Q&A: Cracking the code to holiday travel with the 'Steffen Method'

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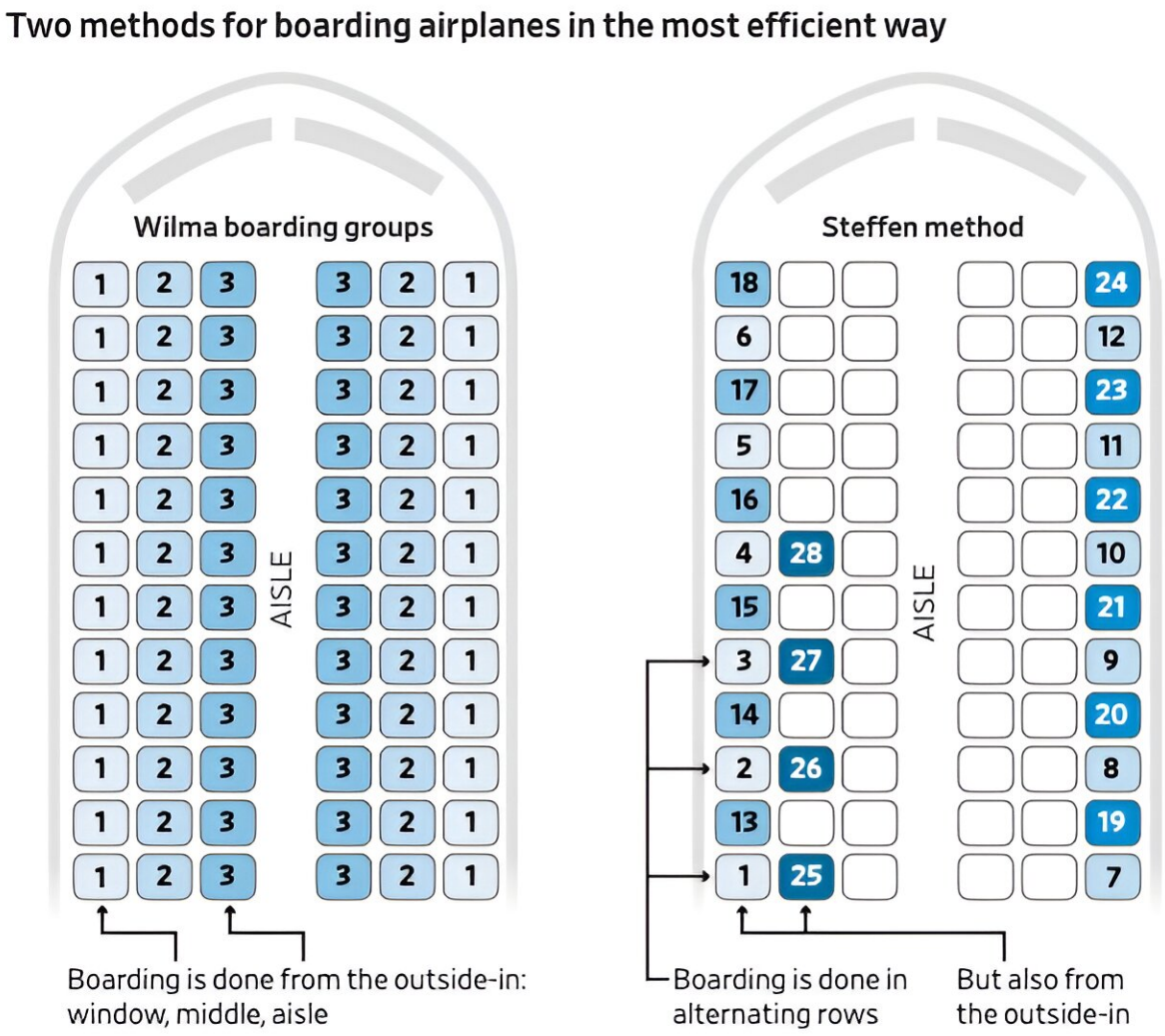

A look at the 'Steffen Method' boarding process. Credit: Jason Steffen, United Airlines, Wall Street Journal

As Jason Steffen will tell you, the job of an astrophysicist is never done. It just keeps expanding—much like the universe.

When he's not teaching classes on the motion and composition of planets orbiting distant stars, or researching the evolution of planetary systems over billions of years, he takes a more grounded approach to solving more Earthly problems. That is… until they take off from the runway. He's the researcher and creator behind the "Steffen Method"—his solution to filling up an aircraft as quickly as possible.

"Frustration was the main motivator," said Steffen, who in 2008 published a scientific paper in *Journal of Air Transport Management* to back up his claim. "I figured that after the traffic, the security line, and the line at the gate, that the line in the jet bridge was a line too far."

With holiday travel at its highest in several years according to AAA, the "Steffen Method" is making its rounds through national headlines once more. There's no patent for it—the hope is simply to make an influence.

Steffen offered us an explainer on his boarding process, so read on for a reminder of 'what could have been' the next time you're battling long lines at the airport.

What's the background and motivation behind creating the 'Steffen Method'?

When I was a graduate student, I was stuck in traffic getting to the Seattle-Tacoma Airport. I was stuck in line at the security gate. I was stuck in a line to get my ticket checked. And then the last line was the last straw—boarding the plane. It seemed like a tractable problem.

And I completely expected the answer to be, "You board from the back of the plane to the front." I was wrong and quickly came to my senses on that.

What's wrong with boarding from back to front?

The problem is that the first six passengers in line are all trying to sit in the same row. And so there's one person standing at the row, putting their luggage away, and there are five people behind that person blocking everyone from doing anything else in that whole part of the airplane.

Whenever you're trying to fit lots of people into the same part of the airplane, all you're doing is concentrating them into one part of the aisle where only one or two people can put their luggage away and sit down.

How does the 'Steffen Method' work?

To speed up the process, you want to use the whole aisle as much as possible. You don't want to spread them out too far because if you have one at the back of the airplane and one at the front of the airplane, there's still a lot of aisle that isn't used. You want to have people spread out with enough personal room to maneuver their luggage, but not more than that.

My method is to send people in so that adjacent passengers in line are two rows apart from each other. So, if you're standing in the boarding line in front of me, your aircraft seat will be two rows in front of me. Then, you can put your luggage away, I can put my luggage away, we all have enough room to maneuver and not get in each other's way. Now, 10 people are all putting their luggage away and they all sit down.

The way to do this is to send in passengers, in order from back to front. But every even row on the right hand side of the airplane. Seat A, every even row, then seat B, every even row, then work your way across the airplane.

The moral of the story is that you want to parallelize the process. You don't want it to be a serial process where it's just one person at a time. You parallelize it so that many people can put their luggage away at the same time.

It's not the most practical way of lining people up, although Southwest Airlines has already solved lining people up in a specific order. But that was never my intention. My intention was to find the best, fastest way.

Southwest Airlines gets passengers lined up in a certain order, but once they're on the plane, doesn't it become chaotic with the open seating?

It's chaos, but it's also faster. Southwest Airlines is about 30% faster than everyone else.

Is there a reason why airlines don't use more than one door for loading an aircraft?

There's no reason you can't. I think the main reason is you have to install a lot of extra infrastructure to do it. I'm not totally convinced it's much faster. If you're going from the windows to the middle aisle method, then if you board from the back or front, it's just going to be the same. It will only really speed it up by the amount of time it takes to walk the length of the airplane.

The real issue was the line in the jet bridge. If the process was more

efficient, that last line wouldn't be there. If people could sit down more quickly, then checking your ticket at the gate should spread the passengers out enough to allow the airplane to fill without lining up inside the jet bridge.

What other ideas do you have for improving efficiency at the airport?

My goal was to find what's the fastest because then you can judge if it's worth it to make a change. Then, you know how much room there is for improvement. To be honest, I would need to know more about what actually goes on in the airplane in the whole turnaround time before I could realistically pontificate about what I think these multi-billion dollar companies should do with their procedures.

I don't have enough information on how frequently people skip over their seat or put their luggage in the wrong part of the airplane. There are a lot of second-order variables that would need to be taken into account in order to really optimize something. Human nature muddies the waters. The worst-case scenario is you just get to random boarding which is still faster than most other methods.

What is your hope for the future of plane boarding?

It would be gratifying to know that people in the industry looked at what I did, and to know it was taken seriously. I don't necessarily expect my method to be adopted by anybody—maybe the military would adopt it, where they can force people to stand the way that they want them to.

Are you surprised the 'Steffen Method' is still making headlines 15 years after your paper published?

The fact that this resurfaces doesn't surprise me because there's always a next generation of readers and there's always a next generation of travelers. Along with that, people travel regularly. The holidays are going to come up, people are going to get on airplanes, and so it becomes a topical point of discussion several times a year.

Airlines fairly frequently will change their policies and their boarding groups, or two airlines will merge and now they have to adopt something that's different. And so it comes back and becomes a new topic of conversation from the industry side, as well.

Provided by University of Nevada, Las Vegas