Aeronautics in the turmoil of sanctions against Russia

Letter from the Director of Air France-KLM

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Representative of the employees and former employees shareholders PS and PNC

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Editorial

Ukrainian cargo plane Antonov-225

Dear readers,

It is impossible to remain indifferent under the current circumstances. My thoughts today are with the Ukrainian civilians, the first victims of the current invasion.

And since my letters are devoted to the world of aviation, how can I not mention what happened to the Ukrainian Antonov-225, the world's largest cargo plane?

I quote the newspaper La Tribune:

The Ukrainian Antonov-225 cargo plane, was destroyed by Russian strikes on an airport near Kiev in the midst of heavy fighting.

This unique aircraft with its six engines, which was 84 meters long, could carry up to 250 tons of cargo at a speed of up to 850 km/h, was a real myth in the world sky.

Initially built within the framework of the Soviet aeronautical programs, in particular for the transport of the Buran
space shuttle, the An-225 made its first flight in 1988.

After the fall of the Soviet Union in the early 1990s, it remained several years without activity before resuming service in the early 2000s for cargo flights.

Since then, it was operated by Antonov Airlines, a Ukrainian carrier, for cargo flights on demand.

During the Covid-19 crisis, especially at the beginning of the pandemic, the aircraft was very much in demand to transport masks or medical equipment.

In April 2020, it landed for the first time in France since 2014, more precisely at Vatry airport to unload goods from China.

François

Monday's Press Review

> Airline and aeronautics in the turmoil of the sanctions against Russia

(source Les Echos) February 28 - Same cause, same effect. As in 2014, during the previous Russian aggression against Ukraine, **aeronautics and air transport are at the top of the list of sectors impacted by American and European retaliatory measures, as well as by Russian retaliation**. Once again, these measures are being implemented very gradually, and their effectiveness has not always been proven.

The first consequence of the invasion of Ukraine is of course the complete closure of Ukrainian airspace, announced on Thursday morning by Eurocontrol, as well as of neighbouring areas, such as southern Russia and most of the Black Sea. The day before, some 400 flights had used the Ukrainian sky, which had almost returned to its level of traffic in 2019 at the beginning of the year. Most of Ukraine's airports have come under Russian attack, starting with Kiev International Airport. Violent fighting has been going on since yesterday for control of the Antonov airport in Hostomel, 30 km from the Ukrainian capital, the birthplace of the Ukrainian aircraft manufacturer of the same name and where the world's largest plane, the Antonov 225, is based, whose status is still uncertain.

In addition to these direct consequences of the war, the United Kingdom decided on Thursday to ban all Russian companies from their airspace. A measure which in fact only concerns Aeroflot. This led, the next day, to a ban on Russian airspace to British companies from Friday. Over the weekend, **a dozen European countries**, including Poland, Romania and the Baltic States, followed the **UK's lead, banning Russian airlines from their airspace. Germany also wants to close its airspace to Russian aircraft** following the invasion of Ukraine, a spokesman for the German Ministry of Transport told AFP on Saturday. **As for France, it has decided to close its airspace "to Russian aircraft and airlines" from Sunday evening,** announced on Twitter the Minister Delegate for Transport, Jean-Baptiste Djebbari.

In retaliation, Russia announced on Sunday that it was closing its airspace to companies linked to or registered in Latvia, Lithuania, Estonia and Slovenia. This ban will also affect transit flights made in Russia by these companies, said in a statement the Russian civil aviation agency, Rosaviatsia. The agency said that flights of Russian companies will continue to be carried out to the enclave of Kaliningrad, passing over international waters in the Baltic Sea and bypassing Lithuania. On Saturday, Russia closed its airspace for aircraft linked to Bulgaria, Poland and the Czech Republic.

These flight bans, which are likely to become the common rule in Europe over the next few days, should gradually reduce activity in the Russian sky to domestic and military traffic. This will result in hundreds of millions of dollars in lost revenue for Russian airlines and civil aviation. But **they will force European airlines to make a detour via Asia Minor and India to serve China, Japan and Korea - which will increase flight times by one to two hours. The additional fuel costs for airlines such as Air France and Lufthansa, which operate hundreds of flights per week via the Siberian route, would be around ten million euros per week.**

However, the **consequence of this crisis most feared by airlines remains the possible surge in oil prices**. For the first time since 2014, the price of a barrel of oil has exceeded 100 dollars, which is considered the alert threshold for air transport. For the time being, airlines like Air France have hedges in place that have allowed them to cushion the impact of this rise. However, if the rise in prices continues or becomes more pronounced, they will have no choice but to raise their fares, at the risk of disrupting the recovery in traffic at a time when demand remains fragile.

Another retaliatory measure that is very damaging for Russian companies is the European Union's decision, announced on Friday, to impose an embargo on sales of aircraft and spare parts to Russian companies. Even if Russia has maintained a civil aviation industry, most of the modern aircraft in service with Russian companies are Boeing and Airbus, the European aircraft manufacturer counting 340 aircraft in service in Russia, including its latest A320 neo and A350 models, and a dozen customers.

Deprived of spare parts, these aircraft are likely to be grounded soon, unless they are counterfeited. Some of them will be taken over by their lessors. A good half of the civilian helicopters in service in Russia are also Airbus. However, this embargo could also force foreign companies to stop serving Russia, as they cannot find the necessary spare parts in case their aircraft break down on the ground.

Even the few modern Russian aircraft depend on Western equipment, despite Moscow's efforts to reduce the dependence of its civil aviation industry. For example, Safran is the main supplier of the Sukhoi SuperJet 100, for which it manufactures the landing gear and engines in partnership with Russian engine manufacturer NPO Saturn. Irkut's new MC-21 single-aisle medium-haul aircraft still uses Pratt & Whitney engines. In addition, Airbus, Safran and even Boeing have design offices in Russia, with several hundred engineers, who risk being put out of work.

But here again, Russia is not short of retaliatory measures. In addition to order cancellations - Aeroflot has yet to receive a dozen A350s - **Russia's main lever is titanium, of which it is the world's leading producer**. Both light and strong, this metal is indispensable to the aerospace industry, which is its biggest user. It is found almost everywhere, from engine turbine blades to fuselage components, including landing gear. **It accounts for about 15% of the metal weight of a Boeing 787 or an A350. Fifty percent of the titanium used by the European aerospace industry comes from Russia's VSMPO**, a subsidiary of the state-owned military-industrial holding company Rostec, which alone supplies 30 percent of global production.

Airbus and Safran say they have increased their stocks to meet their short-term needs, "by next fall," said Safran's CEO. But if Russia were to impose a long-term embargo on its titanium exports, it is unlikely that its main competitor, the American Timet, would be able to meet demand.

My comment: *The difficulty in implementing retaliatory measures that would only have an impact on Russia illustrates how interdependent the economies of different countries are.*

The example of aircraft engines is striking: on the one hand, Russia needs these engines and spare parts, while on the other hand Safran needs Russian titanium to *manufacture them.*

> Dutch Lower House puts the benefits of aviation above nitrogen problems

(source Volkskrant, translated with Deepl) February 24 - The first major debate on aviation in a long time made it clear Thursday that the economic benefits of aviation still weigh heavily on a majority of the Dutch parliament. **Most political groups recognize that Schiphol and other Dutch airports contribute significantly to the nitrogen and climate problem, but they do not necessarily see the solution in reducing the number of flights**.

Schiphol has been operating illegally since 2019, because it does not have a valid nature permit. The government tolerates this, because otherwise Schiphol would have to significantly reduce the number of flights. Schiphol has applied for a permit, but the measures the airport wants to take to offset its own nitrogen emissions are not sufficient, according to legal experts. **The airport must submit a new proposal for compensation, with new nitrogen calculations.**

(...)

Green-Left MEP Suzanne Kröger and PvdD MEP Lammert van Raan **ask Minister Mark Harbers (Infrastructure) to immediately limit the number of flight movements at Schiphol to a maximum of 400,000**, until it is clear how much nitrogen the airport is allowed to emit. If we don't do anything, Schiphol will have 500,000 flight movements again in no time," says Kröger. However, Harbers does not believe that a hasty reduction of the flight cap for Schiphol is necessary, because the actual number of flights due to the coronal pandemic is much lower than the cap anyway.

D66 MP Raoul Boucke wants the government to cancel the plans for a sixth runway (the second Kaagbaan). **In his opinion, the "physical growth" of Schiphol should no longer be possible in view of all the environmental problems**. PvdA MP Habtamu de Hoop asked Boucke if D66 was also against increasing the number of flight movements. This is not the case, as Boucke's evasive answer reveals. D66, like the CDA, does not want to categorically exclude the growth of the number of flights. Both parties want to wait for the new nitrogen calculations at Schiphol first.

The coalition partner, the VVD, is banking on a growth to 550,000 flight movements. Daniël Koerhuis, spokesman for the aviation industry, also wants the noise standards around Schiphol to be relaxed, so that the municipalities around the airport can build more housing. **According to the VVD, noise pollution should be combated by façade insulation programs.** According to the VVD member, the inhabitants of the area are less concerned about noise pollution than about the fact that their children cannot find housing.

Harbers wants to make a decision about Lelystad airport this year. Coalition partners CDA and D66 have always said they could only agree to the opening of Flevo Airport if there was no low-level flight route. Former aviation minister Cora van

Nieuwenhuizen also promised the latter on several occasions. But Harbers now points out to the Lower House that a low-level flight route to the east (over Zwolle) is unavoidable from the point of view of airspace safety. Boucke and CDA spokesman Harry van der Molen have explicitly left room for concessions on this point. **In the coalition agreement, no firm agreement has been made on whether or not to accept a low-level flight route to Lelystad.**
The VVD, CDA and PVV urge Harbers to heed the call for help that Groningen Airport Eelde (GAE) published in the NRC on Wednesday. In an advertisement, the GAE director asks politicians in The Hague to give Eelde long-term support in order to safeguard the future of the financially troubled airport. Dion Graus of Limburg, a member of the PVV, makes a similar plea for "his" Maastricht-Aachen airport. Harbers does not want to make promises, but says he recognizes the importance of regional airports.

My comment: *After a day of parliamentary debate, it seems that the horizon is clearing for KLM.*

Despite the environmental problems caused by air transport, the lower house (the deputies) does not want to push for a reduction of Schiphol airport.

The right-wing parties want the government to help regional airports that are in financial difficulties.

CDA and D66 also seem willing to reconsider their strict conditions for opening Lelystad airport.

Note: The coalition formed nine months after the March 2021 elections is composed of four Dutch political parties
. the People's Party for Freedom and Democracy (VVD, centre-right), the party of Prime Minister Rutte,
. the Reformers' Party (D66, centre-left), .
the Christian Democratic Appeal (CDA, centre-right),
. the Christian Union (CU, conservative).

> IAG to more than halve its net loss by 2021

(source AFP) February 25 - **The airline group IAG**, parent company of British Airways and Iberia, **announced** Friday **to have divided by more than two its net loss in 2021, to 2.9 billion euros**, carried by the progressive recovery of the traffic during the year. The group had suffered a year earlier a huge loss of 6.9 billion euros due to the Covid-19 pandemic, which paralyzed air traffic worldwide. IAG says it has turned in 2021 at 36% of its 2019 passenger capacity, a figure that rises to 58% for the fourth quarter alone.
(...)

IAG, which **last year posted a turnover up 8.3% to 8.5 billion**, hopes however to return to an operating profit from the second quarter. The group expects to return to 65% of its 2019 passenger capacity in the first quarter, about 85% for the full year. But the company is keeping an eye on the evolution of the pandemic and the Ukrainian crisis, which could weigh on its prospects.
(...)
Spanish airlines Iberia and Vueling posted the highest levels of passenger capacity in the last quarter of 2021, having recovered 75.3% and 79.4% of their 2019 levels, respectively. **IAG is "starting to emerge from this exceptional storm,"** reckons Richard Hunter at Interactive Investors, with revenues up on passenger business but also on cargo, "which has been a useful contributor deep into the pandemic." But while "there is no doubt that IAG has made remarkable progress in ensuring its survival (...) it seems unlikely that a full return to normality will occur before 2023", he said.

My comment: *The comparison of IAG's 2021 results with those of the Air France-KLM group is clearly in favor of the French-Dutch group:*

IAG announces an operating loss of -2.9 billion euros, twice as large as that of Air France-KLM (-1.6 billion euros).

Two other figures confirm the relatively good performance of the Franco-Dutch group in 2021:
. Air France-KLM has operated 60% of its 2019 passenger capacity, while IAG has operated only 36% of its 2019 passenger capacity
. Air France-KLM achieved revenues of €14.3 billion, compared with €8.5 billion for IAG.

These results illustrate British Airways' strong dependence on the North transatlantic market, which is not very dynamic in 2021.

Conversely, Air France-KLM has benefited from its balanced presence in multiple markets, such as the Caribbean, the Indian Ocean and Africa.

> Norwegian in the green after having avoided in extremis the bankruptcy

(source Air Journal) February 26 - **Norwegian Air Shuttle has published a net profit for 2021**, at nearly 1.9 billion kroner (190 million euros), **thanks in particular to the injection of new money by its shareholders**.
This return to profitability is also explained by the money paid by the Hungarian low-cost airline Wizz Air to take over the long-haul slots that Norwegian had at London Gatwick airport. However, **the operating result, which excludes these exceptional financial items, remains in the red for the**

year, but much less than in 2020.
For the year 2021, revenues fell by 44% to 5.1 billion kroner (510 million euros).
(...)
After posting a loss of 23.1 billion kroner in 2020 (2.3 billion euros) and avoiding bankruptcy at the last minute, Norwegian has been gaining strength as the months go by: at the end of 2021, 51 aircraft were in operation with a load factor of 77% compared to 52.4% a year earlier. By next summer, it expects to operate 70 aircraft to satisfy an increase in demand due to the lifting of health measures.
(...)

My comment: *Norwegian has avoided bankruptcy by selling off its loss-making long-haul business. Despite this, its 2021 operating result remains negative, at -280 million euros.*

> SAS Scandinavian: mixed results and a new plan

(source Air Journal) Feb. 22 - **SAS Scandinavian Airlines** plans to serve 120 destinations with 230 routes this summer, and posted a mixed quarterly result with revenues and net loss up. It **presented a new transformation plan, SAS Forward,** involving aggressive cost cutting and renewal of the fleet, network and offering.
(...)
SAS Scandinavian had brought forward by one week the presentation of its first quarter financial results (November 2021-January 2022), while a rumor about a possible bankruptcy was still circulating. The company's revenues have increased by 143% compared to the same period last year, and traffic has risen by 201.5% to 3.01 million passengers (with a load factor up 25.7 points to 55%, on a 145.4% increase in capacity). But the net loss widened to -2.442 MSEK (230 million euros), compared to -2.03 MSEK between November 2020 and January 2021.
For many years, SAS "has been burdened by an uncompetitive cost structure, which prevents the company from reaching its full potential. In addition, the last two years have been the most difficult in the history of the aviation industry and the future remains unpredictable. Travel patterns and market conditions are changing and will further impact the company," said CEO Anko van der Werff in a statement. SAS therefore needs "more than ever a fresh start" through the SAS Forward transformation plan to ensure long-term competitiveness.
(...)
As a result, **SAS will "proactively" adopt a complete transformation of its business, including its network, fleet, labor agreements and other cost structures**. This will include in particular an "aggressive" cost reduction of up to 705 million euros per year, the resizing of the fleet with a focus on long-haul, and a recapitalization. This is a "comprehensive business and financial transformation plan designed to put SAS on a solid financial footing". SAS Forward will not be detailed until next April.

My comment: *SAS Scandinavian Airlines is still in great difficulty.*

The Scandinavian company had however cut 5,000 jobs in the spring of 2020, then benefited from a recapitalization plan agreed with its main shareholders (including Sweden and Denmark)

The implementation of a new transformation plan sounds like an admission of failure.

> Green aircraft: Airbus to test a hydrogen engine on an A380

(source Le journal toulousain) February 23 - **Airbus** (...) **wants** (...) to **decarbonize the aviation sector**.
(...)
It has just found an engine manufacturer for this. Airbus has announced a partnership with CFM International to help it meet this challenge. It is a joint venture between France's Safran Aircraft Engines and the U.S. GE.
Together, they will work on "the flight feasibility of a hydrogen propulsion system by the middle of the decade. The goal of the program is to test a hydrogen-fueled direct combustion engine on the ground and in flight, with a view to a zero-emission aircraft entering service by 2035.
"
For this, Airbus will use the first A380 built, which was used to certify the aircraft. Although the aircraft did not live up to all its promises, leading to its discontinuation, flying the largest commercial aircraft is a strong symbol for the European aircraft manufacturer and its partner.
The aircraft will be equipped with liquid hydrogen tanks. Also, a specific engine will be mounted at the rear of the fuselage to allow monitoring of "engine emissions, including contrails, separately from those of the engines providing propulsion for the aircraft," according to Airbus.
"By leveraging the expertise of U.S. and European engine manufacturers to advance hydrogen combustion technology, this international partnership reflects our industry's commitment to making zero-emission aviation a reality," says Sabine Klauke, Airbus' chief technical officer, in a statement from the European group. "**Hydrogen combustion is one of the core technologies we are developing and maturing as part of the CFM RISE program**," said Gaël Méheust, president and CEO of CFM, in the same release. "We have the right team in place to perform the demonstration of a hydrogen propulsion system."

***My comment: The** declarations of intent are over.*

On Feb. 22, in a statement, Airbus announced that it had signed a partnership with CFM International "to demonstrate the flight feasibility of a hydrogen propulsion system by mid-decade."

If a hydrogen aircraft does see the light of day, it will likely be the result of cooperation between Europe and the United States.

End of the press review

> Advice for employees and former employees who are shareholders

You will find on my navigaction site the modalities of access to the managers' sites.

To avoid forgetting to change your contact information each time you change your postal address, **I advise you to enter a personal e-mail address**. It will be used for all correspondence with the management organizations.

Keep all the documents related to your Air France-KLM shares in one place: all the letters you receive from the different managers, Natixis, Société Générale, your personal financial institution if you bought your shares through it.

> My comments on the Air France-KLM share price trend

Air France-KLM shares closed at **3.951 euros** on Monday 28 February. **It is down -1.74%.**

Before the coronavirus epidemic, Air France-KLM shares were at 9.93 euros.

Evolution of the Air France-KLM share price over five years. The sharp drop corresponds to the beginning of the Covid-19 epidemic.

The analysts' average (consensus) for AF-KLM shares is 3.46 euros. The highest price target is 5.50 euros, the lowest 1.30 euros.
You can find the details of the analyst consensus on my blog. I do not take into account the opinions of analysts prior to the beginning of the health crisis.

Brent crude oil (North Sea) **rose sharply this week from $6 to $101**.

The crisis in Ukraine is behind the rise in oil prices, which is also affecting copper and gold.

Week after week, Brent is approaching the 2014 level of $110.

At the end of October 2020, it was at a low of $37.

Evolution of oil prices over ten years. The sharp drop corresponds to the beginning of the Covid-19 epidemic.

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

You can react to this press review or send me any information or thoughts that will help me better carry out my duties as a director of the Air France-KLM group.

You can ask me, by return, any question relating to the Air France-KLM group or to employee share ownership...

See you soon.

To find the last press reviews of Monday, it is here

If you like this press review, please pass it on.

New readers will be able to receive it by giving me the email address of their choice.

| François Robardet

Director of Air France-KLM representing the employees and former employees shareholders of PNC and PS.
You can find me on my twitter account @FrRobardet

When I was elected, I received the support of the CFDT and the UNPNCChis

press review deals with subjects related to the Air France-KLM shareholding.

To contact me: message for François Robardet.

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