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Environmental Efforts

Global Warming Prevention Measures from the Frontline

Aircraft account for 98% of all CO₂ emissions at the ANA Group. Through the efficient use of fuels, we are pursuing various approaches to control these emissions. Among those in our flight crew and maintenance section who implement global-warming prevention measures at the front line, we interviewed Captain Akira Kobayashi, a Boeing 767 pilot, and Authorised Aircraft Maintenance Engineer Akito Mibu.

What points do you watch for in your work?

Kobayashi: Absolute focus on flight safety. It goes without saying that I consider this my biggest job responsibility. The Operational Manual, a kind of bible for flight crew, states the fundamental policy: "While keeping safety first and foremost, strive for optimal flight efficiency and on-time flight operation, and perform tasks proactively to ensure a comfortable flight." In daily flights, as well as focusing on flight safety, I make efforts to provide the highest-quality flight under various constraints such as weather and airport congestion.

Mibu: My job is inspecting and repairing aircraft at Kansai Airport. Maintenance engineers must release aircraft to the flight crew only after making sure the

aircraft are in top condition, so we pay great attention to safety. In pursuing maintenance work, I also pay utmost attention to such points as whether my judgment is correct, whether regulations are being observed.

Will you introduce the global warming measures that you are developing?

Kobayashi: As 98% of CO₂ emissions at the ANA Group are from aircraft, I feel that flight crew have a very important role. Engine starting, taxiing, takeoff, flying at cruising altitude, landing and parking—in each of these operations, from departure to arrival, we consume jet fuel. At Flight Operations, since FY2003 we have been working on an EFP*¹ promotion project that helps reduce fuel consumption through various schemes. For example, flight plans take into consideration weather conditions and air traffic to choose altitudes and speeds requiring less fuel; and we inform flight crews of the descent and approach points for each airport for the most fuel-efficient maneuvers. I am active as a member of the project.

In daily operations, sometimes speed is increased to avoid operational delays, but when we looked at the relationship between such operation and fuel consumption, we found that the latter greatly increased while the time saved was negligible. In this project, actual data is published to impress on flight crew that speeding up without



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due reason saves very little time and just burns more fuel.

*1 Efficient Fuel Program

What measures are being taken in the maintenance section?

Mibu: What we emphasize most is the washing of engines, which we have been enforcing since FY2003. Engines don't get dirty when the plane is high up in the sky but rather during taxiing or just after takeoff, where the air is less clean. Dust particles sticking to the compressors degrade the performance of engines, which then need more fuel to do the same amount of work, resulting in more CO₂ emissions. Our solution is to wash the compres-

sors regularly with water to remove the attached particles, restore engine performance and improve fuel efficiency.

How much effect do these measures have?

Kobayashi: Though we are constrained by weather conditions and air traffic control, in the case of a Boeing 767, if you raise cruising altitude by one rank*², fuel consumption decreases 1–2%. And you can save fuel by choosing an efficient route, thereby shortening flight time.

Mibu: When washed of dust particles, engines are about 1% more efficient. But even if washed, an engine's fuel efficiency deteriorates over time as particles become attached again. So we will wash them more frequently in FY2007, and wash more of them.

*² 2,000 feet (about 610 m)

What sort of difficulties do you experience?

Mibu: Washing requires a large facility—it could only be done in the hangar. But in May 2006 the engineers developed a washing kit that could be used on the ramp. This kit is now deployed at Narita, Haneda, Chubu, Kansai, Fukuoka and Okinawa airports, where washing can be done in two hours between flights, greatly increasing efficiency. At the ANA Group we make it a rule to wash engines once in three months.

Kobayashi: We constantly monitor climatic conditions to determine the best balance of safety, efficiency, punctuality and comfort, but nature is whimsical and occasionally shows its fangs. I bear that firmly in mind; we should never underestimate nature.

Until now, flight crews were confident that they were being fuel efficient. Now that the EFP data has been disclosed and flight crews are aware of how much fuel is being saved, I think this will motivate us to reduce even more CO₂.

How can fuel efficiency be further improved?

Mibu: I think that right now, deploying the latest engines is the best way. The Boeing 747 aircraft has four engines but its successor, the 777, can fly with only two. If engine performance improves and fuel efficiency increases, this of course reduces the impact on the environment. I have big expectations of the Boeing 787 scheduled to be introduced in 2008.

Kobayashi: Another factor is the congestion of airports and airways. Waiting to takeoff, or being instructed to reroute or hold position in the air—these are all common at various airports and times. At Haneda and Narita airports in particular this happens a lot. I hope airports and control facilities will be improved to alleviate the impact on the environment.