

AF-KLM raises 800 million euros on the bond market



I Letter from the Director of Air France-KLM

François Robardet Representative of employees and former employees PS and PNC shareholders

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Election of the members of the supervisory boards of the Air France group employee savings plan

If you hold savings in one of the following Air France Group employee savings funds: Aéroactions, Majoraction, Horizon Epargne Actions, Horizon Epargne Mixte, Horizon Epargne Taux, **you are invited to elect those who will oversee the management of your savings.**

Voters, active or former employees, are currently receiving a letter by e-mail or by post specifying the Internet voting procedures. Please keep it in a safe place.

In each of these funds, there are several lists of candidates.

I submit again to the concerned voters the lists "Union-Experience with François Robardet" and invite to vote for them.

Voting will be open from Wednesday, June 30 to Monday, July 19.

Editorial

Dear readers,

I am publishing at the end of this letter the ninth infographic on the climate impact of aviation. It talks about flying in formation to reduce kerosene consumption.



These infographics were produced by experts with whom I have collaborated. They have each been seen by more than 100,000 people on social networks

*See you soon on our lines.
François*

Monday's Press Review

> AIR FRANCE-KLM has raised 800 million euros on the bond market

(source AOF) June 25 - **Air France-KLM has placed a senior bond issue** for a total of €800 million in two tranches. The first tranche is for **€300 million, has a maturity of 3 years and a coupon of 3% per annum. The second tranche of bonds is for 500 million euros, has a maturity of 5 years and a coupon of 3.875% per annum.**

The net proceeds of this issue will be used to finance the repayment of the company's market debt and gradually a portion of the state aid granted in May 2020.

This transaction is part of the ongoing plan to strengthen the balance sheet, prepare for the recovery and reposition the group on a sustainable financial path.

***My comment:** The issue was a great success: while the Air France-KLM group was aiming for 600 million euros, it received 2.2 billion euros in requests.*

This success demonstrates the confidence of investors in the Franco-Dutch group's recovery plan.

> Transavia France: 49th aircraft and offer equal to 2019

(Air Journal source) June 22 - Low-cost airline **Transavia France has received its 49th Boeing 737-800**, which will be deployed this summer on a network increased to 150 routes, including 37 new ones - with a seat capacity similar to that of summer 2019, before the Covid-19 pandemic.

The 737-800 registered F-HTVZ (MSN6088 previously destined for Norwegian) delivered on June 21, 2021 is the sixth and last leased by the Air France subsidiary specializing in cheap flights from leasing company Jackson Square Aviation, the first having arrived last January.

(...)

This 737-800, configured like the others to accommodate 189 passengers, brings the number of aircraft operated by Transavia France to 49, compared to 37 in summer 2019 - the last "normal" summer season before the arrival of the health crisis.

Its general manager Nathalie Stubler recalled yesterday that the low-cost airline will offer in June and July a seat offer equivalent to that of two years ago, as planned since the end of April: "This is already a strong catch-up," she explained on the set of BFM Business.

"We observe for some weeks 30 to 40% more sales [compared] to the same period in 2019," there is "a catch-up effect because for a number of months we have not sold" but it also shows "a strong appetite of customers to want to travel again," stressed the leader who refers to a gradual rise in occupancy rates "of about 70% in June, while we were at 50% in April during the travel restrictions.

(...)

My comment: *The Transavia France fleet is growing according to forecasts.*

It should be noted that, as the Air France group is committed to reducing its CO2 emissions on its domestic network by 2024, the new Transavia France aircraft will mainly be used to connect France to the Mediterranean basin.

Airbus to test its hydrogen tanks on board an A380

(source Les Echos) June 24 - The "ZeroE" hydrogen aircraft project has taken another step forward at **Airbus**. Less than a year after unveiling three hydrogen-powered aircraft concepts, the first of which could see the light of day as early as 2035, the aircraft manufacturer **has announced the creation of two "zero-emission development centers", known** internally as ZEDCs.

Located in Nantes and Bremen, these two centers of excellence will be responsible for manufacturing the most critical component of the future hydrogen aircraft: the cryogenic tanks.

Along with the fuel system, hydrogen storage on board an aircraft is the main technological challenge facing the aircraft manufacturer. Because of its low density, **hydrogen in its liquid form, the most compact, requires tanks four times larger than kerosene, for the same range. And to remain in its liquid state, it must also be kept at a temperature of -253°C.** This means designing cryogenic tanks that are well insulated, robust, large and yet light, so as not to weigh down the aircraft.

Despite the difficulties, Airbus engineers seem to have succeeded in reconciling all these imperatives, since the aircraft manufacturer plans to start manufacturing these hydrogen tanks in Nantes and Bremen in 2023. According to an internal communication, the Nantes ZEDC should deliver a dozen tanks per year **between 2023 and 2025**, when **Airbus plans to make its first experimental flight on board an A380.**

The A380 dedicated to flight tests would carry a hydrogen tank

and an electric motor in its cabin, to test hybrid propulsion solutions. In addition to using liquid hydrogen as a fuel to replace kerosene, Airbus is also interested in fuel cells to power equipment or electric motors.

The goal is to manufacture hydrogen tanks that are not only safe but also competitively priced, by combining the know-how of the Bremen site in the field of cryogenic propulsion launchers and that of Nantes in the field of central wingboxes and tanks.

However, Airbus seems to be **keeping several irons in the fire**. The group has also invested several million dollars in a Californian start-up created by its former innovation director, Paul Eremenko, to develop a project for removable hydrogen refills for aircraft.

> **Hydrogen-powered aircraft: Airbus, Air Liquide and ADP Group join forces to imagine the airports of tomorrow**

(source industrie-techno) June 22 - On Monday, June 21, **Air Liquide, Airbus and Aéroports de Paris announced the launch of engineering studies, via a press release, with a view to adapting airport infrastructures to the arrival of hydrogen-powered aircraft by 2035.**

(...)

A general study will first be carried out at some 30 airports around the world to "determine the development and supply configurations of liquid hydrogen", the press release states. Based on this survey, "detailed scenarios and plans to define the required infrastructure, sizing and implementation" will then be developed for the two main Paris airports, Paris-Charles de Gaulle and Paris-Orly.

This type of study is essential, given the technological challenges of liquid hydrogen. As this fuel boils as soon as the temperature exceeds -253°C , cryogenic technologies are required to store or transport the hydrogen in liquid form. And **any leakage, facilitated by the small size of the molecule, must be prevented absolutely: it could indeed cause an explosion.**

In terms of infrastructure, transporting cryogenic hydrogen from airport facilities to aircraft tanks is one of the biggest challenges. "Transporting hydrogen at -253°C in pipes is quite a technological challenge," said Thierry Poinot, of the European Center for Research and Advanced Training in Scientific Computing (Cerfacs), recently interviewed in the context of our investigation into hydrogen-powered aircraft, which appeared in our feature on decarbonizing aviation.

The rest of the hydrogen ecosystem could fit into a more traditional

scheme. **"We will probably have a sort of hub near the airport, where we will produce the liquid hydrogen needed for an entire region to supply airports,** hydrogen gas stations and train stations," said Pierre Crespi, Director of Innovation at Air Liquide Advanced Technologies, in an interview during the same survey. "Some large airports may be equipped with pipelines by 2050. But at first, there won't be enough planes to install a production site and pipelines within the airport," Crespi continued.

***My comment:** The two previous articles show the commitment of French companies in the fight against global warming.*

The challenge to use liquid hydrogen in a commercial aircraft is a big one. It has already been taken up by the space sector, since liquid hydrogen is used as fuel for the Ariane rocket.

Boeing 737 Max: 500 million for the families of the American victims

(source Capital) June 23 - A \$500 million U.S. fund to compensate relatives of 346 people killed in two **Boeing 737 Max** crashes has been opened, its administrators told Reuters on Tuesday (June 22). The U.S. aircraft manufacturer **agreed in January to pay \$500 million to compensate the families of U.S. passengers who died in the crashes of Lion Air 610 and Ethiopian Airlines 302 in 2018 and 2019.**

Each eligible family will receive nearly \$1.45 million. The money will be paid out as applications are returned, trustees Ken Feinberg and Camille Biros

said in a joint statement. Families have until Oct. 15 to return the completed paperwork. Neither Boeing nor the Justice Department would comment on the information at this time.

The fund is part of a \$2.5 billion settlement reached **last January** between the Justice Department and Boeing. **Prosecutors had accused the U.S. aircraft manufacturer of fraud regarding the certification of the 737 Max,** recalls Reuters. "Boeing chose the path of profit over candor by withholding important information from the FAA regarding the operation of its 737 Max aircraft and by attempting to conceal a deception," the Justice Department said at the time. **The settlement** nevertheless allowed Boeing to avoid criminal prosecution, but **had no impact on the civil lawsuits filed by the victims' relatives.**

(...)

While Boeing has settled the lawsuit against Lion Air, it is still being

sued in several cases in federal court in Chicago by the families of the Ethiopian Airlines crash victims.
(...)

> Companies face the challenge of getting thousands of stored aircraft back in the air

(source: Les Echos) June 25 - With the resumption of air traffic this summer, **a new kind of challenge has arisen for airlines and aircraft manufacturers: the return to service of thousands of aircraft**, some of which have been in storage since the beginning of the crisis, and which must be brought out of hibernation quickly and, above all, safely. This is an unprecedented situation, mobilizing not only airline maintenance teams, but also aircraft manufacturers. While storage and retrieval procedures are well known and do not pose a problem in themselves, the scale of the task is unprecedented for airline maintenance departments.

At the worst of the crisis, last spring, more than half of the world's fleet, or **more than 16,000 aircraft**, including 8,000 Airbus, **were grounded**, some permanently, such as the Air France A380s. In Europe alone, up to 7,168 aircraft were grounded between April and May 2020, according to Eurocontrol figures, sometimes for several months.

(...)

The resumption of bookings in May has already revived many of them. About 75 percent of Airbus' global fleet has already returned to service," says Claire Kauffmann, head of scheduled maintenance services at Airbus, which has sent teams to assist airlines. "Overall, **it's gone pretty well**," she says. **"We've had relatively few incidents after the return to service," confirms her colleague Nicolas Bardou, who is in charge of safety communications at Airbus.**

However, as of June 1, Eurocontrol counted 3,384 airliners still at rest, two-thirds of which must be put back to work to meet summer demand. This means nearly 2,000 aircraft to be "woken up", sometimes with a few surprises in store. **Usually, aircraft are stored in well-controlled, stable and dry environments**, such as deserts," explains Claire Kauffmann. **But here, the planes ended up on the ground in very different and sometimes unsuitable places. "This led to unusual discoveries in some aircraft, such as nests of rodents, birds or insects that** could damage the electrical network, block moving parts or obstruct certain equipment, such as the Pitot probes used to measure the incidence rate. "There have been quite a few cases of

defective Pitot probes," admits Claire Kauffmann.

So many incidents and unforeseen events that require special vigilance on the part of pilots before a return flight. "We have advised airlines to provide additional training to strengthen crew resilience, with briefings and adapted simulator sessions," says Xavier Pépin, in charge of pilot training at Airbus.

(...)

Many airlines, such as Air France, have made sure that all pilots fly in rotation, at least once a month. And the regulations require at least three takeoffs and landings over a 90-day period. But some companies have been able to keep to the regulatory minimum of one simulator session per month.

> **Summer recovery: some airlines take off again in a mess**

(source Air Journal) June 26 - **During this period of resumption of summer traffic, some airlines are restarting in the greatest improvisation, changing their flight schedule without stopping, sometimes from one day to the next.**

Flights cancelled the day before for the day after due to lack of landing authorization, others postponed due to unreachable crews or planes ill-prepared to take off again after weeks on the ground... **In travel agencies, switchboards are saturated with calls from customers unhappy with last-minute changes.**

Among the bad pupils, Royal Air Maroc which has reorganized its flight program for the summer after the cancellation of reservations related to preferential fares. At **Alitalia**, flights are so disrupted that they not only change schedules but also airports (e.g. between Rome-Fiumicino and Rome-Ciampino), with full reissue of tickets. The low-cost airlines **Ryanair** and **Vueling** are not to be outdone...

Among the good students, Air France and its low-cost subsidiary Transavia offer very stable programs, according to tour operators.

As the major vacation departures approach, travel agencies, instead of selling tickets, spend their time managing this mass of changes - the TSC (Time Schedule Change) in the airline jargon.

(...)

This phenomenon also affects carriers in the United States. Due to a lack of mechanics to get its planes back in the air on time, American Airlines had to cancel 400 flights last weekend, and plans to reschedule about 950 flights during the first half of July.

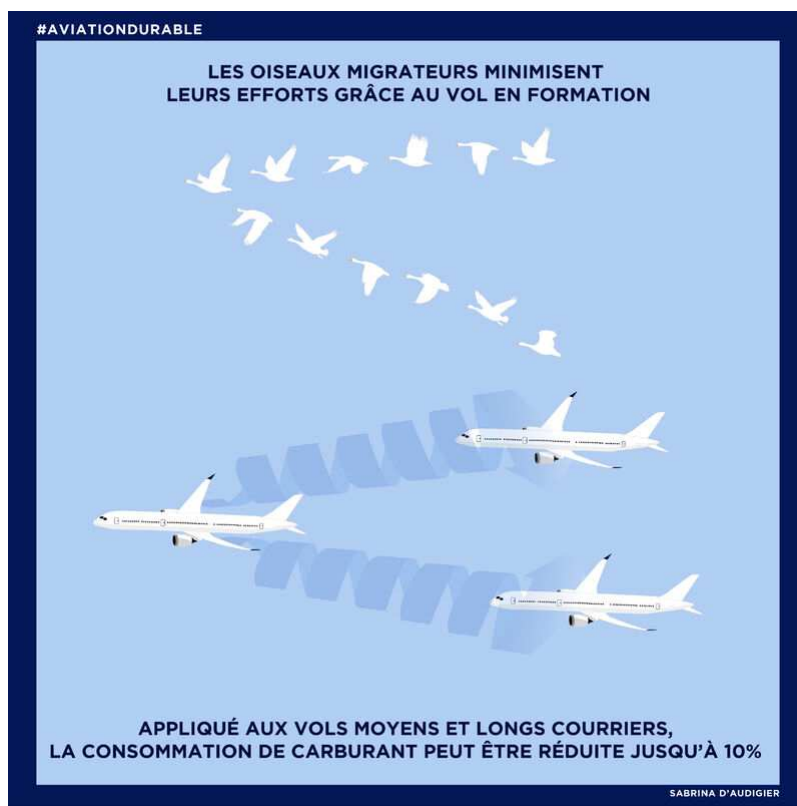
My comment: For airlines, the recovery of activity is a challenge in all areas. The Air France-KLM group is one of the good performers.

Bonus of the week

> Migratory birds minimize their efforts by flying in formation

((source aviationdurable) June 22 - Many ways to reduce aircraft fuel consumption are being developed. For example, **Airbus is studying the possibility of flying aircraft in "squadrons" to take advantage of the vortex generated by the aircraft, like migratory birds.**

In 2003, NASA obtained a 29% gain in fuel consumption by applying it to military flights, and **the expected fuel savings will be 10% for follower aircraft on long-haul flights**, with a spacing of 1.5 nq (3 km). Partnerships already exist with airlines such as French Bee and SAS Scandinavian Airlines, and the overall savings will be 3 to 4 million tons of CO2 not emitted.



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 **4.143 euros** on Monday 28 June. It is down this week by -7.89%. The decline has been steady this week. At this time, I have no rational explanation.

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

The average (consensus) analyst price for AF-KLM shares is 3.30 euros. The highest price target is 5 euros, the lowest 1 euro. You can find the details of the analysts' 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) is **stable at \$75 per barrel**. Since a low point at the end of October 2020 (\$37) it has been rising steadily. It exceeds its pre-pandemic level. Since the end of 2014, it has only exceeded this level for a few months, in 2018.

As air traffic recovers, this high price is bad news for airlines.

This information is not intended to be 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 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.

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