

Worldwide transport affected by the blackout, France relatively unaffected



I Letter from François Robardet

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

for employees and former employees

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Monday's Press Review

> Worldwide transport affected by blackout, France relatively unaffected

(source La Tribune) July 19, 2024 - In the maelstrom created by the computer failure that affected Windows tools worldwide, **transportation found itself at the heart of the whirlwind**. Throughout the morning, many airlines announced that they had been affected to a greater or lesser extent, as have numerous airports and rail operators. **These problems do not affect systems critical to flight or traffic safety, and seem to affect mainly ground systems such as check-in or reservation systems**. But this is enough to cause widespread disruption to operations worldwide. In this general mess, France seems to be coping well for the time being.

Some airlines seem to be able to restart their systems and work around the problem using the content update deployed by cybersecurity firm CrowdStrike for Windows systems. A patch may also improve matters. In the meantime, some airlines are introducing manual procedures, notably for passenger check-in, to cushion disruptions. But **this necessarily generates major delays**, and long queues have formed at airports around the world. **Other airlines are forced to suspend operations altogether**. What's certain is that the bill will be high for everyone.

The French Civil Aviation Authority (DGAC) told La Tribune that **French air traffic**

control tools had not been affected.

(...) On the

operational side, **Air France seems to have managed to mitigate the risks.** At midday, the company reported that its operations "remain close to normal despite the ongoing global IT crisis". "At this stage, only flights to Amsterdam and Berlin are disrupted. Other flights are departing and arriving normally", it added, although it did not rule out any delays during the day. It then announced a return to normal at 3pm. No operational systems appear to have been affected for Air France, even though the company indicated earlier this morning that it was still experiencing disruptions "at certain stopovers".

The situation was more complicated for its subsidiary Transavia France, which was forced to cancel almost 40 flights at the height of the summer peak period, due to the disruption to its operations.

Paris Aéroports (ADP Group) said it was not affected by the blackout, but that several airlines at the Orly and Roissy hubs were affected, resulting in "slower check-in times, delays and the temporary suspension of certain flight schedules". Other French airports are also indirectly affected.

The United States, on the other hand, appears to be particularly hard hit. The U.S. Federal Aviation Administration (FAA) has reported that "several airlines (have) asked the FAA to assist with grounding until the problem is resolved". The three American air transport giants, Delta Airlines, United Airlines and American Airlines, have temporarily suspended their operations, and six international airports are currently closed across the country, including Boston and Las Vegas. (.. .)

In Europe, Ryanair, ITA Airways and KLM have all reported difficulties. The Irish low-cost airline is asking its passengers to arrive at the airport three hours early in order to be able to check in on the spot.

(...)

A large number of airports have announced disruptions and long queues at the height of summer traffic, including Sydney in Australia, Singapore and Hong Kong, as well as airports in the UK and Spain, according to the civil aviation authorities of these two countries. These airports did not specify whether they were directly affected or whether they were affected by the difficulties encountered by the airlines. (...)

The same disparities can be seen on the rail side, although the impact seems to be much less widespread for essentially national networks with fewer operators. In France, the SNCF group and its various components, like RATP, are not affected by the phenomenon.

This is not the case for the UK's Govia Thameslink Railway group. The country's leading rail operator said this morning that it was "currently experiencing widespread IT problems on (its) network", as reported by AFP. And it warned of potential last-minute cancellations.

The maritime sector does not appear to be affected, although the Dutch news agency ANP reports that the Rotterdam Port Authority is investigating "signals" that disruptions may also be causing problems in the port.

My comment: *The information systems of major airlines are extremely complex, due to the diversity of professions involved, the criticality of certain systems or application infrastructures, and the geographical dispersion of users.*

These companies have Operations Control Centers dedicated to IT monitoring.

A major IT failure can lead to severe operational disruptions, exorbitant financial costs and reduced customer satisfaction.

What can we learn from this crisis?

Airline IT strategies vary considerably between what is managed in-house and what is outsourced to third-party companies.

Strong outsourcing of IT tools exposes them dangerously to crises with significant operational and financial consequences.

See also the Bonus article at the end of this newsletter.

> **Air France-KLM: €1.4 billion revolving credit line for sustainable development**

(source AOF) July 19, 2024 - **Air France-KLM and Air France announce that they have successfully renegotiated their sustainable development revolving credit facility to 1.4 billion euros, with an extension of its maturity to July 2028.** In March 2023, Air France-KLM and Air France, as co-borrowers, signed a €1.2 billion sustainability revolving credit facility (RCF).

This credit line, which had an initial maturity of 2026, came with two one-year extension options at the lenders' discretion, and included a 100 million euro accordion increase option, again at the lenders' discretion. The first extension option and the first accordion option were activated in April 2024.

The amended agreement provides for an extension of the maturity date to July 2028, with a one-year extension option at the lenders' discretion, as well as an increase in the amount of the credit line to 1.4 billion euros with optimized financial conditions.

My comment: *A line of credit is comparable to an authorized bank overdraft for private individuals. Its amount can be used on demand when needed.*

The successful renegotiation of this line of credit will give the Air France KLM group greater flexibility.

> Air Calédonie has lost 70% of its traffic and will cut a third of its workforce

(source Journal de l'Aviation) July 17, 2024 - **Air Calédonie** launches an emergency transformation plan. At a time when New Caledonia's economic situation is at its worst and tourism has collapsed, the domestic airline **has announced a number of emergency measures to ensure its survival**. Having already been weakened by the health crisis, the social tensions, blockades and violence of May have "dramatically worsened" its situation: "**the situation is extremely critical** and the company must be transformed as a matter of urgency in order to maintain an adapted and sustainable domestic air transport offer", it states in a press release. Air Calédonie has lost 70% of its traffic and is expecting a gradual improvement over the coming months, but is targeting 300,000 annual passengers by 2025, i.e. 35% less than initially planned.

As a result, **Air Calédonie has announced that it will reduce its workforce by a third**. It will also be taking steps to improve productivity in all areas. **It also hopes to be able to suspend certain recurring charges and obtain financial support, notably from the French government**. It is at an advanced stage of negotiations with another airline to lease one of its four ATR 72-600s, and will explore all possible synergies with Aircalin, which is in the same situation.

Air Calédonie explains that it does not expect a rapid turnaround in the situation, as New Caledonia will have its work cut out to reassure potential future tourists. It will not be able to rely on business travel to sustain its activities, as the economic sector is "devastated" and administrations have run out of funding. Caledonians have also seen their purchasing power plummet as a result of the economic downturn and numerous job losses.

My comment: *Tourism in New Caledonia had already been severely affected by the COVID-19 epidemic. Nouméa La Tontouta airport remained inaccessible to scheduled international passenger flights for many months.*

I have highlighted the fragility of several French airlines, and Air Calédonie seems to be no exception.

One of the reasons for their vulnerability lies in the small number of routes they serve. As soon as a hazard occurs, they find themselves in financial difficulty.

The major airlines, on the other hand, are less confronted with this problem, as they operate in many markets.

Air France KLM, with its balanced network of destinations in most regions of the world, manages to dilute the financial risk in the event of a sector failure.

British Airways' concentration on transatlantic routes has both advantages and disadvantages.

For example, the current closure of Russian airspace has little impact on British Airways. Conversely, during the 2008 financial crisis, transatlantic routes were the hardest hit, and British Airways was particularly hard hit.

> **Airbus A321XLR receives EASA certification**

(source Journal de l'Aviation) July 19, 2024 - EASA Director Florian Guillermet promised imminent certification in June, but it's now a reality. **The European Aviation Safety Agency and Airbus announced on July 19 that the A321XLR, powered by CFM International's LEAP-1A engine, had received type certification**, enabling it to enter service with Iberia before the end of the year.

(...)

Type certification with Pratt & Whitney GTFs should be granted before the end of the year.

Although EASA says it has been working on this certification for over five years, the maiden flight of the first A321XLR took place in June 2022. **The aircraft is designed to carry out long-haul missions with the economic performance of a single-aisle aircraft, making it complementary to wide-body jets** in exploring new destinations or adapting supply on those where demand is variable. This was made possible mainly by the addition of a rear central fuel tank (RCT), whose original design and the implications of its integration on the aircraft's structure imposed a more extensive certification process.

To date, over 500 A321XLRs have been ordered.

My comment: *Airbus strikes another blow to the competition with the possible entry into service of its new long-haul single-aisle aircraft.*

However, operators will need to make informed strategic choices, as the difference in range between the A321 XLR and the A321 LR already in service is small (8,400 km vs. 7,400 km).

To achieve this, it will be essential to identify the demand and markets for this aircraft, capable of two or three daily long-haul flights, compared with five to eight for the A321s used on medium-haul networks.

It should be noted that the A321 XLR requires shorter runways than twin-aisle aircraft, enabling it to access more secondary airports.

For the moment, Air France-KLM, which has ordered aircraft from the A320neo family, has no plans to position itself on the A321 LR and XLR.

It will be interesting to observe Iberia's strategy and results after the first few months of XLR operations.

> **Hydrogen: the future of clean, sustainable air transport**

(source Aerocontact) July 19, 2024 - On July 18, 2024, **Airbus announced that it had teamed up with London Gatwick, easyJet and Air Products**, the world's largest hydrogen supplier, **to develop hydrogen infrastructure in the UK**, as the manufacturer moves closer to its goal of a hydrogen-powered aircraft by 2035.

As part of Airbus' Hydrogen Hubs at Airports, the **scope of work covers the supply and storage of liquid hydrogen at the airport**, refuelling and ground support for hydrogen-powered aircraft, as well as exploring other short-term opportunities for hydrogen use at London Gatwick. Given that the first hydrogen-powered aircraft will initially focus on short- and medium-haul routes, **London Gatwick's position as** the UK's main hub for these services, together with **easyJet's operational knowledge** as a short-haul carrier, **make it the ideal testbed for R&D on this infrastructure.**

Glenn Llewellyn, Vice President of Airbus' ZEROe project, said: "Our license to operate depends on finding better ways to fly. We know that hydrogen has the versatility to be an excellent fuel source for decarbonizing industry. We have set ourselves ambitious targets for flying on hydrogen by 2035, and **this technology needs to be supported by a reliable and tested infrastructure. Sharing knowledge and best practice across airports will be key to** building the right hydrogen ecosystem around the world, and we look forward to working with all consortium members to develop support for the end-to-end hydrogen technology and supply chain that will power future flights."

(...)

This partnership will add to the ongoing work easyJet and Airbus are doing with Hydrogen South West, an infrastructure ecosystem that aims to develop hydrogen in the South West of England.

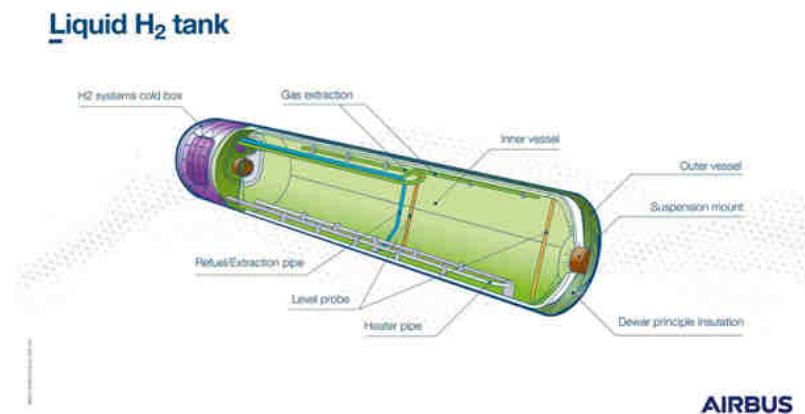
This collaboration between Airbus, London Gatwick, easyJet and Air Products is an important milestone on the road to making hydrogen-powered flights a reality by 2035.

My comment: *The first hydrogen-powered aircraft will be regional jets carrying few passengers and with a limited range.*

To be able to operate hydrogen-powered aircraft, we'll need :

- engines adapted to this new fuel: there are a number of ground test benches, like the Rolls Royce one.

- tanks capable of storing hydrogen at -253 degrees Celsius and a pressure of over 700 bars to limit its volume. By way of comparison, on rockets, it's possible to do this ... for just one hour.



- means of transporting and storing hydrogen in airport infrastructures.

This last point is just as crucial as the other two, as the network of airports supplying hydrogen will need to be sufficiently extensive to enable the emergence of numerous airlines.

To meet this technological challenge, high-quality collaboration between all stakeholders is essential.

The initiative between Airbus, London Gatwick, easyJet and Air Products is remarkable. It is to be hoped that valuable lessons will be learned and that this initiative will be extended to other airports.

In France, ADP announced last October a partnership with GRTgaz to study the piping of hydrogen to Paris airports. Initially, this will be used to power most of the vehicles on airport premises.

Article Bonus

> **Computer failure: "This may be the world's first digital epidemic".**

(source Libération) July 19, 2024 - **Sarah Guillou**, an economist at OFCE, where she heads up the innovation and competition department, **points out that the very high concentration of cloud players contributes to the scale of the outage that**

affected Microsoft's services on Friday.

Companies in all sectors, on every continent, were affected, sometimes with considerable intensity... And a return to normalcy is still hard to predict. All these factors raise questions about the role of the cloud and its concentration in the hands of a few players in the global economy. Sarah Guillou, an economist at OFCE, where she heads the innovation and competition department, looks at the importance of the cloud in global economic exchanges, and the initial lessons we can draw from this global blackout.

What could be the economic impact of this blackout?

From an economic point of view, this is an unprecedented magnitude, at least in terms of the transparency revealed. This may well be the world's first digital epidemic. In practical terms, if it's just a delay in the sale of sports tickets or plane departures, the cost would be low. But some companies in China, for example, have made their employees leave early for the weekend, which amounts to short-time working and has a cost. If this lasts until Monday, it could be even more costly. Another aspect is the way in which the stoppage of activity will impact on a company's growth trajectory: a delay in payment, a customer signature that has not been fulfilled... Beyond these questions, we can observe an incredible contagion effect. It's proof that globalization still exists, albeit perhaps with a substitution of intangible flows for tangible ones. There's a lot of talk about de-globalization, the shortening of value chains, the polarization of trade... But when it comes to data, we're still very much part of a network, a web of interconnections that has only increased in recent years. And the dominant players are few in number. This concentration also has an effect on contagion.

What are the risks of this concentration? When it comes to cloud services, the most dominant player is Amazon with AWS, followed by Microsoft's Azure and Google. And these three have 65% of the world market, and 70% of the European market. The mechanical consequence of this concentration is a concentration of customers, so if something happens to one of the three major suppliers, many more people are potentially impacted by a single problem. The same concentration can be seen in cybersecurity software suppliers such as CrowdStrike. The Financial Times estimates that 15 companies make up 65% of the market, and on more individualized tools like PCs, for example, three companies make up 50%.

What impact will this outage have on Microsoft?

It will shake the company up a bit, obviously, in the sense that it will be questioned about the reliability of the service it offers. Maybe Amazon's AWS will pick up some customers, until Amazon itself has a problem. This breakdown raises the question of the vulnerability of these major players, regardless of their technological power. They are also dominant because they are stronger than others in many respects. The irony is that the company that's supposed to protect you from a cybersecurity problem is the one that screws you up. In fact, the growing complexity of technologies increases internal vulnerability, which adds to vulnerability to external

attacks. Could this lead these giants to internalize their cybersecurity more? For customers affected by the blackout, who had largely outsourced IT functions, the same question may arise. Companies may want to bring these functions in-house, to be able to resolve problems more quickly when they arise.

How important is the cloud in today's global economy?

The cloud is indispensable for all businesses. There is a growing need for this technology, both to optimize their digitization and to exploit their data. Because, in general, when you have a cloud service, it's not just a server, you're also buying software and a data processing service so that it can create value for the company. You can store your data locally, but with a provider, who does things in a big way, it can cost less, not to mention the services that come with it. On the other hand, the problem lies in believing that localizing servers will give you total digital sovereignty. On data ownership, yes, but it doesn't make you immune to this kind of accident, because just because the server is close to home doesn't mean that the company providing you with the cybersecurity service is exempt from the problem and that contagion won't occur. **What's important in sovereignty is intentionality. Here, apparently, it's a technical problem, and the contagion comes more from concentration than from the nationality of the supplier.**

What else can this breakdown mean for the future?

I think this case could, for example, reorientate the European cybersecurity law. There was a lot of opposition between Europeans, with different requirements from one country to another. **We're in a learning process on these issues, but I hope that a certain number of lessons will be learned here, to bring about European regulation that is a little less at the discretion of the Member States, but which imposes common rules, because even with a sovereign cloud in Europe and servers concentrated in one Member State, contagion will occur on the European market. Digital integration requires integrated protection rules.**

***My comment:** According to Le Monde, the situation is gradually returning to normal, but lengthy repairs are still required.*

Some 8.5 million computers were affected by the outage linked to the CrowdStrike software, an all-time record.

End of press review

> **Air France-KLM share price trend**

Air France-KLM shares closed at **8.174 euros** on Friday July 19. It is **up this week (+1.59%)**.

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

The average (consensus) 12-month analyst price for AF-KLM shares is 13.79 euros, down one euro in ten days (it was 15.0 euros at the beginning of January 2023). The highest price target is 23.00 euros, the lowest 8 euros. I only take into account analysts' opinions subsequent to the May 2022 capital increase.

You can find [details of the analyst consensus](#) on my blog.

My comment: *The Air France-KLM share price had regularly exceeded 10 euros for a month and a half. It has fallen by 25% in a month and a half.*

Analysts' average (consensus) 12-month forecast for AF-KLM shares is 13.29 euros, down 1.5 euros in two weeks.

The announcements by Lufthansa and Delta Air Lines (see above) and by Air France-KLM two weeks ago have had a negative impact on the share price.

> **Fuel price trends this** week

The price of a barrel of Jet Fuel in Europe is down \$2 to \$103. 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 \$2 to \$83 per 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 \$75 and \$99.

My new comment: *Since the beginning of the year, the price of a barrel of oil has been relatively stable. It fluctuates between \$80 and \$90.*

The price of a barrel of Jet Fuel in Europe is falling steadily, from \$120 to \$100.

The spread between Jet Fuel in Europe and Brent crude oil has followed the same trajectory as Jet Fuel, approaching its pre-Ukraine level.

> **FCPE management**

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 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 Air France-KLM Employee Share Ownership section of my website](#).*

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...

See you soon.

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New readers can receive it by [sending me](#) an email address of their choice.

| François Robardet

Represented Air France-KLM's employee and former employee PS and PNC shareholders.

You can find me on my twitter account @FrRobardet

When I was elected, I received the support of the CFDT and the UNPNC.

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

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