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Why a 'No Fly List' Aimed At Terrorists Delays Others

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JUNEAU, Alaska -- There are about 300 people world-wide the U.S. considers so dangerous to civil aviation it has them on a "No Fly List."

Larry Musarra, retired Coast Guard commander and father of three, isn't one of them. A pilot and avid outdoorsman, he is a local hero for his daring helicopter rescues of stranded fishermen and mountaineers. He now runs a visitor center overlooking Juneau's spectacular Mendenhall Glacier.

But Alaska Airlines' computers haven't figured that out. Its reservations system, designed by travel-software giant Sabre Holdings Corp., flags Mr. Musarra whenever he checks in, which is about once a month, when he visits a developmentally-disabled son in Oregon. At the ticket counter, Mr. Musarra has often watched the color drain from agents' faces as they read a warning that he might be on the terrorist watch list. After a criminal-background check, he eventually gets to fly but faces extra luggage and body searches.

The No Fly List, quietly introduced after the Sept. 11 terror attacks, is designed to keep suspected violent types off airliners. It includes terrorism suspects thought to pose an imminent danger to flights. Some people who present a general threat to air safety because of violent behavior also make the list. The new Transportation Security Agency, or TSA, compiles names from intelligence and law enforcement and sends the No Fly List to airlines. Their job is to see that nobody on the list gets aboard.

NAME GAME

حاج محمد عثمان عبد الرقيب

Renderings of an Arabic name using the Roman alphabet vary by country -- a challenge for airlines as they apply the No Fly List

Hajj Mohamed Uthman Abd Al Ragib  
 Iraq

Muhamad Usman Abdel Raqeeb  
 Syria, Lebanon, Jordan

Haj Mohd Othman Abdul Rajeeb  
 Kuwait, Bahrain, Qatar, Saudi Arabia, Oman, Yemen, United Arab Emirates

Hag Muhammad Osman Abdurra'ib  
 Egypt, Sudan

Haj Imhemed Otmame Abderaqib  
 Libya, Tunisia, Morocco, Algeria, Mauritania

Source: Language Analysis Systems

It sounds simple, but it's proving tricky to execute. Many entries on the list lack details that could make it easy to know if a traveler is really the person named. And the TSA gives airlines little guidance on just when a passenger's name is close enough to one on the list to warrant flagging the person for a law-enforcement check.

The result is that carriers are checking the No Fly List a multitude of ways and coming up with vexing numbers of "false positives" -- innocent passengers subjected again and again to law-enforcement reviews. The flagging of some fliers who were political activists has even led to suspicions the government was grilling them because of their views.

These inconveniences may seem like a small price to pay if the system improves security. But the Federal Bureau of Investigation, which contributes to the No Fly List, says the list has helped catch very few terrorism suspects. While that might simply be because the terrorists haven't tried to fly lately, linguistics experts say that if they did -- and particularly if they had Arabic names -- it's far from certain that current methods would flag them.

One reason: In checking passengers against the No Fly List, some airlines use techniques that were designed decades ago, and for an entirely different task: to let agents find passenger records quickly without having a full name or a name's precise spelling.

These "name matching" systems also help airlines spot abusive bookings, in which travelers reserve a bunch of flights under slightly varying names. The idea is to cast a wide net. But when applied to a watch list, they have the perverse effect of flagging numerous travelers whose names are merely similar to one of those on the list.

One name-matching technique that airlines have used, called Soundex, dates back more than 100 years, to when it was invented to analyze names from the 1890 census. In its simplest form, it takes a name, strips out vowels and assigns codes to somewhat-similar-sounding consonants, such as "c" and "z."

The result can be bizarre. Hencke and Hamza, for example, have the same code, H520. If there's a Hamza on the No Fly List, a traveler named Hencke could be pulled aside for a background check before being allowed to board.

A 40-year-old method designed specifically for airlines does something similar, stripping names down to consonants and pulling up names that have the same consonants in the same order. A third technique sometimes used by airlines hunts for matches based on the first few letters of surnames.

Hence Mr. Musarra's troubles in Juneau. In an algorithm used by Sabre, whose software runs Alaska Airlines' reservations system and many others, "Musarra" appears to pop up as a match for any name starting with "Mus." A fair number of names from the Mideast and Central Asia begin that way, including at least one on the No Fly List.

Exactly what techniques airlines and firms such as Sabre use to check passengers against the list is impossible to know. They won't identify their formulas, and the government doesn't want them to. But some current and former industry executives say most airlines -- while making periodic refinements, including since Sept. 11 -- still use roughly the same name-matching tools as they have for decades.

Why not just match names precisely, and question only people whose names exactly fit an entry on the No Fly List? That wouldn't do, either. Many people's names have a number of variations, such as William or Bill. Many are spelled either with a middle initial or without one. And non-Western names can be rendered in the Roman alphabet in a host of ways.

A name written as "Haj Imhemed Otmame Abderaqib" in Algeria might be "Hajj Mohamed Uthman Abd al Ragib" in Iraq, and as "Hag Muhammad Osman Abdurra'ib" in Sudan, according to Language Analysis Systems Inc., a Herndon, Va., company that does name-analysis work for many federal agencies.

One wanted terrorism suspect, Adnan G. El Shukrijumah, uses five aliases. The six names can be translated a total of more than 500 ways, says Language Analysis Systems. The firm adds that foreign words can also be mistaken for first or last names, such as "Effendi," which is an honorific for "Sir" or "Mister" in some Mideastern languages.

Another quirk of airlines' systems is that groups that purchase their tickets together end up in a single travel record. If one member triggers a hit on the watch list, computers lock up on them all.

A year ago in Milwaukee, Midwest Express pulled aside 19 members of a group called Peace Action Wisconsin headed to Washington for a "teach-in" about U.S. military involvement in Colombia. The group, which included a nun and a grandmother, had to wait for sheriff's deputies to run immigration and FBI background checks, according to records of the incident. The delay caused them to miss their event.

Four months later in San Francisco, Jan Adams and Rebecca Gordon, co-founders of an antiwar newsletter called War Times, were pulled aside for police questioning when they arrived at the ATA Airlines counter. An FBI search turned up nothing, and the women, both in their fifties, were allowed to fly.

In both cases, the groups were told they had matched the No Fly List. But these incidents and others fed the notion among activists that the government was targeting them. "When is a nun considered too dangerous to get on board a plane? When she's a peace activist," said one of numerous critiques, this one in the newspaper Socialist Worker.

But three months after the Milwaukee incident, a report by the county sheriff's office said the incident was due to use of Soundex in Midwest Express's reservations system, which uses Sabre software. A security official for the airline says that a group member with the last name of "Laden" might have helped trip up the group.

As for Jan Adams in San Francisco, she was one of a number of Adamses with the first initial J who were stopped last year. They included 23-year-old Jarrett Adams on June 5, 55-year-old John Adams and his wife on June 16, and 34-year-old John Christian Adams, who complained to the TSA last July.

The apparent trigger: A Joseph Adams on the No Fly List, whose entry gives little data besides a birth date. Officials at ATA, the airline Ms. Adams flew, and some other carriers say they are frustrated that the watch list doesn't have better data to eliminate mismatches.



David Nelson

One needn't be an activist to get caught in this web. Last April, two San Francisco airport police officers cornered David L. Nelson, a 56-year-old bank executive, as he checked in at Alaska Airlines. "They had hands on their guns. They asked was I an American citizen and who am I," Mr. Nelson says. After a half-hour of questions and database checks, they cleared him. He says his son, named David C. Nelson, also has been stopped as a No Fly List match.

At Oakland International Airport, Police Sgt. Larry Krupp says he has cleared so many innocent "David Nelsons" to board that one of them now buys him coffee. There is a name very similar to theirs on the No Fly List.

For every check, Sgt. Krupp must thumb through an 86-page, nonalphabetized list of names. "The vast majority of times we go there, they're not even on the list," he says. Sgt. Krupp says he has had only one true match, a man he describes as an Afghan drug dealer.

Newer methods exist, which take into account names' cultural origins in order to come up with more-relevant name variations. Some government agencies are starting to use them. But travel consultants say hard-pressed airlines have been reluctant to spend money to improve a screening function they believe should be done by the government -- and that the TSA has said it eventually will assume. Airlines would rather leave it to the government to rule a passenger in or out. No Fly List entries can include subjective notations like "is sickly with asthma, uses a lot of hand gestures," as one did on a recent copy of the list reviewed by The Wall Street Journal.

A wide variety of reservations systems have their genesis in the Sabre system, which International Business Machines Corp. designed for American Airlines in the 1960s. IBM later built similar systems for other airlines.

Lightning fast in basic reservations chores, the mainframe-based systems are less well suited for other tasks, such as clearing a frequent traveler to fly once and for all. In most airline systems, the No Fly checks are set up in such a way that the computer treats each passenger as a brand new name, even if he or she has flown recently and was cleared in another flight record.

The TSA is considering a way to put fliers who've repeatedly been mistakenly flagged on a "Fly List." But even if this proved technically feasible, security officials at airlines and the TSA would still have the challenge of making sure they weren't vulnerable to letting a dangerous person of the same name slip through.

Records obtained in a Freedom of Information Act suit brought by the Electronic Privacy Information Center show that the TSA has received complaints from mistakenly flagged customers of all major carriers, which use a variety of software to process passengers.

One reservation system used by several airlines, Shares, uses "the same type of [name] matching that has gone on for 10 to 15 years -- actually longer," says Michael Hulley, an executive of Shares owner Electronic Data Systems Corp. He will identify only one method Shares uses: matching the first few letters of a name.

Another competitor of Sabre, Galileo, says it looks for exact matches on names or strings of letters. But Galileo officials try to spot No Fly List matches in advance of a flight and pre-clear passengers who clearly aren't the person on the list, says Chuck Barnhart, an official of Galileo.

Sabre won't disclose its current name-matching methods, but a spokeswoman, Kathryn Hayden, says: "Algorithms are not static -- they change, they are updated." Sabre says different airlines can use its software in different ways. "It's up to each airline to determine how they implement the government requirements for the No Fly Lists," Ms. Hayden says.

One carrier that uses Sabre software, Alaska Airlines, has more than its share of false No Fly List matches, judging by the records obtained by the Electronic Privacy Information Center. Of 34 complaints to the TSA where the airline was identified, 11 cited Alaska. Ms. Hayden says such anecdotal evidence doesn't prove Sabre's software "causes a greater number of false hits."

Barbara and Dennis Musante, a California couple, took their complaint up the Alaska Airlines chain of command after being delayed twice. Ms. Musante says an airline supervisor finally told her the first four letters of their last name matched a suspect, though they themselves weren't on the list. The TSA confirmed they weren't. In a letter, the TSA added that in its view, "the benefits of such measures far outweigh the inconvenience."

Mr. Musarra, the Alaska man who has faced many delays, has tried everything he can think of to clear his name once and for all. He got Sen. Ted Stevens to contact the FBI. He told local TSA people of how their boss in Washington, retired Admiral James Loy, once honored him for his work on an oil-spill cleanup exercise.

For his monthly flights, Mr. Musarra has developed a routine: Try to check via the Internet the night before the flight; get rejected. Arrive at the airport hours early, go to the self-serve kiosk; get rejected again. Go to the counter, wait while an agent calls a supervisor, wait more while officials take his I.D. to a back room to phone security officials.

Invariably cleared, he boards, but the clearance lasts just through the end of his round trip. Often he is bringing his son Tim home for a visit. Tim Musarra, 12, also sets off No Fly List alarms.

A college-age son, Aren, has the same problems, Mr. Musarra says.

Then there's Mr. Musarra's adopted son, Jonathan Paul Sung Ho Musarra, 15. A high-school wrestler, "Sungie" is the reason his teammates have to get up at 3 or 4 a.m. for morning flights to their meets. Because they buy group tickets, the 20-plus wrestlers, chaperones and coaches show up on the computer screen as No Fly List hits.

A spokesman for Alaska Airlines, Lou Cancelmi, says, "All of these false positive issues concern us greatly. We're absolutely committed to working toward mitigating all of them to the maximum extent possible." Recently, the airline began having employees scrutinize alarms generated by its computers in advance of flights, in hopes of clearing misflagged passengers.

That seemed to help Mr. Musarra on his last flight. The computer still flagged him; he found himself unable to check in via the Web. An error message told him he needed manual assistance. But when he got to the airport this time, Mr. Musarra received a boarding pass without the security review.

The TSA has been trying to get the message to airlines that they should focus on matches of full names, not just the last name, says James R. Owen, a TSA official in Juneau. Longer term, the agency is working on an advanced passenger pre-screening system known by the acronym of CAPPS II.

It will scour not only watch lists such as No Fly but also criminal records, credit-card transactions and identifiers such as address and date of birth to detect suspicious patterns. The TSA envisions it as "dramatically reducing" the number of people flagged. Privacy and civil-liberties advocates fear just the opposite -- that the increased ways to attract suspicion will result in even more passengers being wrongly tagged.

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Larry Musarra

