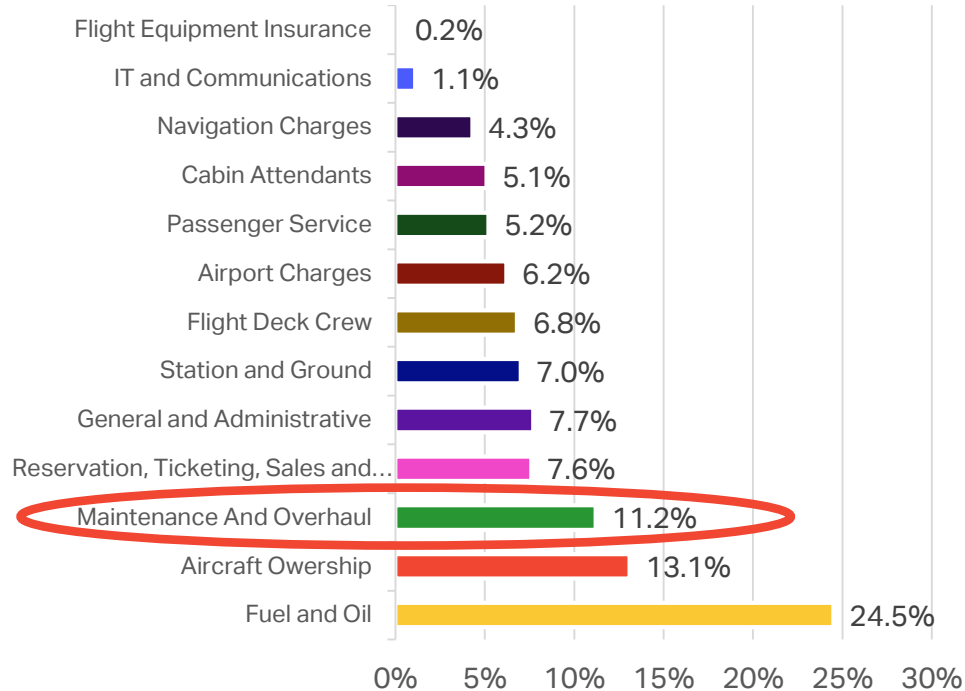
- Unique part numbers listed: 28,969
- Total units listed: 336,263
- Value in USD of all units listed: ~ \$212 millions



Source: IATA MRO SmartHub Connector



# MRO costs and global COVID impact

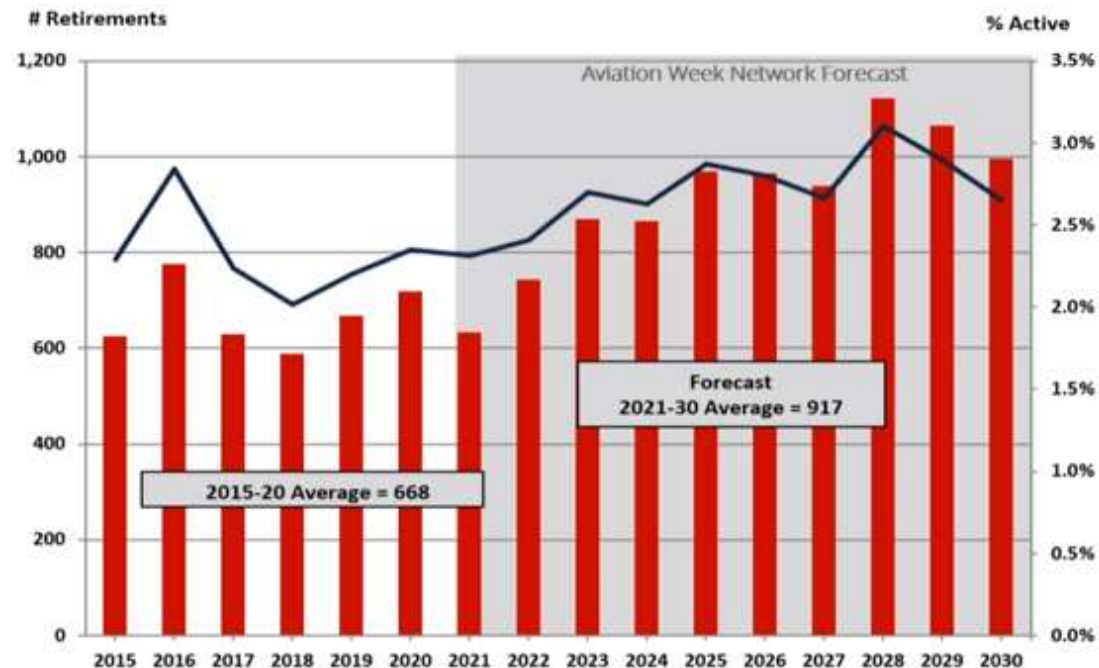


- Total demand for MRO in 2020 is estimated to be \$50.3 billion.
- Spending on all parts and materials is estimated at \$26 billion.
- Forecast for USM will be \$2.8 billion in 2020. Down from \$4.7 billion in 2019, a 40% reduction year on year.
- As flying and material spend return, expect USM demand to grow significantly at 68 percent per annum through 2022, when market can be expected to reach \$7.9 billion.

Source: Oliver Wyman

# Increase in Aircraft retirements – Impacts on USM availability

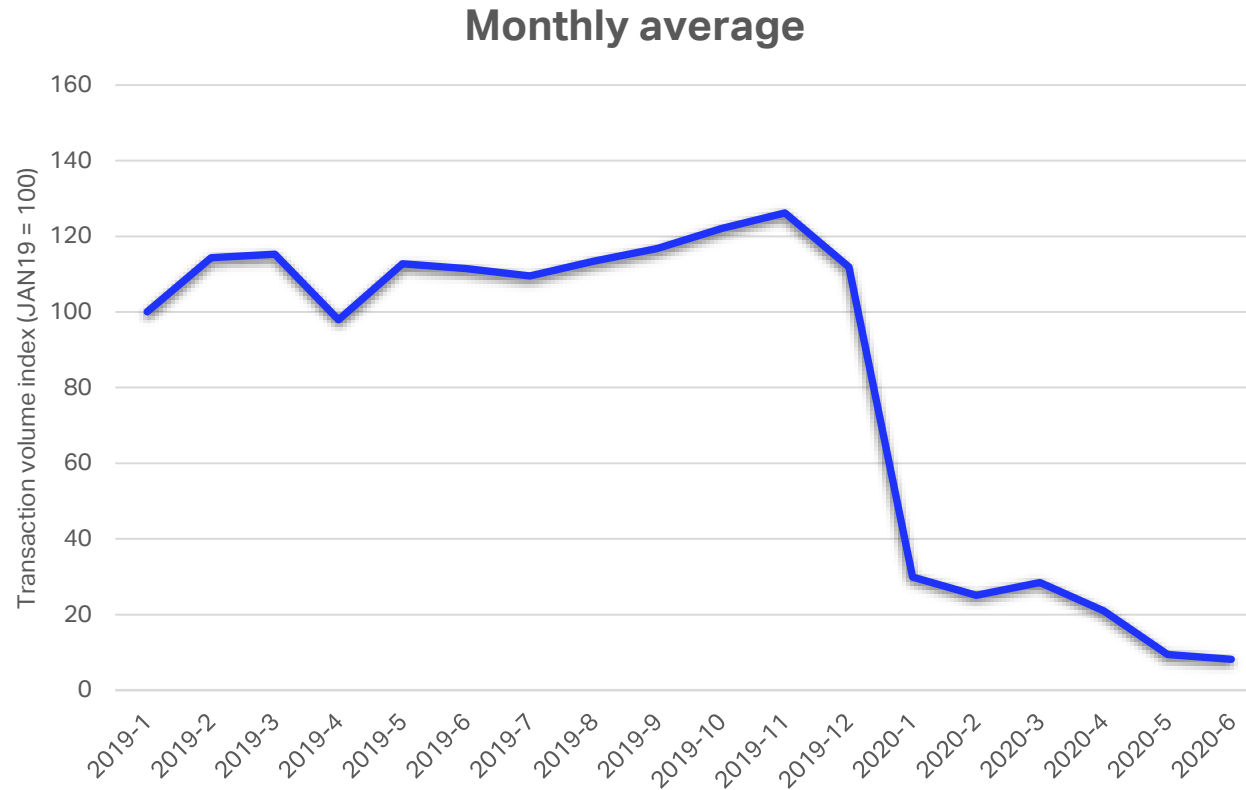
- Impact of COVID will see an increased rate of aircraft retirement and teardown.
- Increased supply will lead to downward pressure on prices of used components and parts for popular legacy types.



Source: 2021 Commercial Aviation Fleet & MRO Forecast, Fleet Discovery, Aviation Week Network, Copyright 2020.

# COVID-19 Impact on Market Dynamics

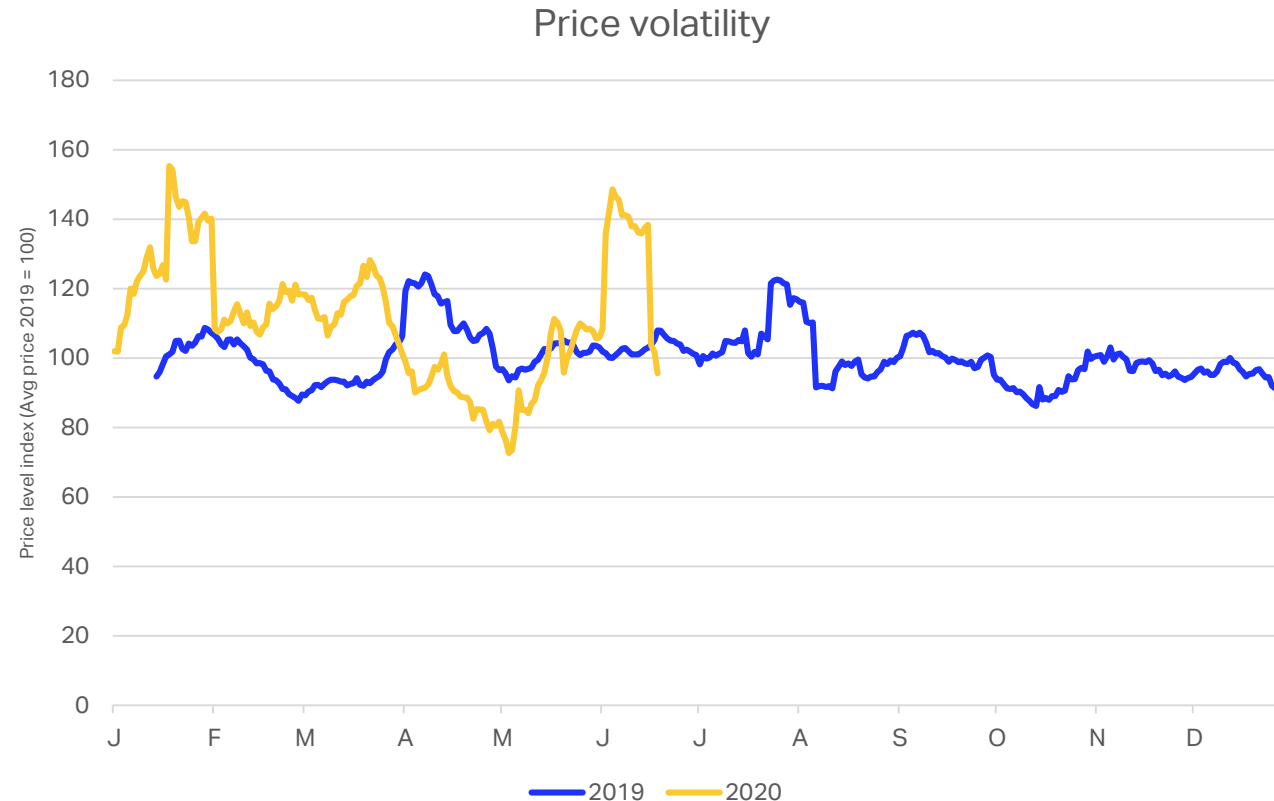
- Reduction of 90% in overall spare parts transaction volume.



Source: IATA MRO SmartHub Evaluator

# Significant increase in price volatility due to COVID-19

- The figure compares price levels for the first six months of 2019 to 2020.



Source: IATA MRO SmartHub Evaluator

# Future of USM market

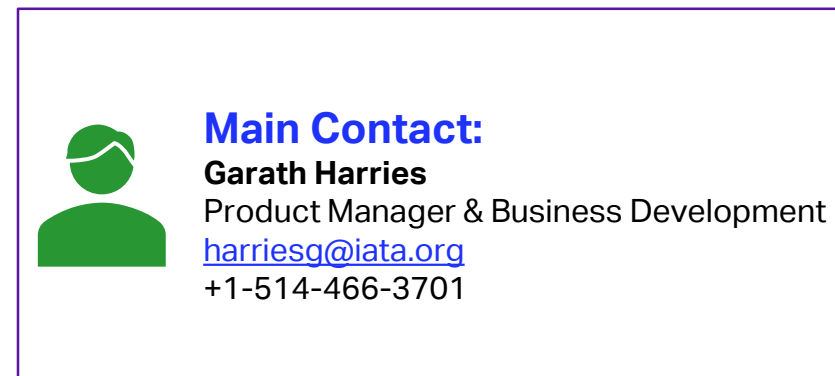
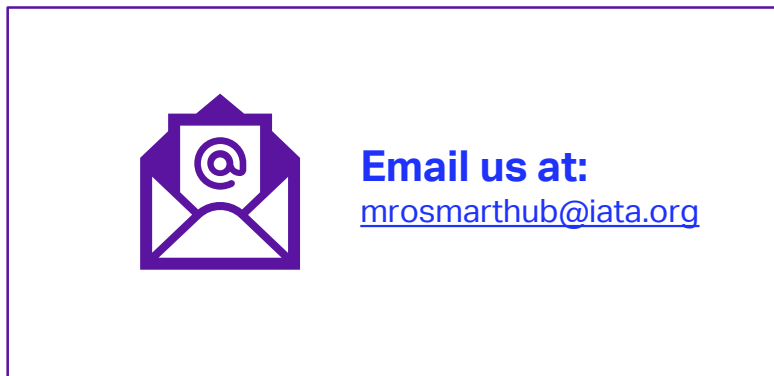
- USM will play a significant role in industry recovery.
- **Significant pricing volatility as supply increases & demand reduced.**
- **USM will become an increasingly acceptable lower cost alternative to new OEM parts.**
- **Determining fair market value (FMV) and securing reliable access to USM will be critical activities.**
- Demand for USM is expected to be very strong in the medium term.

Source: Oliver Wyman

- Fair Market Value (**FMV**) data linked to **actual market transactions**.
- **Unique market insights** based on algorithmic approach to FMVs for aircraft spare parts.
- **Community-driven data contribution** enriches overall insights by providing **benchmarking data**.
- Data contributions are **anonymized and secure**; only subscribers can view their own data points.
- Provides **granular intelligence at the part number level**, based on **material condition**.

# Questions?

- Register for a demonstration, and free access to the platform for a limited period:
  - [www.iata.org/covidmro](http://www.iata.org/covidmro)
- Subscribe through our website to receive further updates:
  - [www.iata.org/services/safety-flight-operations/Pages/mro-smarthub.aspx](http://www.iata.org/services/safety-flight-operations/Pages/mro-smarthub.aspx)
- **COMING SOON:** Our **Whitepaper** detailing the full impacts of COVID-19 on market dynamics and pricing volatility of spare parts
- **Full evaluations and detailed statistics available only on IATA MRO SmartHub.**



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# IATA COVID-19 Resources

The screenshot shows the IATA website header with navigation links: ABOUT US, CAREERS, CONTACT & SUPPORT, PROGRAMS, POLICY, PUBLICATIONS, SERVICES, TRAINING, EVENTS, PRESSROOM, and You & IATA. A search bar is also present. Below the header, there is a quote from Alexandre de Juniac, IATA's DG & CEO: "Stay strong. We will get through this crisis and keep the world connected." Below the quote is a link to "See latest media briefing". The main content area features several COVID-19 resource cards: "Resources for airlines and air transport professionals" (with a mouse cursor pointing to it), "Action Air Cargo", and "Recommendations for passengers". To the right, a financial data section shows "TOTAL LOSSES (EST. 2020 US\$)" of \$84.3 billion, "DEMAND (RPK, 2020)" down 54%, "FLIGHTS CANCELLED (JAN - JUL)" of 7.5 million, and "TOTAL REVENUE LOSSES (EST. 2020 US\$)" of \$419 billion down 50%. A link for "More financial developments" is also visible.

[www.iata.org](http://www.iata.org)

[www.iata.org/en/programs/covid-19-resources-guidelines](http://www.iata.org/en/programs/covid-19-resources-guidelines)

[www.iata.org/en/pressroom/covid-19-news](http://www.iata.org/en/pressroom/covid-19-news)

[airlines.iata.org/topic/covid-19](http://airlines.iata.org/topic/covid-19)

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Thank you for attending!

Any further questions?

Please email Geraldine Cros ([crosg@iata.org](mailto:crosg@iata.org))

Episode 4:  
The role of used serviceable  
material (USM) in the  
industry restart

