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Time to take stock



I Letter from François Robardet

At the forefront of more responsible European aviation, we bring people together to build the world of tomorrow.

(Raison d'être of the Air France-KLM group)

Air transport in France, Europe and the rest of the world

N°996, December 23, 2024

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Editorial

Dear readers,



I wish you all a very happy festive season.

I would also like to take this opportunity to thank all our colleagues who will be helping our customers to travel over the holidays.

Happy reading François

Monday's letter

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> Time to take stock

(source Journal de l'Aviation) December 17, 2024

My comment: Boeing's difficulties have marked the year 2024, but the main issue remains the ability to fill aircraft.

At the end of last year, the situation seemed favorable, with an increase in passenger numbers.

At the time, there was talk of "revenge travel", a phenomenon described by McKinsey & Company as "tourists seeking to reconnect, explore new destinations or return to their favorite places, after having had to cancel, abandon or modify their travel plans".

Some anticipated that this "revenge travel" would continue for premium and business passengers.

However, the rise of videoconferencing and the return of travellers to the train have put the brakes on this trend.

If I had to make a prediction, I'd say that 2025 will be a difficult year for air travel.

Airlines will have to redouble their efforts to attract passengers, spare parts production will remain insufficient, maintenance recruitment will continue to be problematic, and the decarbonization objectives for the air transport sector may prove more complex to achieve than expected.

Read the article:

The middle of December has passed, the approach of the "trêve des confiseurs" is beginning to take its toll, and time will slow down in the few days that separate us from the end of this year - except perhaps in the Airbus factories, full steam ahead to meet their annual delivery targets. The least we can say is that **2024 will still not have been a long quiet river**, even if the comparison with the years that preceded

it is rather to its advantage.

Remember, **it got off to a flying start** with the very first hull loss of a Japan Airlines Airbus A350 on January 2. An impressive accident, but quickly dislodged from the headlines **by the in-flight detachment of a door plug on an Alaska Airlines 737-9. All that was left of Boeing's reputation, already dented by previous quality problems, was sucked out with the plug**. The aircraft manufacturer had only just begun to recover from the 737 MAX and Covid crises, when it was grounded. The accident cost the company its management, increased FAA scrutiny and a production cap. Production is now at an all-time low, having been paralyzed by a strike by its machinists in September-October.

The U.S. aircraft manufacturer's woes have almost overshadowed the difficulties encountered by engine manufacturers with their most recent engines, which are not yet fully mature and whose excessively high removal frequencies continue to play tricks on the entire industry - whether in terms of operations or maintenance. More generally, the difficulties of the supply chain in general - and its necessary reorganization in view of the increasingly complex global geopolitical context - kept coming up in discussions, and while the situation is slowly recovering, the subject promises to remain at the top of the agenda next year, as Willie Walsh, IATA's Director General, loudly reminded us - on a par with the major difficulties of recruiting qualified personnel.

Despite this, the extra efforts made by all players to clean up their operations and optimize productivity in the wake of the health crisis are bearing fruit. Manufacturers' margins are at an all-time high, and even the air transport industry is benefiting.

IATA published its forecasts for 2024 and 2025 last week, and expects airlines to record sales and passenger volumes. Since 2022, operating and net profits, as well as operating and net margins, have returned to the levels of the years 2015-2020. **But after two years of catching up**, the revenue profile is changing: after two years at the top, **yields are starting to erode again over the long term**, costs are continuing to rise, and traffic, having returned to its pre-Covid level, is returning to a more traditional growth trajectory, held back by a continuing shortage of capacity due to late deliveries and a lack of spare parts, but helped by moderate fuel prices. Like a return to a form of normalcy.

> The list of airlines lagging furthest behind in 2024

(source BFM Business) December 20, 2024

My comment: Yet another source of satisfaction for Air France, following on from its position as the leading airline for the use of sustainable aviation fuels (see my <u>letter</u> <u>n°993</u>); it ranks among the most punctual airlines, well ahead of its main competitors, whether low-cost airlines or majors.

Read the article:

2024 was not all plain sailing for the airlines. While traffic grew again, the sector was confronted with a number of disruptions: strikes by air traffic controllers, the Olympic Games effect, but also global computer breakdowns or weather problems.

This resulted in numerous delays and even flight cancellations at airports. As it does every year, Flightright has compiled a list of the "least reliable" European operators. "Whether in minutes or hours, airport delays are becoming increasingly recurrent. And according to the data compiled and analyzed by Flightright, they don't just affect low-cost airlines", comments the site specializing in passenger rights.

In 2024 (the study covers the period from January 1 to December 13, and takes into account delays of 15 minutes or more at destination), **the unchallenged prize for the least punctual airline goes to TAP Air Portugal**, with a delay rate of 32.1% on 109,507 connections made, i.e. almost one flight in three.

Next come Jet 2 and easyJet, with 29.54% and 28.93% delays respectively. For easyJet, this represents no fewer than 157,000 delayed flights out of 542,000. Its rival Ryanair does worse in absolute terms, but operates far more flights: 186,000 delayed flights out of 980,000, representing a delay rate of 18.9% (ranking 14th).

Behind this leading trio are Swiss (27.8%), British Airways (27.6%) and ITA (27.3%). Only one French airline is in the Top 20: Air France ranks 8th, with a delay rate of 23.4% for 258,000 flights.

"Despite its status as the official carrier of the Paris Olympic Games, Air France nevertheless managed to minimize disruptions, ranking only 8th among the most delayed airlines this year", comments Imane El Bouanani, Flightright's spokeswoman for France.

Good performance by low-cost carriers

In terms of flight cancellations, German giant Lufthansa came out on top, with a rate of 2.8%, or almost 13,000 cancelled flights out of 458,000. Second place went to British Airways (2.1% or 6,200 cancellations), ahead of KLM with 1.6% or 3,800 cancelled flights out of 229,000.

Lufthansa subsidiaries also fared badly: Swiss and Eurowings were 4th and 5th, with cancellation rates of 1.45% and 1.39% respectively. Air France "is (almost) a

good pupil" in 8th place, with 1.16% of flights cancelled in 2024, i.e. 3,000 cancellations out of 258,000 flights.

"Over the year as a whole, however, it is Wizz Air Malta that proves to be one of the most reliable airline players in terms of maintaining scheduled flights. A low-cost operator, which will certainly come as a surprise! Of the 128,432 flights carried out, only 372 did not leave the runway. Ryanair, for its part, is also a good student, ranking 21st with only 0.17% of flights cancelled", points out Imane El Bouanani. (...)

> British Airways reschedules due to engine problems

(source Reuters) December 19, 2024

My comment: British Airways continues to experience problems with the Rolls-Royce Trent 1000 engines powering its Boeing 787 Dreamliner fleet.

Rolls-Royce's Trent 1000 engine has been experiencing recurring technical problems, compounded by ongoing supply chain constraints.

Rolls-Royce has acknowledged these difficulties, saying it continues to "work with British Airways and all our customers to minimize the impact of limited spare parts availability."

Rolls-Royce acknowledges that the problem extends beyond British Airways, highlighting the current supply chain constraints affecting the aviation industry.

Earlier this year, Rolls-Royce warned that supply chain disruptions were likely to continue until 2026.

Read the article:

British Airways, owned by IAG, **has had to make further changes to its schedules due to engine problems**, it told Reuters on Thursday, after several media outlets reported that it had cancelled summer flights between Heathrow (London) and Abu Dhabi.

The airline had already reduced its long-haul flights this year due to delays in the delivery of Rolls-Royce engines and spare parts.

Further changes have been made to schedules due to a problem **with 1,000 engines for its Boeing 787 aircraft,** British Airways said on Thursday, without confirming the reported reduction of the Abu Dhabi-Heathrow route. $\left(\ldots\right)$

> Ryanair reportedly abandons Orly service

(source Les Echos) December 17, 2024

My comment: While the announcement of Ryanair's arrival at Orly took me by surprise, the announcement of its withdrawal seems logical.

As the article points out, Ryanair has always favored secondary airports for financial reasons.

This has often provoked indignation from other airlines, who denounce the illegal subsidies granted to Ryanair by local authorities.

However, it has to be said that passengers don't seem to be put off by the remoteness of these airports.

Read the article:

Ryanair backtracks. After announcing at the beginning of December that it would serve Orly airport, the Irish airline has surprisingly backtracked. Its CEO, the notoriously thrifty Michael O'Leary, finally vetoed the move on Tuesday, according to Le Monde. Contacted, Ryanair did not respond to our requests.

However, the low-cost airline had obtained two landing and takeoff slots to serve Bratislava (Slovakia) and Bergamo (Italy) from the southern Paris airport, where Transavia reigns supreme. **These "slots"**, allocated by the Slot Coordination Association (Cohor), **would have been exceptions in Ryanair's strategy, which usually prefers secondary airports and the substantial subsidies they pay to encourage it to use them**. These two daily routes from Orly were scheduled to be operational from April 1, 2025.

(...)

Ryanair's arrival at Orly would have marked an important turning point in the French strategy of Europe's leading low-cost airline. Although it had already made at least one attempt to obtain slots at Orly, **Ryanair had always considered the two major Paris airports too expensive and too complicated, preferring Beauvais instead**. This turnaround is all the more remarkable in that it comes after Ryanair threatened to close half its destinations in France, if the air transport tax provided for in the draft budget is applied.

> Qatar Airways may abandon its order for Boeing 737 MAX 10s

(source Journal de l'Aviation) December 19, 2024

My comment: Boeing is still suffering the consequences of its mismanagement.

Fortunately for the American manufacturer, none of its competitors is in a position to take market share from it.

It remains to be seen whether Boeing will be able to maintain a sufficient sales price to avoid losing money on future deliveries.

Read the article:

The Boeing 737 MAX 10 may never join the Qatar Airways fleet. According to Bloomberg, the Qatari airline is considering converting the 25 aircraft in its order to 737 MAX 8s, and then assigning them to the fleets of its partner airlines.

According to the agency, the aircraft are no longer suited to the company's needs. **The order had in** fact **been signed in 2022, at a time when a commercial and legal dispute over the A350s was pitting Qatar Airways against Airbus**, leading to the delisting of all the company's orders from the European aircraft manufacturer's order book, including 50 A321neo aircraft. The orders have since been reinstated, and although delivery slots have slipped, the A321neo remains the company's first choice for implementing its projects.

The Boeing 737-10 is also plunged into uncertainty. Several years behind schedule, it has still not been certified, mainly due to a problem with the engine's anti-icing system, and the date of its certification remains uncertain. (...)

> EcoPulse paves the way for more sustainable aviation

(source: Safran, Daher press release) December 10, 2024

My comment: EcoPulse is a great step forward for low-carbon aviation.

However, we should be under no illusions: this technology cannot be implemented on aircraft with more than 100 seats by 2050.

By 2050, the two reasonable avenues for decarbonizing aviation are sustainable aviation fuels and, to a lesser extent, open-rotor engines (see <u>Letter n°988</u>), if they are operational by 2035.



Read the article:

EcoPulse, the distributed hybrid-electric propulsion aircraft demonstrator developed jointly by Daher, Safran and Airbus, has concluded its flight test campaign, delivering crucial lessons for achieving the objectives of decarbonizing air transport by 2050. This collaborative project, emblematic of the French aeronautics industry, has enabled us to gain unique experience in the design, certification, production and operation of hybrid-electric aircraft.

Pioneering flight tests

EcoPulse completed its first hybrid-electric test flight on November 29, 2023 from Tarbes airport. It has accumulated 100 flight hours since its first flight, and completed some 50 test flights with hybrid distributed propulsion, the last of which was carried out in July 2024. This test campaign made it possible to test an unprecedented level of on-board electrical power for distributed electric propulsion, with a network voltage of around 800 Volts DC and a power of 350 kilowatts.

The flight tests yielded a number of conclusions. In particular, they enabled us to objectively assess the maturity of hybridization technologies, to measure their true level of performance integrated into the aircraft, and to identify their operational limits.

For example, the tests showed that the synchro-phasing of ePropellers (electric motors) can reduce interior noise. This synchro-phasing is an additional benefit of the innovative flight control computer, whose main objective is to maneuver the aircraft - as a substitute for control surfaces - by playing on the distribution of

electrical power between the ePropellers.

Technological challenges for the future

More generally, EcoPulse has made it possible to meet the key challenges of decarbonizing aviation:

- Electric and hybrid-electric architectures.
- Development of key equipment: batteries (performance and operational range) and high-voltage management systems (>400V).
- Pilot assistance with specific interfaces
- Logic for demonstrating seaworthiness
- Mass and noise optimization
- Complexity management skills

The flight test campaign enabled us to prepare the compliance files for meeting the regulatory requirements for the introduction of hybrid-electric propulsion, and to lay the foundations for a safety certification method for aircraft with innovative configurations.

An exemplary collaboration at the heart of aeronautical innovation

The EcoPulse project illustrates the strength of high-level cooperation between Daher, Safran and Airbus. By pooling their expertise and testing resources, the partners have demonstrated the complementarity and significant synergies between general and commercial aviation.

"We are particularly satisfied with the success of the EcoPulse program and its results. This is the first time we have tested a complete hybrid-electric propulsion chain in flight, and these tests represented an important milestone for our technology roadmap," said Eric Dalbiès, Safran's Executive Vice President, Strategy, R&T and Innovation. The lessons learned enable us to continue validating decarbonization technologies."

"EcoPulse has enabled Daher to reach a crucial milestone in the development of a low-carbon aircraft. This project has not only helped us to design an operational operating system for a demonstration prototype, but also to grasp critical technological barriers. Thanks to this rich and unprecedented collaboration, we have made considerable progress on the road to hybridization", emphasized Pascal Laguerre, Daher's Chief Technology Officer.

"This EcoPulse campaign enables us to advance certain hybrid-electric technologies, such as the high-voltage battery, and their integration into future

aircraft, helicopters and air mobility solutions," said Jean-Baptiste Manchette, Head of Propulsion of Tomorrow at Airbus Commercial. "With distributed electric propulsion, we have achieved our goal of modeling the physics of flight and managing energy at aircraft level, key elements in shaping the next generation of aircraft," he added.

Ecopulse is a collaborative project supported by CORAC (Conseil pour la Recherche Aéronautique Civile) and co-funded by DGAC (Direction Générale de l'Aviation Civile française) through France Relance and NextGeneration EU.

Unveiled at Le Bourget 2019, based on a Daher TBM aircraft platform, EcoPulse is equipped with six ePropellers (supplied by Safran), distributed along the wings. Its propulsion system integrates two energy sources: a turbogenerator, i.e. an electric generator driven by a gas turbine (supplied by Safran), and a high-voltage battery pack (supplied by Airbus). At the heart of this architecture is a power distribution and rectification unit (PDRU), responsible for protecting the high-voltage network and distributing the available electrical power, as well as high-voltage power supply harnesses (both supplied by Safran). The battery designed by Airbus is rated for 800 Volts DC and can deliver up to 350 kilowatts of power.

The demonstrator also benefits from the aerodynamic and acoustic integration expertise of Airbus, which has also developed the flight control computer enabling the aircraft to be maneuvered using ePropellers, and the synchro phasing to support the aircraft's future acoustic recommendations.

EcoPulse, a milestone on the road to tomorrow's low-carbon aviation

With the conclusion of the EcoPulse program, Daher, Safran and Airbus have strengthened their commitment to sustainable aviation. This pioneering project lays the foundations for the technological and regulatory advances needed to meet the environmental challenges of tomorrow's air transport.

End of press review

> Air share price trend

Air France-KLM shares closed at 8.000 euros on Friday December 20. Over the week, it is stable (-0.17%).

It was 12.53 euros on January 2, 2023, and 17.77 euros on June 19, 2023.

The analysts' 12-month average (consensus) for AF-KLM shares is 10.66

euros (it was 15.0 euros at the beginning of January 2023). The highest price target is 17.50 euros, the lowest 7.10 euros.

I only take into account analysts' opinions after July 1, 2023.

You can find details of the analyst consensus on my blog.

My comment: The adoption of the motion of censure had the effect of cancelling the increase in the solidarity tax due to come into effect on January 1, 2025.

Investors took this into account, and the share price had risen by 9% in two weeks, before stagnating this week.

> Fuel price trends this

The price of a barrel of Jet Fuel in Europe is down (-\$3) to \$88. It was \$94 at the end of June 2023, and \$79 before the outbreak of war in Ukraine.

Brent crude oil (North Sea) is down (-\$1) to \$73 a barrel.

From mid-February 2022 to the end of July 2022, it was yo-yoing between \$100 and \$120. Since then, it has oscillated between \$71 and \$99.

My comment: Over the past month, oil prices have shown little change. It is at a two-year low.

> Corporate Mutual Funds

When you invest in one of Air France's FCPE funds, you obtain shares in these funds. You do not hold shares directly.

It's the supervisory boards, which you elected in July 2021 for a five-year term, that manage the funds and make the decisions.

The Partners for the Future, Aeroactions, Majoractions and Concorde funds only hold Air France shares.

The Horizon Épargne Actions (HEA), Horizon Épargne Mixte (HEM) and Horizon Épargne Taux (HET) funds manage portfolios of various equities.

My comment: If you'd like to find out more about how the various Air France FCPEs are managed, please visit the <u>Air France-KLM Employee Share Ownership</u> <u>section of our navigaction website</u>.

Details

This information does not constitute a solicitation to buy or sell Air France-KLM shares.

You can react to this press review or send me any information or thoughts that will help me to keep you better informed.

By return, you can ask me any questions you may have about the Air France-KLM group or employee share ownership...

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François Robardet

Air France-KLM's raison d'être:

At the forefront of more responsible European aviation, we bring people together to build the world of tomorrow.

I represented current and former Air France-KLM employees. You can find me on my twitter account @FrRobardet and on LinkedIn.

This newsletter deals with the airline industry around the world and topics related to Air France-KLM shareholding. If you no longer wish to receive this newsletter, <u>[unsubscribe</u> If you wish to change your e-mail address, please <u>let know your new address.</u>me To contact me: <u>Message for François Robardet</u>.

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