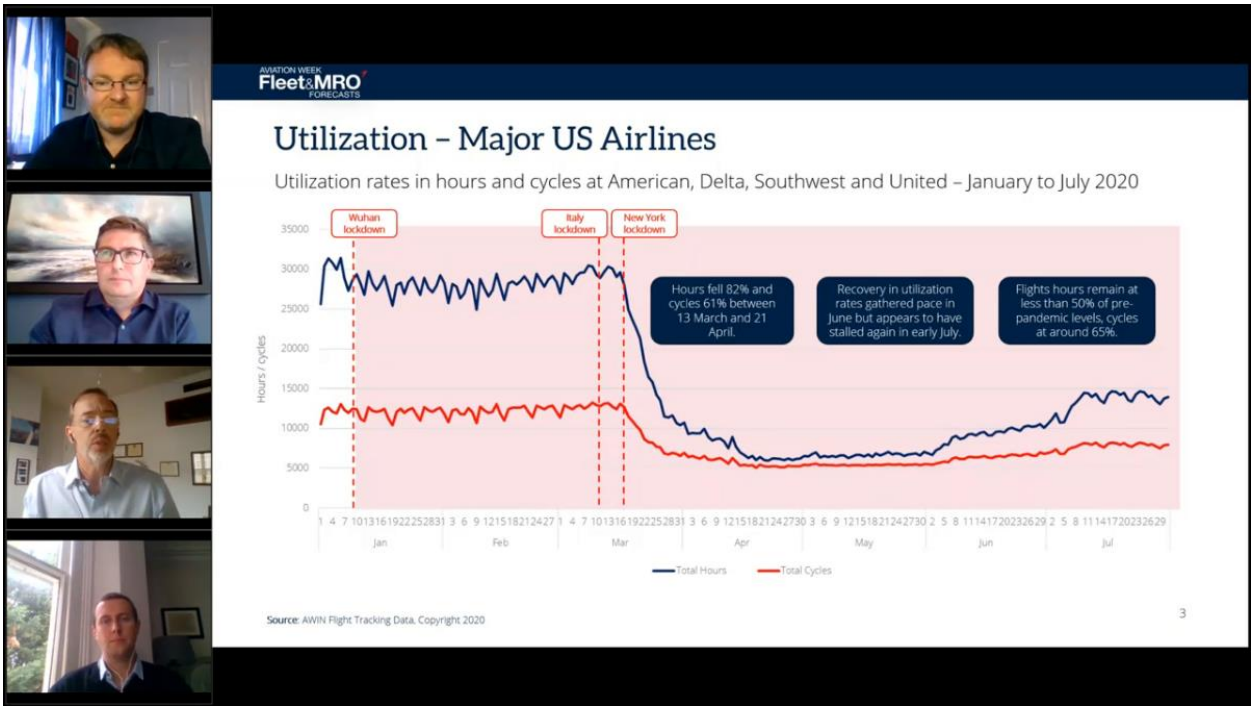
Commercial Aviation 2021 Fleet & MRO Forecast Webinar

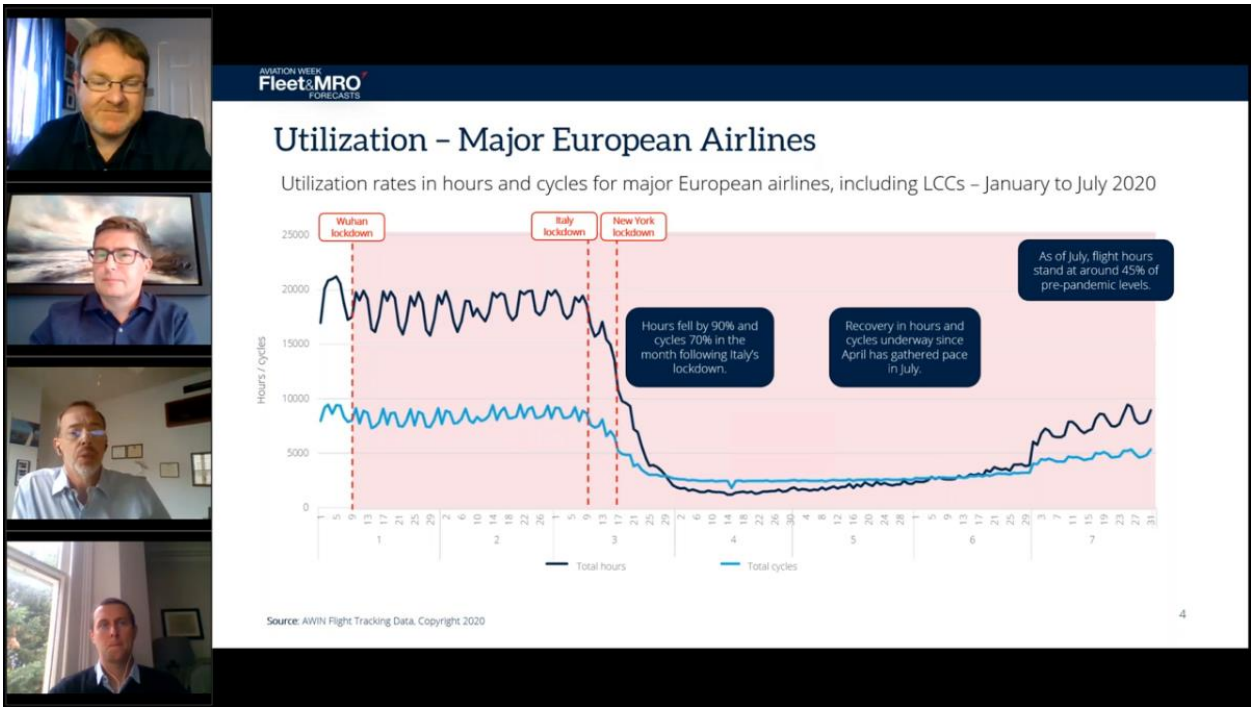
Brian Coe, Dan Williams, Clay Caffery

Released a “Service Bulletin” and monthly KPI and early release of forecast.

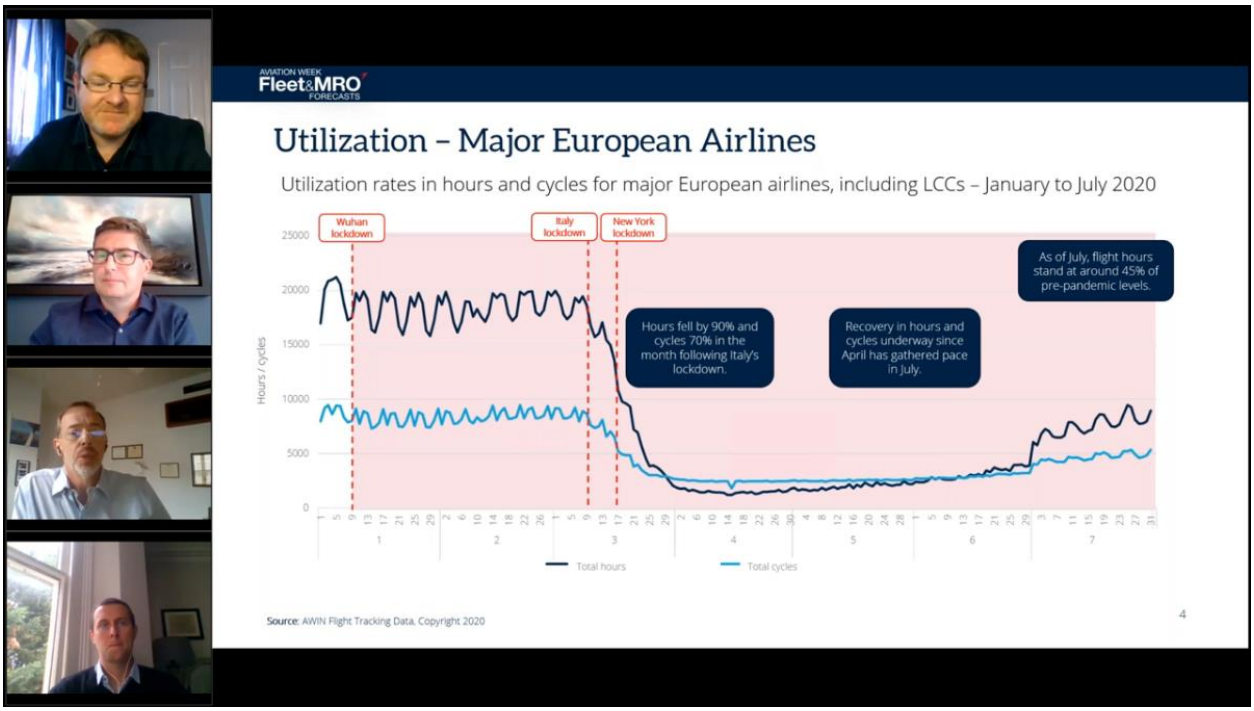
Estimate by IMF for GDPs across the regions



Major US airlines and tracking hours and cycles. Less than 50%

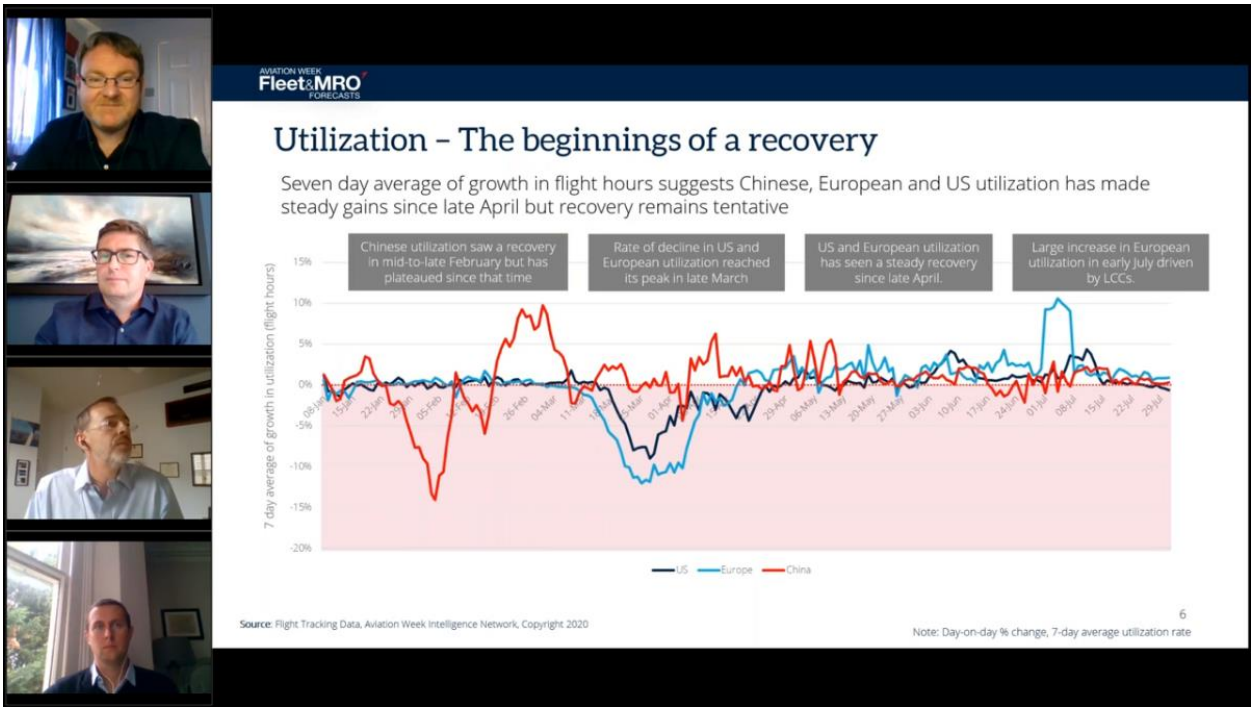


European less than 45% (interesting that longer haul routes seem to be coming on line – Lee’s insight)

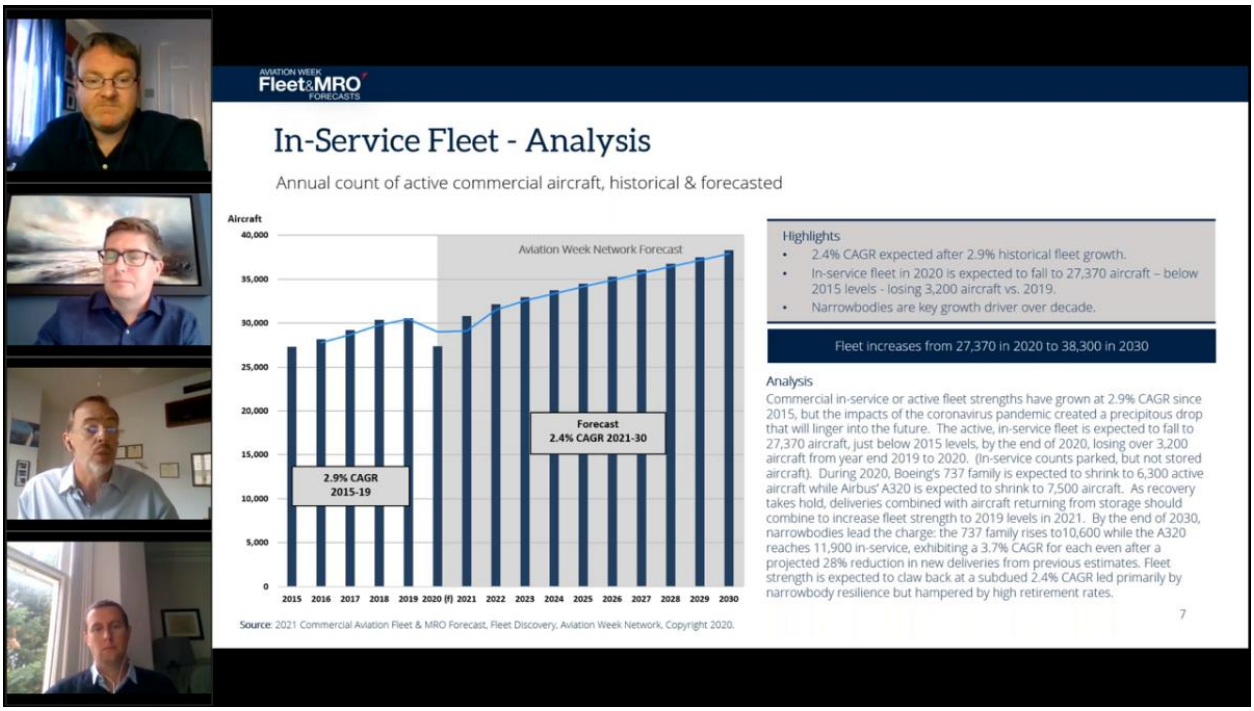


Missed slide…

Cargo (non package carriers)



Big Europe spike is Ryanair, Whizz and a couple others came back on line



Active: Aircraft – Flying, temp parked, in service (not retired or stored)

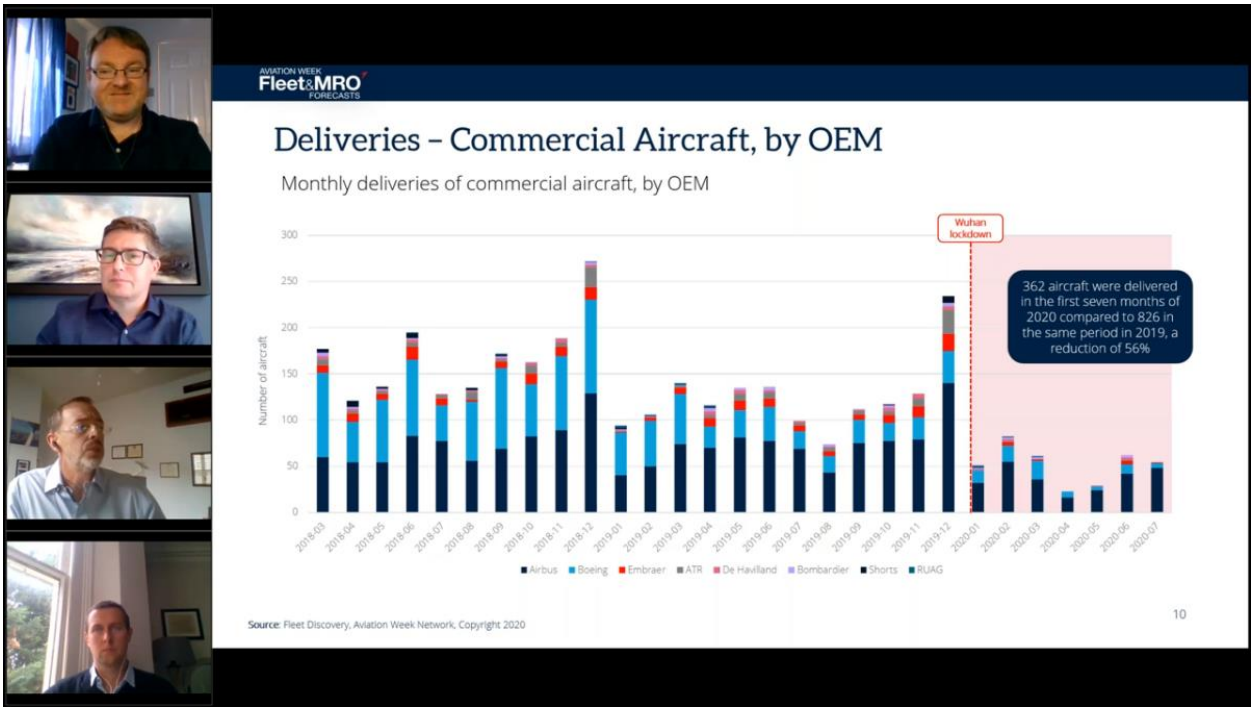
Assumes no Max aircraft deliveries 2020 but assumes resumption in

747-400, A340, A330 (costly D-Check), retirements

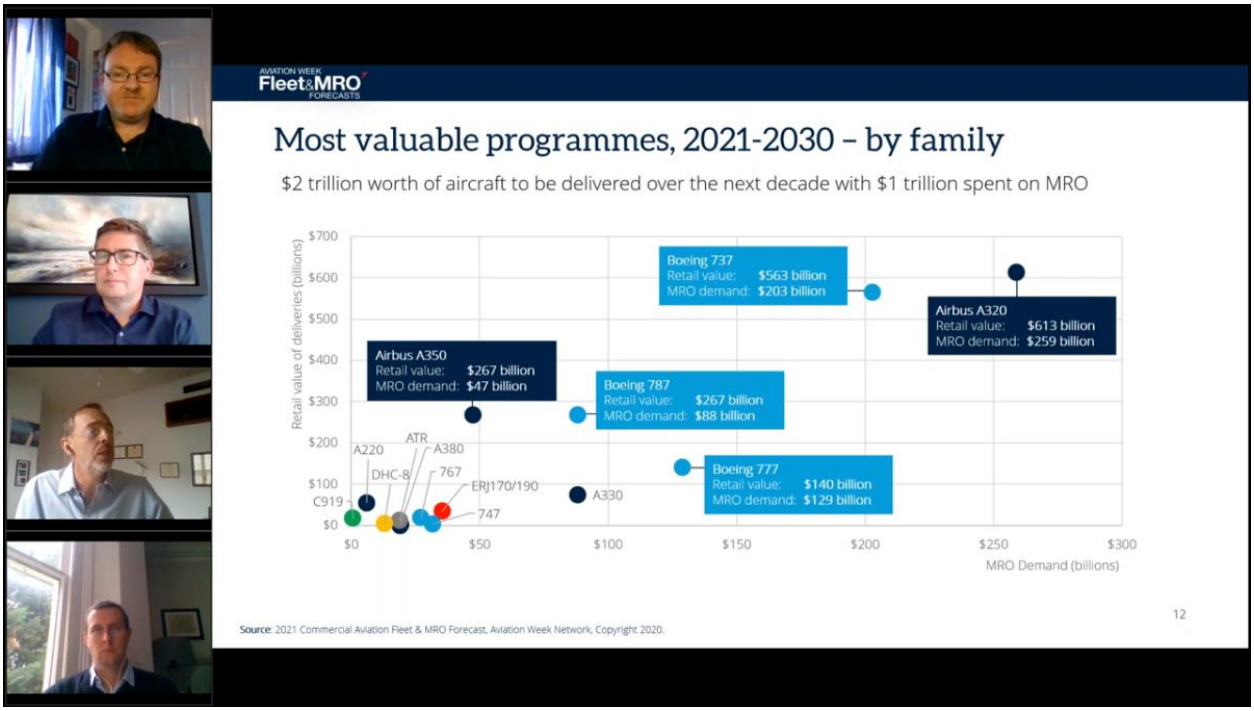
Some stored aircraft will “come back to life” later and this counters depressed production.

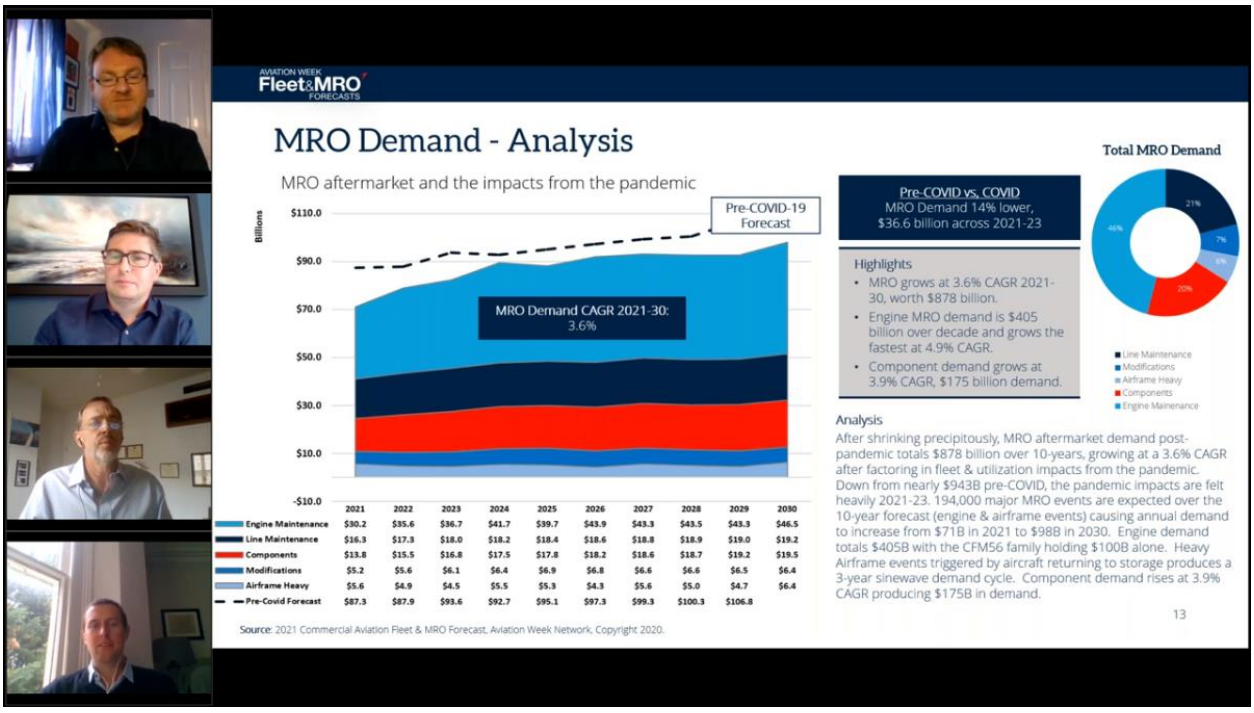
Four engine aircraft “leaving the earth”

Driven by aircraft age and economic life



Spikes are 450+ Max aircraft awaiting delivery




AVIATION WEEK
Fleet&MRO
FORECASTS
MRO Demand - Analysis
MRO aftermarket and the impacts from the pandemic
Billions
$110.0
$90.0
$70.0
$50.0
$30.0
$10.0
-$10.0
Pre-COVID-19 Forecast
MRO Demand CAGR 2021-30: 3.6%
2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
Engine Maintenance $30.2 $35.6 $36.7 $41.7 $39.7 $43.9 $43.3 $43.5 $43.3 $46.5
Line Maintenance $16.3 $17.3 $18.0 $18.2 $18.4 $18.6 $18.8 $18.9 $19.0 $19.2
Components $13.8 $15.5 $16.8 $17.5 $17.8 $18.2 $18.6 $18.7 $19.2 $19.5
Modifications $5.2 $5.6 $6.1 $6.4 $6.9 $6.8 $6.6 $6.6 $6.5 $6.4
Airframe Heavy $5.6 $4.9 $4.5 $5.5 $5.3 $4.3 $5.6 $5.0 $4.7 $6.4
Pre-Covid Forecast $87.3 $87.9 $93.6 $92.7 $95.1 $97.3 $99.3 $100.3 $106.8
Source: 2021 Commercial Aviation Fleet & MRO Forecast, Aviation Week Network, Copyright 2020.
Pre-COVID vs. COVID
MRO Demand 14% lower, $36.6 billion across 2021-23
Highlights
• MRO grows at 3.6% CAGR 2021-30, worth $878 billion.
• Engine MRO demand is $405 billion over decade and grows the fastest at 4.9% CAGR.
• Component demand grows at 3.9% CAGR, $175 billion demand.
Total MRO Demand
21%
7%
6%
20%
46%
Line Maintenance
Modifications
Airframe Heavy
Components
Engine Maintenance
Analysis
After shrinking precipitously, MRO aftermarket demand post-pandemic totals $878 billion over 10-years, growing at a 3.6% CAGR after factoring in fleet & utilization impacts from the pandemic. Down from nearly $943B pre-COVID, the pandemic impacts are felt heavily 2021-23. 194,000 major MRO events are expected over the 10-year forecast (engine & airframe events) causing annual demand to increase from $71B in 2021 to $98B in 2030. Engine demand totals $405B with the CFM56 family holding $100B alone. Heavy Airframe events triggered by aircraft returning to storage produces a 3-year sinewave demand cycle. Component demand rises at 3.9% CAGR producing $175B in demand.
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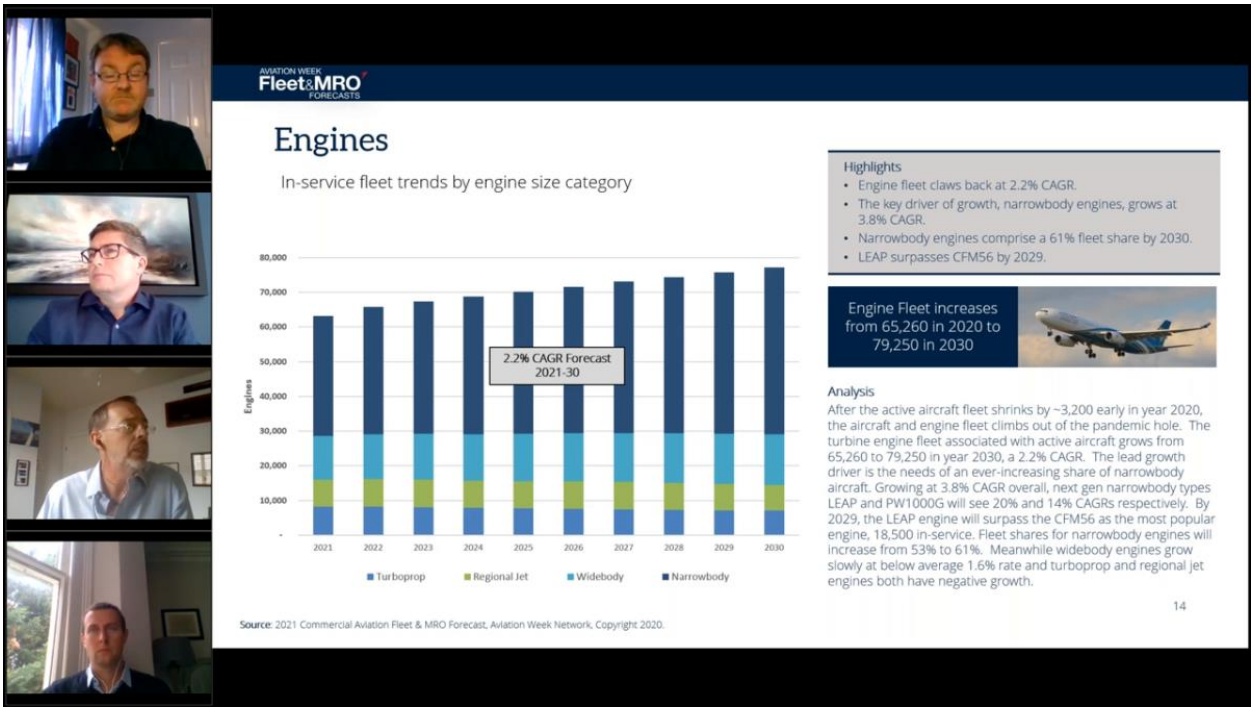
AVIATION WEEK
Fleet&MRO
FORECASTS
Engines
In-service fleet trends by engine size category
Engines
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
2.2% CAGR Forecast 2021-30
2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
Turboprop
Regional Jet
Widebody
Narrowbody
Source: 2021 Commercial Aviation Fleet & MRO Forecast, Aviation Week Network, Copyright 2020.
Highlights
• Engine fleet claws back at 2.2% CAGR.
• The key driver of growth, narrowbody engines, grows at 3.8% CAGR.
• Narrowbody engines comprise a 61% fleet share by 2030.
• LEAP surpasses CFM56 by 2029.
Engine Fleet increases from 65,260 in 2020 to 79,250 in 2030
Analysis
After the active aircraft fleet shrinks by ~3,200 early in year 2020, the aircraft and engine fleet climbs out of the pandemic hole. The turbine engine fleet associated with active aircraft grows from 65,260 to 79,250 in year 2030, a 2.2% CAGR. The lead growth driver is the needs of an ever-increasing share of narrowbody aircraft. Growing at 3.8% CAGR overall, next gen narrowbody types LEAP and PW1000G will see 20% and 14% CAGRs respectively. By 2029, the LEAP engine will surpass the CFM56 as the most popular engine, 18,500 in-service. Fleet shares for narrowbody engines will increase from 53% to 61%. Meanwhile widebody engines grow slowly at below average 1.6% rate and turboprop and regional jet engines both have negative growth.
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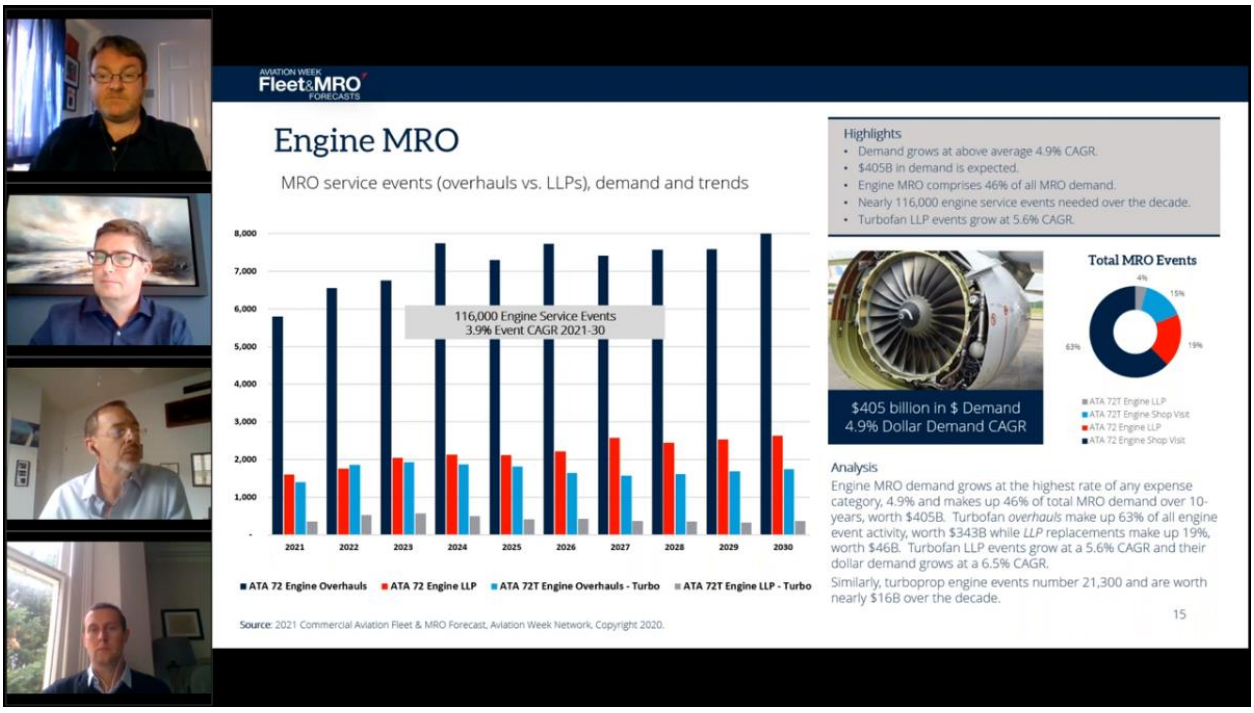
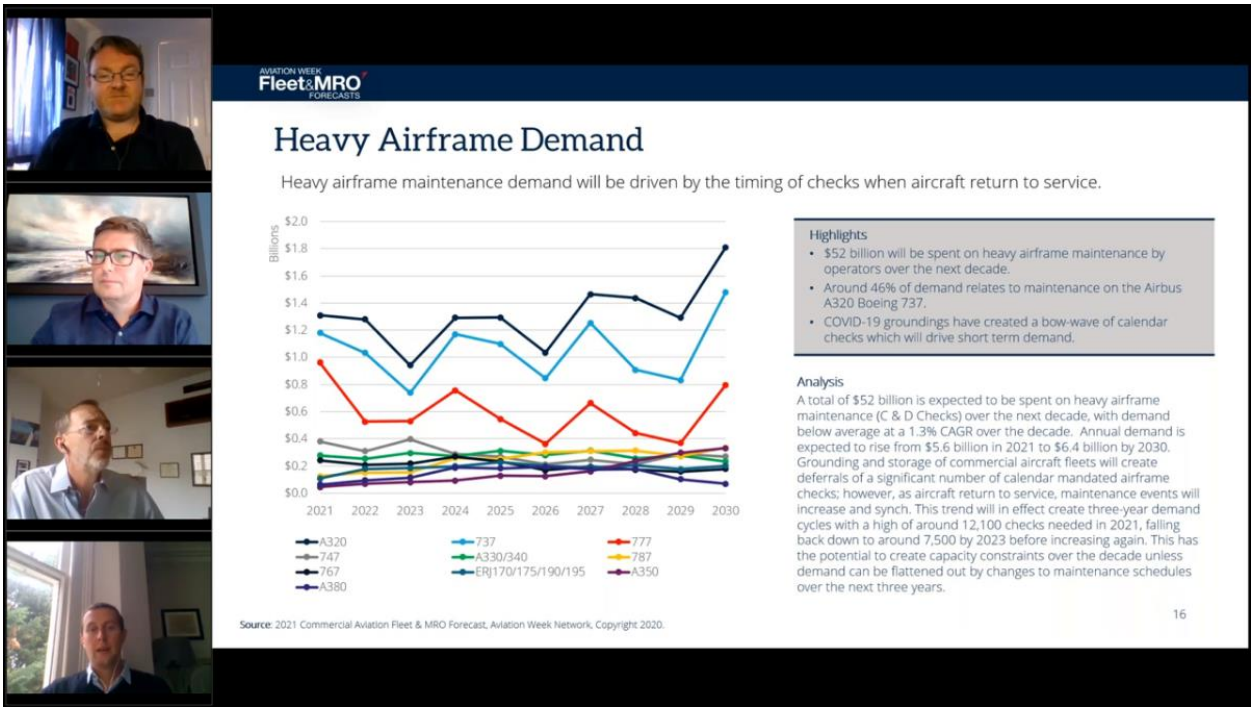
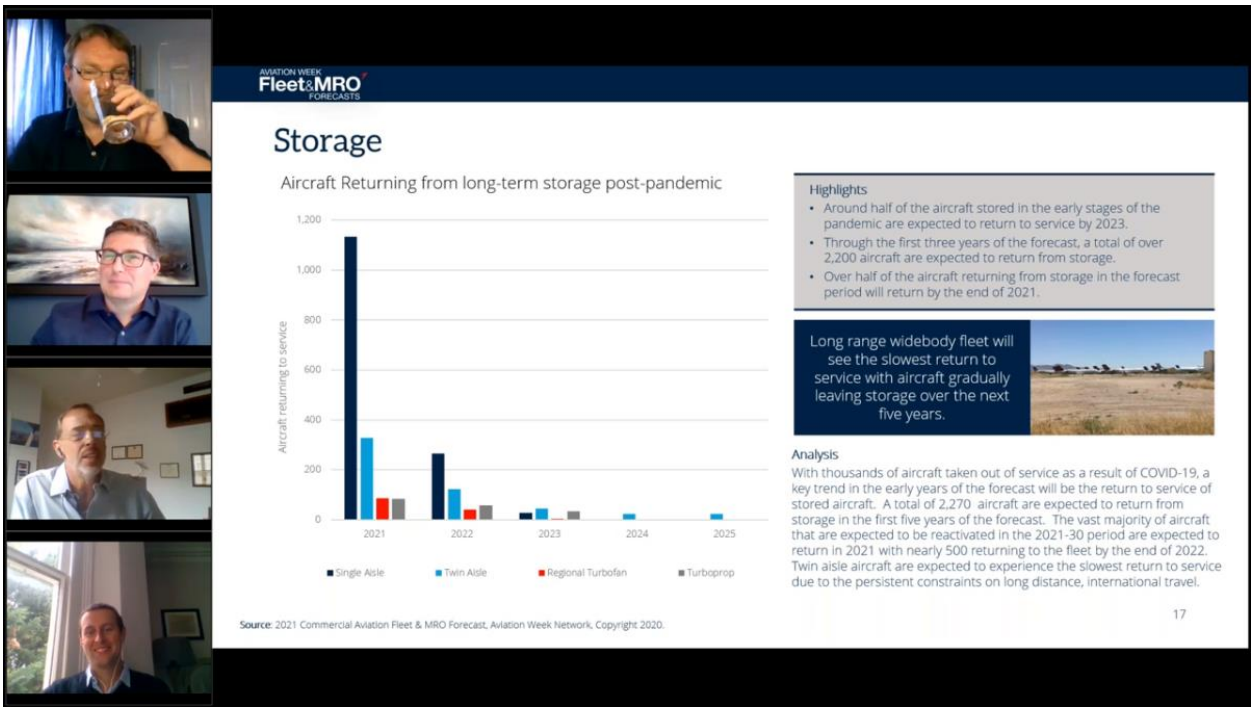




Downstream effects due in part to reintroduction of aircraft from storage


AVIATION WEEK
Fleet&MRO
FORECASTS
Storage
Aircraft Returning from long-term storage post-pandemic
1,200
1,000
800
600
400
200
0
Aircraft returning to service
2021
2022
2023
2024
2025
Single Aisle
Twin Aisle
Regional Turbofan
Turboprop
Highlights
• Around half of the aircraft stored in the early stages of the pandemic are expected to return to service by 2023.
• Through the first three years of the forecast, a total of over 2,200 aircraft are expected to return from storage.
• Over half of the aircraft returning from storage in the forecast period will return by the end of 2021.
Long range widebody fleet will see the slowest return to service with aircraft gradually leaving storage over the next five years.
Analysis
With thousands of aircraft taken out of service as a result of COVID-19, a key trend in the early years of the forecast will be the return to service of stored aircraft. A total of 2,270 aircraft are expected to return from storage in the first five years of the forecast. The vast majority of aircraft that are expected to be reactivated in the 2021-30 period are expected to return in 2021 with nearly 500 returning to the fleet by the end of 2022. Twin aisle aircraft are expected to experience the slowest return to service due to the persistent constraints on long distance, international travel.
Source: 2021 Commercial Aviation Fleet & MRO Forecast, Aviation Week Network, Copyright 2020.
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AVIATION WEEK
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FORECASTS
DISCOVER
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PLAN
FORECAST
Predictive Intelligence to Drive Results
67%
25%
2021
17%
15%
2030
35%
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