

Ryanair reduces its capacity by a further 20% in October



Letter from the Director Air France-KLM

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

N°774, September 21, 2020

If you do not see this page correctly, or if you wish to read the English or Dutch versions If you do not see this page correctly, or if you want to read the English or Dutch versions, Als u deze pagina niet goed ziet, of als u de Engelse of Nederlandse versie wilt lezen, follow this link , it is here, it is here.

Monday's Press Review

> Ryanair reduces its capacity by a further 20% in October

(source Air & Cosmos) 18 September - The take-off of European traffic is still awaited. Ryanair, after a first announcement of a 20% reduction in capacity made at the end of August, has just specified that it would operate an additional 20% reduction for October. "Ryanair now expects its October capacity to be reduced from 50% to about 40% of its October 2019 levels, but plans to maintain a load factor of more than 70% on this reduced flight schedule," the company said in a statement.

"These capacity reductions were necessary because of the impact on bookings of the constant changes in EU government travel restrictions and policies (...)," Ryanair explains.

The low-cost airline welcomes the European Commission's plan to remove intra-EU travel restrictions and "calls for this coordinated approach to be implemented immediately by all EU states, in particular Ireland, so that EU citizens can make essential bookings for business and family travel without having to worry about flight cancellations and/or faulty quarantines".

My comment: For once, the information on the front page of this letter does not directly concern the Air France-KLM group.

Ryanair plans to welcome in its planes less than 30% of last year's

traffic at this time of year (70% load factor * 40% capacity = 28% of passengers compared to 2019!). This despite the fact that the Irish low-cost company only operates short-haul flights, a sector less affected by the health crisis than the long-haul sector.

If this hypothesis proves to be correct, it would herald a fourth quarter that would be more difficult than expected for European airlines.

> The Air France-KLM boss's warnings

(source L'Opinion) 21 September - BENJAMIN SMITH, 49, has been Chief Executive Officer of the Air France-KLM group since August 2018 (...).

How is the new school year, still marked by the Covid-19 pandemic, going for Air France-KLM?

After an unimaginable start to the year, during which our 558 aircraft were all grounded at one point, the summer period has sent a slight positive signal. During this period, we operated a large part of our global network, but with capacity reduced to 60% for short-medium-haul and 38% for long-haul. Today, the rule is that Air France-KLM only operates profitable flights (and this is often thanks to freight, which is more resilient). But the traffic fell back as soon as the holidays ended, and we are now observing a plateau. The business travel segment is recovering very, very, slowly, a trend that can be observed everywhere else and for all the big companies (...). Travellers are afraid of getting stuck abroad! (...). While waiting for a vaccine or treatment for serious forms, coordinated sanitary measures are needed. We are, for example, very much in favour of testing all travellers at their point of departure. We are working with the International Air Transport Association (IATA) and Airlines for Europe (A4E), which I chair, to defend the generalisation of this practice, at least in large countries. One of your two major shareholders, the Netherlands, warns through its Finance Minister that the group's survival is "not a foregone conclusion". Can it disappear?

We knew before the pandemic that we had to transform the group to make it stronger. The plan we announced in November 2019 is still relevant, but the crisis forces us to accelerate it. We need to do much more to reduce our costs. We are making all possible savings within the group and in the companies, which is essential if we are to make it through the coming months (...).

How far have you got in cutting costs?

To begin with, **we are reorganising Air France's domestic network**, **the** company's most heavily loss-making market, with 200 million euros in losses last year. We're keeping connections between Roissy and the medium-sized French cities, as well as the Lyon hub; for the rest of the network, some companies have expressed their interest in taking over connections, with access to Air France's commercial services (...).

Transavia's business model is as efficient in terms of costs as that of EasyJet. We now have the means to face the competition within France.

This change in our model is also part of the compensation, which we have accepted, for the exceptional aid received from the French State. But this support is not a blank cheque. **Our first commitment is to do everything possible to improve the group's performance and align it with that of our European competitors**. In the context that we are experiencing a massive drop in demand, we must do everything possible to significantly reduce our costs. On the environmental front, we are committed to reducing CO2 emissions from domestic flights by 50% by 2024. We have abolished services where there is a rail alternative less than 2 hours 30 minutes away, i.e. those between Orly and Bordeaux, Lyon and Nantes. It's counter-intuitive for an air carrier, but these air links were created at a time when the sector was highly regulated, without the TGV or low-cost companies.

Air France has announced 7,500 job cuts, or 17% of its workforce by the end of 2022. Is this enough in the face of falling revenues?

The age pyramid within Air France helps us because it will lead to many natural departures. In addition, we have reached an agreement with the professional organisations on the termination of the collective bargaining agreement to allow the voluntary departure of nearly 400 pilots and more than 1,100 cabin crew (...). We also encourage mobility within the group: for example in Bordeaux, where we offer ground staff retraining in our call centres. I am aware that the case of medium-sized towns like Morlaix is more complicated. For example, we have a maintenance activity there for Bombardier CRJ models, while we are definitively taking this aircraft out of our fleet. **We're going to do our utmost to avoid forced departures** (...).

Are you still resorting massively to short-time working? It is important to understand that our activity today is 40% of what it was last year. The vast majority of our employees are now affected by the partial activity scheme which runs in the air industry until the end of October. Beyond that date, we are discussing all possibilities with the trade unions, favouring long-term partial activity schemes [like the one signed at Safran]. **Based on the last few weeks, it is clear that the traffic rebound will be slower than expected**. When we negotiated the State aid in the spring, we announced that we would not return to the 2019 level before 2024. That's why we're **going to have to continue to adapt**.

The group had 14 billion in cash and loan lines at 30 June. How long

can it hold out financially if traffic remains at its current level? KLM obtained $\in 3.4$ billion in aid from the Dutch government in the spring (including a $\in 2.4$ billion guarantee). For Air France, this amounts to $\in 7$ billion, including $\in 4$ billion in guaranteed loans. This support enables us to hold out for less than twelve months. We are currently discussing with our shareholders how to strengthen our balance sheet beyond this period. One, three or five billion euros? It is too early to put a figure on the amount of a possible recapitalisation. This question will be decided before the next General Meeting.

In this context, to what extent does the project of an eco-tax on air transport, as demanded by the citizens' convention (between 30 euros, for a flight of less than 2000 km in eco class, and 400 euros, for a longer distance in business), threaten you?

It would be irresponsible and catastrophic for our group. For example, before the crisis, Air France had an operating profit of only 280 million euros. How would it be able to support a tax that would cost it between 1.2 and 1.3 billion euros a year? This eco-tax would instantly cause tens of thousands of job losses. Moreover, it would be illogical and counterproductive from an environmental point of view. Our best way to reduce CO2 emissions is to renew our fleet. A new plane is immediately 25% less greenhouse gas. Such a tax would prevent us from buying 20 aircraft per year, i.e. 10% of the Air France fleet. For the next five years, the acquisition of new aircraft is almost the only investment we plan to maintain in full, despite the collapse of our turnover.

Are we going to see many bankruptcies among the airlines? Will there be takeovers?

Yes, bankruptcies have already begun and they will accelerate in the coming months. When you have the vast majority of your aircraft grounded, the question of consolidations is absolutely not a priority. *Has the crisis changed passenger behaviour?*

Their first concern has always been and will remain safety. The health dimension is now being added to this safety requirement. I am firmly committed to it: the Air France-KLM group will not compromise on these two subjects. The air in the cabins of our aircraft is fully filtered every three minutes, the wearing of masks is compulsory, and I must say that this constraint is perfectly accepted by our customers despite the minor discomfort it represents. Another change is that our customers are booking their flights later and later. For example, they used to book on average three months in advance for a flight between Paris and Reunion Island. Today, this is reduced to one or two weeks. At the same time, they want to be able to get a refund if, at the last minute, they have to cancel their trip. We are much more flexible on this point -

even though it is sometimes difficult to know whether a flight is full enough to be maintained for a few days before departure. And then of course, there is increasing pressure in terms of environmental requirements. We need to explain more about our efforts to limit the real impact of our sector on the environment, to our customers but also to our employees so that they can be proud of our group. Air transport is all too often a scapegoat, if we compare its footprint with that of other activities. That said, until 2019 demand has doubled every ten years. This demand still exists. Everyone wants to travel! The idea that you can reach Australia from Europe in 24 hours remains extraordinary. On the other hand, is a Paris Dublin at 12 euros reasonable? It's a very interesting debate that we need to have collectively. Austria, for example, has introduced a minimum ticket price, let's talk about that.

What will air transport look like in five years' time?

As I said, I remain optimistic about its future. We will have to adapt to the evolution of the sector. But let's not forget that we have never stopped doing so. Business travel will resume, but probably in a different format. Videoconferencing, which has developed greatly during the lockdown, will certainly continue. The rhythm of business trips may increase from once a month to twice a semester, but we will still need to meet a new client, to motivate a team abroad by going to meet them physically. Tourism will be able to resume as soon as the borders reopen. Families are scattered all over the world, students have woven networks of friends all over the world. All indicators now show that, as soon as health conditions allow, regular travellers will return to the aeroplane.

Travelling is also one of the best ways to avoid withdrawal.

My comment: This long (and rare) interview with the CEO of Air France-KLM deserves to be read carefully.

Among the many points discussed, I would like to highlight two: . the confirmation that a recapitalisation of the Air France-KLM group is under consideration,

. the optimism shown by the CEO of Air France-KLM.

In order for this optimism to be shared by all the group's employees, it seems essential that measures to avoid employee redundancies be quickly announced.

> Air France-KLM is already making "substantial

adjustments", Djebbari tells the Dutch

(source Le Figaro) 14 September - **Air France-KLM is "already making substantial adjustments**" in the face of the crisis, **French Transport Minister Jean-Baptiste Djebbari said** on Monday. The survival of the Air France-KLM airline alliance, which has been undermined by the Covid-19 pandemic, cannot be taken for granted if the current economic crisis continues, Dutch Finance Minister Wopke Hoekstra said the day before. "It's not automatic," he said in an interview on Dutch public television NPO, recalling the importance of reducing costs.

"The group as a whole is already adjusting substantially because the criticism, (the underlying remark of Dutch Finance Minister Wopke Hoekstra, editor's note), is that in a very deteriorated environment the group may not be doing enough to be competitive," Jean-Baptiste Djebbari on Europe 1 judged, **recalling the job-cutting plans announced by the two companies**. The French minister considered that the job cuts are an effort "for the moment proportionate to the scenario" of resumption of traffic envisaged while adding that for all that "nobody knows how to say what the traffic will look like at the beginning of 2021" (...).

My comment: The expression "substantial adjustments" seems inappropriate to me. For both Air France and KLM, redundancies are envisaged, over and above the voluntary departure plans.

Recourse to the Long-Term Partial Activity Mechanism (APLD) currently under negotiation should make it possible to avoid any redundancies within the Air France group. It would be advisable that a similar mechanism be envisaged for KLM.

> 'A zombie company? No, but it won't work itself out ("Une société zombie ? Non, mais ça ne marchera pas pas alles seul").

(source Het Financieele Dagblad translated with Deepl) 19 September -A zombie society? Pieter Elbers, CEO of KLM, gets out of his depth (...). Shouldn't we consider the Dutch airline as a zombie company that in fact no longer has the right to exist and is only kept afloat through subsidies and loans?

Laughing: "I had intended not to get angry because of your questions. **A zombie company** is a company without a base, without a

remuneration model. This does not apply to KLM". But it doesn't work on its own, Elbers warns (...). It's not automatic. We will have to work very hard for that. There is a proven business model that has a future" (...).

In the summer, Elbers announced that 5,000 of the 30,000 jobs would be lost. **On 1 October, KLM's CEO promised Finance Minister** Wopke Hoekstra a **recovery plan.** This in exchange for the \in 3.4 billion in support, a combination of state-guaranteed bank loans and direct government loans, thanks to which KLM must survive this difficult period (...).

On Sunday, Minister Hoekstra did not take KLM's survival for granted. Should you be worried?

I think this reflects the current developments in aviation. Look down in the empty departure hall. It's a dramatic spectacle, of course. It's supposed to be busy, but it's not. **It's worse today than it was a month and a half ago**. We can really see that the current international patchwork of new restrictions is having a negative impact. Customers are less inclined to book. We had planned to grow a bit, but we have to go backwards".

Hoekstra's French colleague, Le Maire, immediately expressed his unconditional support for the sister airline Air France. Wouldn't you rather have a minister like that?

You see how ministers act from different cultures, different ways of living in society. KLM gets a loan, pays interest on it, but the Dutch company is counting on the fact that you can expect something from KLM staff. And rightly so. The Dutch minister's statement is along these lines. In France, perhaps a more appropriate approach should be taken: everything will be fine. In France, perhaps more is being done behind the scenes. **The most important thing is that both countries support Air France-KLM in word and deed**" (...).

Is Hoekstra helping you in these negotiations by threatening that KLM could also go bankrupt?

The Minister has set conditions and said that they must be taken very seriously. He expects KLM employees to contribute through working conditions. I see his statement primarily as a confirmation of the measures to be taken. In doing so, **he makes it clear to everyone that we must keep our promises**. As a company, with the trade unions and the employees. Loans are not a "gift".

My comment: Of all the conditions set by the Dutch government for granting loans to KLM, those relating to wage cuts pose the most

difficulties.

At the beginning of September, a KLM trade union stated: "We will have the social plan for employment by 1 October. An agreement on changing working conditions will take longer". We will know in ten days or so whether the negotiators have finally found a compromise.

> Three difficult years for the MRO sector before a return to sustained growth

(source Le Journal de l'Aviation) 10 September - As the covid-19 epidemic resumes in the wake of the deconfinement of populations, the world fleet remains mostly grounded. With airlines in "survival mode", **the maintenance sector is suffering the full brunt of the situation**: not only are aircraft that are not flying less in need of maintenance, but maintenance and modification expenditure is being delayed as long as possible (...). According to AeroDynamic Advisory, **the trend to watch will be that of "green time management**" (...).

Kevin Michaels, Managing Director of the consulting firm, asks the question: **if a company needs to change an engine on one of its aircraft**, will it turn to an MRO or will it cannibalise one of its aircraft of the same model that is grounded and has an engine that has some service time left before the next maintenance? In the current situation, where the sole objective is to save the carriers' cash flow, **the failed engine will be stored until the company has the funds to have it repaired and an engine with some of this famous "green time" left will be taken from a grounded aircraft and installed. Taking the example of a Boeing 737, he estimates that this avoids an immediate expense of 4 million dollars.**

The majority of the building sites will therefore be postponed. It is the component maintenance sector that will suffer the most, especially on major equipment such as landing gear. It is expected to record a 64% drop in activity in 2020 and only gradually return to its 2019 level in 2024. The other area that suffers the most is cabin modifications; it should lose 60% of its activity. On the other hand, the crisis has less impact on line and airframe maintenance. But the sector's turnover should be reduced by 50% according to IBA (...).

My comment: The aeronautical maintenance sector is perhaps suffering more from the crisis than the airlines.

There is a glimmer of hope in the medium term: when air traffic resumes in earnest, the backlog will have to be made up, which will boost maintenance activities all the more.

> US airlines call for additional aid

(source AFP) 18 September - The **bosses of all the major American airlines went to the White House on Thursday to plead for a new aid programme for the sector**, strongly shaken by the pandemic, in order to avoid tens of thousands of redundancies on 1 October. US President Donald Trump has repeatedly called for additional measures to help air transport companies. And many members of Congress, both Democrats and Republicans, have also expressed their support. "The only problem is that there is no legal instrument to implement" this aid,

said American's managing director Doug Parker at the White House, just after a meeting with the President's chief of staff, Mark Meadows (...).

Delta Airlines (...) **announced Thursday that it had raised \$9 billion on the bond market, using its loyalty program as collateral.** This could allow it to avoid using the loans proposed by the government as part of a second \$25 billion package proposed in April, which would involve the government becoming a minority shareholder.

My comment: The major US airlines had pledged not to lay off any employees before 1 October 2020.

As the deadline is approaching, activity has not resumed as these companies had hoped. If no new aid is granted, they threaten to lay off tens of thousands of employees.

> Brazil approves joint venture agreement between Delta and LATAM

(source Air Journal) September 19 - **Delta Airlines and LATAM Airlines** Group S.A. **received Thursday the regulatory approval of their Trans-American Joint Venture Agreement ("JVA") from the** Brazilian competition authority, the Administrative Council for Economic Defense (CADE).

The proposed JVA between Delta and LATAM (...) was approved without conditions, following an assessment of free competition considerations and taking into account the unprecedented economic impact of COVID-19 on the airline industry. (...) **The JVA aims to connect the carriers' highly complementary route networks** (...) **between North and South America** (...).

> Lufthansa should once again make massive cuts in

employment

(source Capital) 16 September - **The German airline company Lufthansa could cut a total of 28,000 jobs, against the 22,000 job cuts announced last June**. And it could reduce its fleet of aircraft by 130, against 100 initially planned (...), **Reuters reports on the** basis of two sources close to the dossier (...).

> Alitalia concentrates its offer in Milan Linate

(source Voyages d'Affaires) 16 September - It's a surprise in the Italian business world, especially in Lombardy. **Present in Milan-Malpensa since 1948, Alitalia announces that it will leave this airport from October with the** suspension of its services to Rome-Fiumicino (...). The reaction of the regional government was not long in coming. "(...) It is a bad choice which is irreconcilable with the enormous state aid, also financed by Lombard taxes. This disengagement is emblematic and unacceptable", declared La Stampa Claudia Terzi, Regional Secretary for Infrastructure, Transport and Sustainable Mobility of Lombardy, to the daily La Stampa Claudia Terzi.

It is therefore a turning point in the history of the Italian company (...). However, **Alitalia is not leaving Lombardy. Instead, it prefers to concentrate on Linate airport, a hub very close to Milan city centre which,** until the 1990s, had been the main international hub of the Italian metropolis (...).

These adjustments come at a time when the carrier is due to present its restructuring programme by mid-October.

Speaking to the Chamber of Deputies' transport committee, **Alitalia's** chairman Francesco Caio said the company would be turning its back on its past development model (...).

The CEO-designate, Fabio Lazzerini, has also drawn up the profile of the future company. **"Our positioning is aimed at the high-end market**. If you are not a low-cost company, aiming for low-cost is suicidal. A carrier like Alitalia is a totally different structure from a low-cost carrier. Costs will be the obsession of our management, efficiency being fundamental".

According to the managing director, **long haul will be Alitalia's lifeline.** "In this segment, in the absence of low-cost competition, the prospects are enormous (...).

We need to think about a five-year plan," continued Mr. Lazzerini. **The alliance with an airline partner will be a fundamental strategic point of this plan**, because the world of airlines is made up of alliances. By definition, it is difficult to be alone in a globalised world," he added to the daily La Stampa.

My comment: The reasons for the failure of Alitalia's various attempts at recovery are multiple. The too large number of hubs (two in Milan, one in Rome) is one of them.

By stopping operations at Milan-Malpensa, the Italian airline's managers are taking a courageous decision, even if it means alienating the Milanese elected representatives.

Will this be enough to convince an airline company to establish a partnership with the new Alitalia? In recent years, Delta, Lufthansa and to a lesser extent easyJet have expressed interest.

> 737 MAX: US Congress unzips Boeing

(source Challenges) 17 September - Warning, explosive document. After 18 months of investigation, 600,000 documents studied and some 20 hearings, **the US Congress Transport Committee published on Wednesday 16 September its final report on the double crash of the 737 MAX** (Lion Air and Ethiopian), which killed 346 people in October 2018 and March 2019. To say that Boeing is taking for its rank is an **understatement**: **the 239 pages of the report exhaust the way in which the U.S. aircraft manufacturer has developed the MAX, and the FAA, the U.S. regulator**, **has controlled the work.** "The Max crashes were not the result of a single failure, technical error or mishandled event," the document asserts. They were the terrifying culmination of a series of faulty engineering assumptions by Boeing engineers, a lack of transparency by Boeing management, and grossly inadequate FAA oversight".

In a vitriolic statement, the chairman of the transport committee, Democratic Representative Peter DeFazio, bluntly pulls out the sulphate. **He denounced a "broken safety culture" at Boeing, a "fatally flawed" aircraft and the "way in which both Boeing and the FAA played with public safety in the critical period between the two accidents**". "Our report contains disturbing revelations about how Boeing, under pressure to compete with Airbus and make profits for Wall Street, evaded FAA control, withheld critical information from pilots and ultimately put into service planes that killed 346 innocent people," wrote the Oregon official.

What do the reporters blame Boeing and the FAA for? **The document** stresses five key points. The first is the pressure exerted by the aircraft manufacturer to hasten the development of MAX, in response to the commercial success of Airbus' A320neo. Obsessed by this competitor who is accumulating contracts, Boeing wants to react quickly, too quickly. In the conference room of the MAX teams, a clock counts down the time remaining before the aircraft's planned entry into service. And when, in June 2018, Ed Pierson, the manager of the Renton factory (near Seattle), became concerned about "safety problems" on the aircraft and assured that in a similar case the army would have stopped production of the aircraft, the response was overwhelming. "The army is not an organisation designed to make a profit," replied the manager of the 737 MAX Scott Campbell. Who decides to maintain the planned increase in production rates.

The report's second salient point is that Boeing did not provide all the necessary information to customer airlines and the FAA on the aircraft's MCAS, the anti-stall software, which is one of the MAX's major innovations compared to the classic 737s. To avoid additional costs related to system certification and pilot training, the US aircraft manufacturer withheld key information on this software, whose failures were a major cause of both accidents. In particular, the group kept customers and regulatory authorities in the dark about the fact that one of its test pilots, during a simulator session, took 10 seconds to react to an activation of the MCAS that put the aircraft in a nose-down attitude, describing the situation as "catastrophic".

This "culture of concealment", in the words of the report itself, is the third major grievance of the Congress Transport Committee. "In several critical cases, Boeing has withheld crucial information from the FAA, its customers and the pilots of the 737 MAX," the rapporteurs denounce. In addition to the 10-second reaction time mentioned above, when the FAA requires an effective 4-second response, Boeing has concealed the fact that on most of the 737 MAXs delivered, an essential safety alert did not work: the so-called AOA alert, which indicates that the two incidence probes disagree. "Boeing not only withheld this information from the FAA and pilots, but also continued to deliver MAX aircraft to its customers knowing that the AOA Disagree alert was inoperative on most of these aircraft," the report said.

The fourth grievance is also the most troubling: the "conflicts of interest" inherent in the American certification system. Under this system, certain Boeing employees, known as "authorized representatives" (ARs), are appointed to "represent the interests of the FAA and to act on behalf of the agency in validating the compliance of aircraft systems and designs with FAA requirements," the report explains. Clearly, the FAA delegates to Boeing employees the ability to certify their own aircraft. This system has led to bugs with disastrous consequences, the report says: some of these notorious RA's have sometimes identified safety problems with MAX, particularly with the MCAS software, but these problems "have not been fully investigated or

have been rejected by Boeing employees".

This enormous influence of the US aircraft manufacturer on the FAA is the fifth lesson of the Congressional document. "Many FAA officials have detailed examples where FAA management overturned a decision by its own technical experts at Boeing's request, the report said. These incidents have had a detrimental impact on the morale of the agency's technical experts.

Conclusion of the rapporteurs: "The FAA has not fully exercised its supervisory authority and this failure has been detrimental to aviation safety" (...).

This murderous report comes at a very bad time for Boeing and the FAA. It is published during the week of a major seminar, organised since 14 September at London Gatwick airport, during which American, European, Canadian and Brazilian regulators are studying the training programme proposed by Boeing to the crews of the Boeing 737 MAX. A major step towards the return to commercial service of the aircraft, which has been grounded for 18 months. In a press release published on 16 September, **the American aircraft manufacturer said it had "worked hard to strengthen our safety culture and restore confidence with our customers, regulators and the public".** "The revised MAX design has undergone extensive internal and regulatory review, including more than 375,000 hours of engineering and testing and 1,300 test flights," the group said. Much more will probably be needed to regain the confidence of the authorities, pilots and the general public.

My comment: Two years after the first accident of the B737 Max, the report of the US Congressional Transportation Committee is edifying.

Among other things, it denounces "the way in which Boeing and the FAA both played with public safety in the critical period between the two accidents". It will be up to the courts to validate this finding or not.

> Airbus unveils its roadmap towards the "zero emission" hydrogen aircraft

(source Les Echos) 21 September - Not to be defeated in the face of the discourse of the ecologists-sceptics and other advocates of degrowth who, under cover of the fight against global warming, are ready to put an end to air transport and aeronautics with taxes. This is the meaning of the presentation, this Monday, of the decarbonated aircraft projects under development at Airbus, under the code name "ZEROe" (...).

A long-term ambition already announced during the presentation of the aeronautics recovery plan in June, but which had left many sceptical in view of the time and efforts still to be made to reach the Holy Grail of the "zero emission" CO2 aircraft. In the best case scenario, the first decarbonised aircraft capable of accomplishing the missions of today's A320 - transporting some 200 passengers with a maximum range of around 3,500 km - will not arrive before 2035. And it will not be electric, but hydrogen-powered (...). In

order to be able to align a first totally decarbonised medium-haul singleaisle aircraft, **Airbus engineers have opted for the only "zero emission" fuel available today: hydrogen**. Electric motors would indeed require a greater mass of batteries than that of the aircraft. And hydrogen is an abundant and clean fuel. Its combustion produces almost only water vapour, with an energy performance comparable to that of paraffin. According to the European Cleansky study, the **contribution of air transport to the greenhouse effect** would not be totally eliminated, since water vapour, like clouds, contributes to the greenhouse effect, but it **would be reduced by 75-90% compared to paraffin**.

The only major defect of hydrogen, from an aeronautical point of view, is that it has to be transported in liquid form to reduce its volume, which requires it to be kept at a temperature below 250 degrees. But even when refrigerated, hydrogen requires a tank four times larger, with equal capacities, than conventional paraffin. The future hydrogen-powered Airbus will therefore have to make room for a large refrigerated hydrogen tank, which would be housed in the back of the plane, explains Guillaume Faury.

But beyond the aircraft, **this change of fuel will also require major adaptations of the infrastructures in the airports**, with the implementation of a new production and distribution chain for hydrogen for aeronautical use, which does not yet exist. These future production and storage sites will have to be situated in the airport zone. This implies not prohibiting the extension of the existing airports, as the proposals of the "citizens' convention" would like.

The electric plane is not however totally ruled out. Before the hydrogenpowered A320, another concept being developed by Airbus should also see the light of day: **a regional propeller plane with up to 100 seats**, capable of covering short distances (of the order of a thousand kilometres), using electric motors. Unlike the hydrogen plane, this regional aircraft **could use batteries**, **combined with a hydrogen fuel cell**, to reduce the number and weight. No precise date has been put forward for this successor to the current ATRs, but **a first test model could see the light of day before the end of this decade**. Finally, in the longer term, Airbus is also preparing the future longhaul aircraft, also hydrogen-powered, whose architecture promises to be very different from the current A350s. This third concept, more "disruptive" according to Guillaume Faury, could take the form of a flying wing with about 200 seats, like the Maveric model unveiled last year. This architect would make it possible to fit the two enormous hydrogen tanks needed for a long-distance journey, on either side of the central passenger cabin, while improving aerodynamics. However, all the problems related to the increase in mass are far from being solved and these aircraft of the future will not see the light of day until the second half of this century.

And for those who would consider the timeframe too long, other technologies are already at work to reduce CO2 emissions from air transport as early as this decade. The most obvious is the replacement of old aircraft with new generation aircraft such as the A350, Boeing 787 and soon the Boeing 777X, which offer fuel consumption and CO2 emissions gains of 15% to 25% compared to the aircraft they replace. This modernisation has accelerated since the beginning of the crisis, with the elimination of the oldest and most consuming aircraft, such as the A380, A340 and 747.

The other major lever for progress, available today, is the use of biofuels. Mixed with conventional paraffin, these biomass-based fuels could make it possible to reduce the carbon footprint of a flight by 80%, taking into account the CO2 absorbed by the plants needed for these biofuels. And they can be used in today's aircraft. But here again, the production and distribution chain is still in its infancy, and its introduction will require investment and government support.

My comment: The aircraft, or rather the aircraft of the future, are beginning to take shape. According to Airbus, they will run on liquid hydrogen as fuel. For the moment, only rockets have this type of fuel (the ground vehicles run on gaseous hydrogen, which is easier to control).

There are many obstacles to overcome. It will be necessary to be able to produce liquid hydrogen in sufficient quantities close to the places of use. It will also be necessary to design aircraft that are as safe as those in operation today. Let's trust our engineers to find the solutions that will allow aviation to continue while preserving the planet.

All industrialists agree on one point: government support is indispensable.

> BP first major to announce oil decline

(source Les Echos) 14 September - Environmental activists have been hoping for this for decades. It is one of the biggest oil companies, BP, which announced it on Monday. World oil consumption is not expected to increase any further, even without new measures to fight global warming.

Demand would certainly recover from the impact of the pandemic, which has led to a drop in car and air travel, the main drivers of growth. But it would then remain "largely stable at around 100 million barrels per day for the next 20 years, before falling to 95 million barrels in 2050," BP says in its annual energy report. "Demand for liquid fuels will continue to grow in India, other Asian countries and Africa," but will be "offset by declining consumption in developed economies.

This outlook is predicated on the assumption that existing environmental measures are maintained without further effort. "The scale and pace of this decline is driven by increasing energy efficiency and the electrification of road transport," says BP. **The British major envisages two other scenarios where awareness of the climate emergency would lead to tougher decisions by governments and the public: a** profound change in uses, a high carbon tax... **Only the most radical scenario would make it possible to comply with the Paris Agreement by limiting global warming to 1.5 degrees.**

In both scenarios, oil demand would never return to its pre-pandemic level. It would fall much faster and sooner. The planet would consume up to 80% less oil than it does today in the middle of the century. "Oil and gas - which will continue to be needed for decades to come - will face increasing competition as society reduces its dependence on fossil fuels," said BP boss Bernard Looney.

Another change needs to be taken into account, which concerns BP. Since February, the new boss, Bernard Looney, has been pushing the British group, which was previously "behind" its European counterparts such as Shell and Total, into a radical green shift. **The former British Petroleum predicts a decline in crude oil production in a few years, a halt to oil exploration in countries where it is not already present, and massive investment in renewable energy** (...).

My comment: According to *BP*, only a radical scenario would limit global warming to 1.5 degrees.

A study published on the "Project Drawdown" website evaluates the impact of 81 sectors on the reduction of greenhouse gases. In the

scenario limiting the rise in temperature to 1.5 degrees, air transport appears in 41st position.

According to this study, it would cost air transport \$850 billion to reduce its emissions by 9 gigatonnes of CO2.

This is much less than the first item of CO2 reduction: the installation of onshore wind turbines. At a cost of \$1660 billion, the CO2 reduction would be 147 gigatons.

Stock market press review ...

> IAG: Berenberg has lowered its target

(source AOF) 14 September - Berenberg has reduced its target price for the IAG share from 300 to 260 pence, while maintaining its recommendation to buy.

My comment: Apart from Wizz Air, all the European airlines have recorded a drop in market capitalisation since the beginning of the health crisis.

Company	2017 (€ billion)	2020 (Billions of euros)	Variation
Air France- KLM	5,8	1,7	-71%
IAG Group	15	2,4	-84%
Lufthansa	14,5	5,1	-65%
easyJet	5,2	2,7	-48%
Ryanair	18,8	13,6	-28%
Wizz Air	2,7	3,1	15%
Norwegian	0,58	0,34	-41%

End of the press review

> My comment on the evolution of the Air France-KLM

share price

The Air France-KLM share is at 3.38 euros at the close of trading on Monday 21 September. **It is down -7.85%** over one week, following a -4.05% drop the previous week. The resumption of the epidemic in most European countries is at the origin of this fall.

Before the coronavirus epidemic, the Air France-KLM share was at 9.93 euros.

The average (the consensus) of analysts for the AF-KLM share is 3.24 euros. The highest target price is 5 euros, the lowest is 1 euro. You can find the details of the analysts' consensus on my blog. I no longer take into account the opinions of analysts prior to the start of the health crisis.

The barrel of Brent oil (North Sea) **is up from \$2 to \$41.** At the beginning of the coronavirus epidemic, it was at \$69.

At the beginning of the week, crude oil prices rose four days in a row, supported by Goldman Sachs' forecast that the market is in deficit and by the threat of another hurricane in the Gulf of Mexico.

This indicative information in no way constitutes an invitation to sell or a solicitation to buy Air France-KLM shares.

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

You can ask me, by return, any question related to the Air France-KLM group or employee shareholding...

See you soon.

To find the latest press reviews of Monday, click here.

If you like this press review, circulate it.

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

François Robardet

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

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

If you no longer wish to receive this letter/press review, [unsubscribe].

If you prefer to receive the press review at another address, please let me know.

To reach me: message for François Robardet. 10666 people receive this press review live