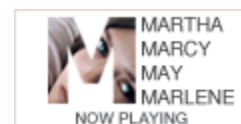


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The Cattle Call at Gate 15 Is Taking Longer and Longer

By **JAD MOUAWAD**

Ever been waiting to board a plane, but first the airline has to go through a long list of passengers who have priority? First- and business-class passengers, frequent fliers, elite card holders, uniformed members of the military, families with children, those who hold credit cards affiliated with the airlines, passengers who paid for priority seats.

By the time coach travelers are called, the overhead bins seem to be already full.

Airlines have been boarding passengers since the first commercial flight, but as they have added new classes of seating to their cabins and new fees for priority boarding — all in the name of more revenue — they have slowed down the whole process.

Checked-baggage fees have only added to the problem, because travelers now bring more roll-ons onboard, blocking the aisles as they try to cram their belongings into any available space.

And that's not to mention the fact that airlines are now flying fuller planes.

So it should be no surprise that boarding has become one more frustrating step in airline travel. Or, as Mark DuPont, the vice president for airport planning at American Airlines, put it: "Boarding can be like driving behind a slow-moving truck that you can't overtake."

Boarding time has doubled over the last decades, according to research by Boeing. It now takes 30 to 40 minutes to board about 140 passengers on a domestic flight, up from around 15 minutes in the 1970s.

Airlines have tried all kinds of elaborate tricks over the years to get passengers in speedily and leave the gate on time. Some boarded those in the back rows first, while others gave priority to those with window seats, and some came up with elaborate combinations, including one known as the "reverse pyramid."

One airline did figure out a way to sharply cut boarding time. Spirit Airlines found that passengers got to their seats much more rapidly once it started charging \$20 to \$40 per carry-on bag. More passengers checked their bags. Celebrating one year of "stress-free boarding" this summer, Spirit said its policy cut boarding time by six minutes on average.

But other airlines are reluctant to take such a drastic step for fear of alienating customers.

That is why some airlines have gone back to the drawing board in recent months. In theory, figuring out the most efficient way to board a plane is a straight-ahead mathematical problem, but the airlines have found that life is far more unpredictable.

“The real world has wrecked their optimization plans,” said Matthew Daimler, the founder of SeatGuru, a Web site that helps passenger find the best seats on a particular plane.

American Airlines changed the way it boarded its planes in May. It still gives priority to business passengers and frequent fliers but it then boards passengers who paid an extra \$9 to \$19 to get on early, guaranteeing they will find space to stow their bags.

The rest of the passengers are then brought in three random groups, in an attempt to spread them out more evenly through the cabin, and allow more people to find their seats faster. The approach also helps passengers stow their luggage more efficiently, nearer to their seats, allowing more people to find overhead space and cutting the number of bags that need to be checked at the last minute — a common cause of delayed flights.

“I am not saying it’s perfect or that it will stay for us forever, but right now, it is working well,” Mr. DuPont said. The new method has cut boarding by four to five minutes, he said.

To further ease the anxiety of boarding, American is now making fewer announcements at the gate.

The airlines do not mind if boarding takes a little longer because all the extra fees have been a major benefit for their bottom lines. They collected \$1.6 billion from checked bags alone in the first half of 2011, about the same as the first half of last year, according to the Department of Transportation. According to estimates by Amadeus, a global distribution service, the extra fees will add up to \$12.5 billion in 2011, up 87 percent from last year.

The challenge of boarding is thornier for narrow-body planes with single aisles that are used on domestic flights than on larger planes used on international flights where passengers have two possible pathways.

International flights, too, often use more than one gate for boarding. And while domestic flights need to turn a plane — unload one set of passengers, clean the plane and board a new set — in about an hour so they can fly many times a day, international flights usually only have one trip a day. This leaves more time for boarding.

A scientist once said the problem of boarding a single-aisle plane was a real-life application of Einstein’s theory of relativity, where passengers are constrained in their movements through space and time.

A few years ago, Jason Steffen, an astrophysicist at Fermilab in Chicago, figured there had to be a better way to board after he was held up on the jetway while waiting for a flight to Washington. “My interest was academic at first,” Mr. Steffen said. “If the process was efficient, there would be no line.”

He set out to solve the problem using a “Markov Chain Monte Carlo optimization algorithm” — a mathematical program well suited for the kind of haphazard events that occur in an airline cabin. Much to his surprise, he found that the common back-to-front method was among the slowest: passengers must wait for those standing before them to stow their bags and sit down. (This explains why he was stuck on the jetway.) **It is far better, it turns out, to let passengers board randomly.**

“The lesson I learned comes down to this: you want to spread passengers out and not concentrate them while boarding,” he said. “That’s the moral of the story.”

Others have also searched for the holy grail of boarding. In 2002, America West Airlines, which later merged with US Airways, hired industrial engineers from Arizona State University to speed up the boarding process. The group came up with an approach that they called the “reverse pyramid.” It begins with passengers assigned to window seats in the back, and gradually makes its way to the front of the plane in a staggered pattern. While the method saved time, US Airways found it had drawbacks. Passengers without elite status but who had seats in the front rows could not find space for their bags because they boarded last. The airline dropped the method in 2007.

“Overhead space has really become a premium product,” said Kerry Hester, the senior vice president for operations planning at US Airways. “Customers tell us they value the ability to board the plane sooner and get settled and get their bags stored.”

Another approach is used by Southwest, which says it can board its planes in around 15 minutes. It argues that the root of boarding delays is the industry’s practice of assigning seat numbers. Southwest’s passengers are instead assigned to one of three boarding groups, and then given a number based on the time they checked in.

But here again, it found a way to cater to its business clients. Passengers who buy a premium “Business Select” ticket are guaranteed to board ahead of everyone, followed by Southwest frequent fliers and passengers who bought a \$10 one-way “early-bird check-in” pass.

The airlines will surely continue to tweak their formulas, searching for what Scott O’Leary, the managing director of customer experience at United, described as “the sweet spot between speed and a sense of order.”

