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Study on the evaluation of aircraft boarding strategies

considering the stress on passengers

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Much of the previous research has focused on reducing boarding times. This is because the boarding strategies currently used in many airports have been shown to be inefficient. For example, back-to-front boarding strategies, which are often used as boarding strategies, are inefficient, and in some cases, random passenger boarding strategies are more efficient.

Therefore, although various studies have been conducted on efficient boarding strategies for aircraft, such proposed boarding strategies are rarely used in airports. Thus, the fact that efficient boarding strategies are proposed but rarely used in practice is problematic.

In order to ensure that boarding strategies proposed in various studies are actually utilized at airports, I thought it would be necessary to compare boarding strategies. In addition, many conventional studies compare boarding strategies in terms of efficiency. However, if a boarding strategy is only efficient, but places a heavy burden on passengers, there is a possibility that airports that use that boarding strategy will be avoided in the long run.

Therefore, it is necessary to make comparisons not only in terms of efficiency, but also in terms of the burden placed on passengers.

The load on passengers for each boarding strategy is measured by simulating the boarding process.

In addition, although most of the previous studies on boarding strategies have focused on aircraft with a single entrance, there are currently aircraft with not only a single entrance but also two entrances. Therefore, a boarding simulation using an aircraft with two entrances was conducted.

The simulation and the measured stress values of passengers revealed aspects that could not be seen only from the aspect of high efficiency. For example, the strategy that was considered the most efficient had the highest mean and median stress values, while the strategy that was not inefficient but was less efficient than the most efficient strategy had the lowest mean and median stress values.