

## Fuel savings and sustainability:

---

How GE Aerospace, Software as a Service FlightPulse® helped Malaysia Airlines reduce fuel usage and optimize pilot decision-making.



Airlines face increasing pressure to meet net-zero targets and reduce emissions — but this isn't a straightforward task. This whitepaper examines how the GE Aerospace, Software as a Service Electronic Flight Bag (EFB) app **FlightPulse®** helps pilots make more sustainable choices and adopt fuel-saving procedures while fostering a more collaborative culture between pilots and management.

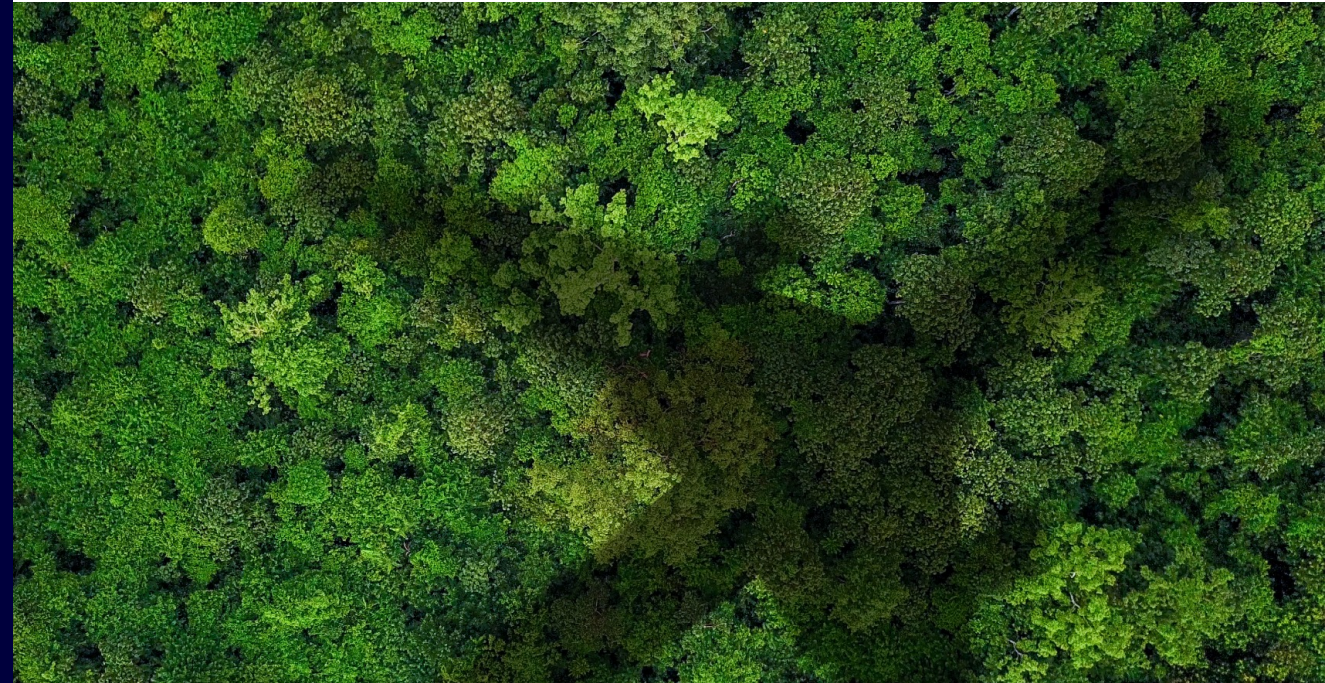
Through a case study of Malaysia Airlines, this paper will demonstrate how FlightPulse® is helping to empower airlines to overcome sustainability challenges, increase efficiency, and drive profitability.

## Sustainability: A global responsibility

For many years, the aviation industry has been looking for ways to increase the sustainability of operations. Many airlines continue to face an abundance of challenges that make it difficult to adopt more sustainable initiatives:

- Ambitious, blanket net zero goals can be hugely expensive to reach, threatening airline profitability.
- Often, the onus is put on innovative new technologies, such as sustainable aviation fuel, but these solutions are not yet readily available.
- The uptake of greener practices can be slow, largely down to dispersed, siloed global teams.

Many of the airlines looking to take immediate action are turning to software-enabled fuel optimization. By using data to adopt more efficient fuel practices, they can reduce waste and lower fuel costs. One such airline is Malaysia Airlines.



## How Malaysia Airlines is approaching sustainability

Malaysia Airlines carries up to 40,000 travelers daily to over 1,000 destinations in over 170 territories.

With a focus on fuel efficiency and waste reduction, Malaysia Airlines has implemented various initiatives across its operations to address sustainability goals. Its fuel efficiency program has been running for over a decade, contributing to a 15% fuel burn improvement recorded over the past eight years.

Despite longstanding sustainability initiatives, Malaysia Airlines needed a way to better engage with its pilots. The airline chose GE Aerospace, Software as a Service FlightPulse®, a solution that puts high-quality flight data into the hands of pilots, to give them the insight they need to make more economic decisions about fuel consumption.

## Increasing daily usage by 100%

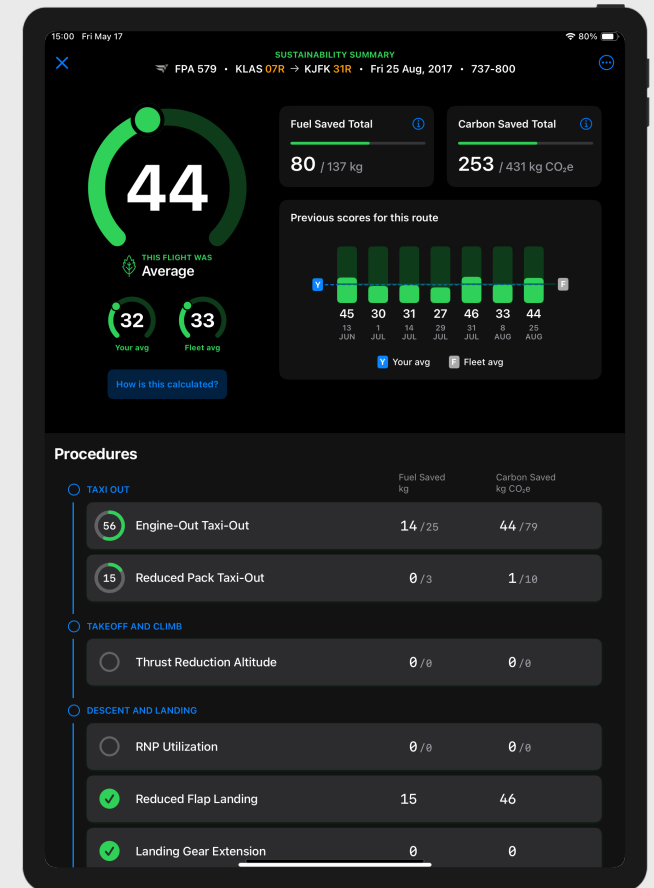
While the FlightPulse® app was well received by management, it took some time to communicate to pilots. Malaysia Airlines developed a one-of-a-kind workshop program called “Move Right” to show pilots how they could use the insights within FlightPulse®. A year later, the airline reported more than a 100% increase in the daily usage of FlightPulse®, coupled with an increase of nearly 20% in sustainability procedure success rate.

## Empowering pilots

FlightPulse® is an Electronic Flight Bag (EFB) app that puts the right data directly in the hands of commercial pilots. It provides them with insights on fuel consumption and emissions, helping them understand the role they play in sustainability initiatives. It also displays opportunities to optimize consumption on upcoming flights — and the potential fuel savings for their business if they do so.

When pilots understand their own performance, they can adjust their flight plans and flying habits to maximize fuel efficiency. They also have direct access to secure benchmarking and data, shortening feedback loops and giving them more ways to improve.

In a recent upgrade, the FlightPulse® app provides pilots with their “Sustainability Summary” score for each flight. This quantifies the degree to which sustainability actions were taken, relative to the opportunities that were available. Pilots can track their scores over time to continuously improve their approach to sustainability for each airport and route.





## Coordinating a smooth take-off

For Malaysia Airlines to realize the full potential of FlightPulse®, it needed to get its pilots on board. To do this, management decided to host open change management conversations with pilots about various topics, including the fuel efficiency challenges in the “Move Right” program. They focused on building an inclusive and trusting environment that encouraged pilots to share their ideas and concerns while stressing the importance of data being used non-punitively — no one was going to be singled out for less efficient practices.

The airline also encouraged behavioral and cultural change among its pilots (critical to improving sustainable flying). They achieved this by introducing the FlightPulse® Implementation playbook—a guide co-written by Qantas and GE that helps pilots get the most out of the app. The airline took advantage of the playbook to help develop their own change management practices.

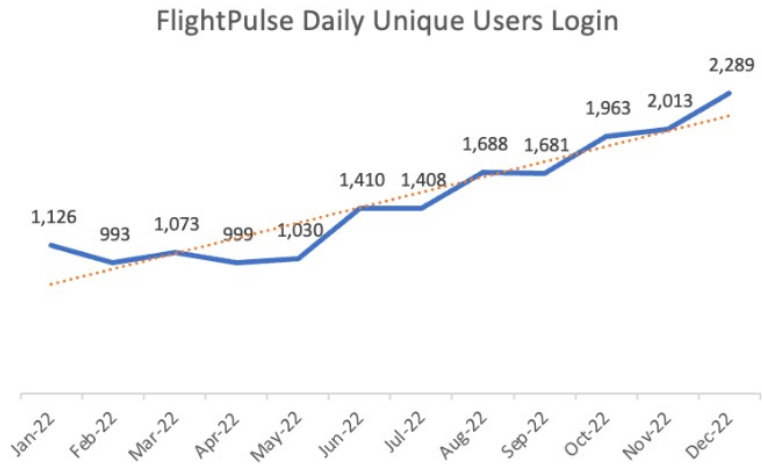
## Cruising toward sustainability

After these productive sessions, Malaysia Airlines pilots were able to take full advantage of FlightPulse®:

- **Pilots can identify opportunities to introduce more sustainable flying practices** thanks to efficiency success rate and target airports/runways displayed in the app.
- **Malaysia Airlines can give pilots a stronger sense of ownership** by incorporating workshop feedback into how they configure the app.
- **Pilots can quickly interpret data and understand how to take action** due to the app’s easy-to-use interface.
- **Pilots can provide feedback on the app** and suggest further improvements that materialize in weeks. GE’s 2-week release schedule means new customer-requested features are implemented quickly for seamless upgrades.
- **Management can use data to find additional fuel savings** that could be achieved and can place a greater emphasis on these campaigns.

By running these change management sessions in the “Move Right” program, Malaysia Airlines was able to gain buy-in from pilots. Now, they’re using the data provided by FlightPulse® to take a more active role in meeting sustainability targets.

## Results: Set course for sustainability



### A successful uptake

By running change management workshops throughout 2022, Malaysia Airlines was able to increase adoption of the FlightPulse® app from 1,126 daily sessions to 2,289.

## Multiple routes to fuel savings

### Reduced-flaps landing

Pilots are more confident to use lower flap settings while landing. This is because FlightPulse® lets them visualize their touchdown points and runway exits, as derived from the flight data.

The success rate for this procedure has been over 90% since 2020.

### Single-engine taxi in

Due to pilots' unfamiliarity and low confidence in executing this procedure, success rate was once low. The "Move Right" program, coupled with insights surfaced in FlightPulse®, have demonstrated evidence of historical opportunities and substantiated the perceived effectiveness of single engine taxi procedures.

In January 2019, it was used in 18% of candidate instances. By October 2021, that number had reached 78%.

### Improved efficiency

Malaysia Airlines created an efficiency index to holistically quantify pilot actions taken against fuel procedure opportunities for flights.

In 2022, after adopting FlightPulse®, the airline had increased the average pilot efficiency index by 30%.

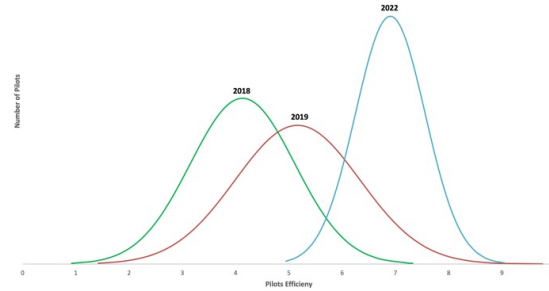
### RNP-AR

Required Navigation Performance (RNP) approaches enable pilots to monitor the efficiency of their approach while increasing situational awareness.

Through the "Move Right" change management program and FlightPulse®, Malaysia Airlines was able to increase its success rate from 6% to 22%.

## Greater pilot efficiency

After adopting FlightPulse® and running change management discussions, Malaysia Airlines’ pilots averaged far higher in their fleet efficiency index while tightening the curve, indicative of a more aligned pilot group.



By giving pilots direct access to valuable flight data with GE Aerospace, Software as a Service FlightPulse® app, and using “Move Right” change management discussions to increase engagement, Malaysia Airlines is taking significant steps toward sustainable aviation. The return on investment is also noteworthy, as every kilogram of fuel saved helps the airline’s budget go further.

### Where could FlightPulse® take you?

To learn how FlightPulse® could empower your pilots to make more sustainable choices about fuel consumption, [click here](#).

## About GE Aerospace, Software as a Service

We’ve collaborated with over 450 aviation partners to develop a leading suite of solutions, all designed to help you improve sustainability, efficiency, and safety. The secret? Putting your flight data to work. After gathering over 46,000 years’ worth of flight data, we’re able to provide a level of insight that no other single solution can offer.

