Bag Match—At Last

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Introduction

It is an honor to testify before the House Aviation Subcommittee about positive passenger bag match (PPBM). My interest in the subject dates back to 1996, when I was appointed Chair of the FAA Technical Team asked to investigate the feasibility of domestic PPBM. The centerpiece of our efforts was a 1997 experiment, in which PPBM as applied internationally was performed on domestic flights. The test was two weeks long, and involved eleven airlines, 50 city-pairs, 8000 flights, and 750,000 passengers. We described it as "the largest bag-match experiment in the history of aviation," in part because—so far as we knew—it was the only such experiment.

Domestic PPBM began last Friday, because of provisions in the 2001 Aviation and Transportation Security Act. I am elated by this development, and believe that it arrived not a moment too soon. Intelligent terrorists know that they are now unlikely to reach the cockpit, and that growing vigilance by travelers and crews makes sabotage less likely in the passenger cabin. Thus, had Congress not acted decisively with its 60-day screening requirement, the luggage compartment could well have become the most promising venue for destroying an aircraft.

It would be the understatement of the millennium to say that US airlines are not enthusiastic about PPBM. The CEO of one major airline warned in November 2001 that PPBM would force his carrier to reduce operations by 25%. That same month, an industry official estimated that bag match would add "zero" security benefit. These assessments, however, do not hold up well under scrutiny.

Criticisms of PPBM

It has been asserted that bag match would greatly disrupt airline operations. This charge, however, is not only unsupported by empirical evidence, but is strongly contradicted by such evidence. Our 1997 experiment indicated that, under usual conditions, US domestic PPBM would cause departure delays averaging one minute. More specifically, 1/7 of flights would suffer delays, which would average seven minutes apiece. PPBM would cost about 40 cents per passenger enplanement, and would require ***no*** reduction in flight schedules. The test fully considered connecting as well as originating flights.

More recent evidence about PPBM operations has consistently confirmed our findings. Ryanair, a low-cost European carrier with 25-minute airport turnaround times, maintains a superb on-time record despite the often-dreadful weather of Northwestern Europe. JetBlue and Frontier Airlines--which both implemented bag match recently--have reported short delays on perhaps 3% of their flights. PPBM is now required on all flights involving Washington's Reagan Airport, but we hear nothing about operational difficulties arising from the practice. Under PPBM, US domestic overwater flights to Honolulu and San Juan experienced bag-match departure delays averaging less than one minute. That outcome was striking because these routes are "hostile" to bag match: They are usually flown with widebody jets, and their passengers generally check bags and often connect from other flights.

It has also been asserted that PPBM offers no protection in itself against suicidal terrorists. That statement is absolutely true. But, historically, very few terrorists who have attacked airplanes have been suicidal. Those who sabotaged Pan Am 103, Air India 182, and UTA 772 were not present when these planes blew up; nor were those whose bombs brought down planes from Thailand to Colombia. The terrorists who plotted in the mid-1990's to destroy a dozen US jets coming home from Asia—a plot which apparently involved Al Qaeda—were not suicidal. (Neither was Timothy McVeigh.) Unless we view all acts of sabotage before September 11 as irrelevant, we should not discount the value of measures that deter nonsuicidal terrorists.

And, paradoxically, bag-match might help deter some terrorists willing to die. If such a terrorist checks a bag laden with explosives, PPBM forces him to proceed to the gate ready to board his plane. But, now and increasingly in the future, his checked luggage could also be inspected at the airport by other means. If such an inspection revealed his bomb, PPBM's restriction on his mobility might mean that he could quickly be located and arrested.

That circumstance is important because even someone willing to die in a successful explosion might be averse to life imprisonment for a failed one. Moreover, a group thinking of dispatching such a terrorist might be unnerved by the prospect that he might soon be under interrogation. The crucial point is that--***in combination with other forms of baggage screening***--bag match could be useful against some suicidal terrorists. It

cannot in its own right prevent their success, but it can greatly increase the price of failure.

Limitations of Baggage Screening

Of course, if other screening methods always worked and were always applied, PPBM would be superfluous. But they are not, and we should acknowledge their limitations in any discussion of baggage security.

One widely-used screening approach is hand searches of luggage. Clearly, such searches are better than nothing, but they are not foolproof. Explosive devices are not simply orange cubes that tick loudly; they can be concealed in all kinds of ways and be very difficult to detect. For example, one bomb intended for a jetliner was built into the frame of a suitcase, and had the thickness of wax paper. The plot was foiled by the extraordinarily skills of El Al, but one wonders whether a similar success could be expected at a US airport.

I have no doubt that the explosives detection (EDS) machines headed for all US airports are very good. But no one has suggested that they are perfect. Chairman Mica has noted that terrorists may be devising new explosives that EDS machines would not detect. And there is always the chance of human error in interpreting inspection results, a problem that could be exacerbated by a high false-alarm rate.

Some Recommendations

With these considerations in mind, I would make two recommendations to the subcommittee:

(1) Even when EDS machines are fully deployed, PPBM should be continued.

Absent bag-match, a terrorist could check a bag with explosives (probably having shown a fake ID), and then race from the airport. If his luggage eludes the EDS machine, his mission would succeed. More likely, the machine will detect his bomb; by the time it does so, however, he could already be in hiding. His mission has failed, but he has lived to kill another day.

Without PPBM to raise the consequences of failure, terrorists could view the EDS machine as a huge roulette wheel. They could continue to play the odds based on its error rate. And, if they persist, we can expect that, eventually, they will win. Especially because PPBM costs so little, it seems imprudent to give it up when the explosives detectors arrive.

(2) No checked bag should be exempted from PPBM because it has passed a screening test like a hand search.

The argument about EDS machines is even more potent for other screening methods, which are presumably less effective at detecting bombs. If he believes that his bomb will elude a hand search, the nonsuicidal terrorist has no desire to board the plane. PPBM, therefore, is sometimes a backup system that can save the day when physical screening would not.

PPBM for Connecting Passengers

Beyond these general issues is a controversy that has flared in recent days. As introduced last week, PPBM is required for originating passengers but not connecting ones. This distinction has some unintended geographic consequences. It means that, while nearly everyone boarding at Providence, Austin, or Sacramento will have full PPBM on the flight, virtually no one boarding at Atlanta, St. Louis, or Charlotte will do so. The last three cities, after all, are hubs that handle lots of connecting traffic.

More ominously, an "originating only" policy could allow a terrorist to travel with a suitcase bomb on the first leg of the flight, but to absent himself when it explodes on the second leg. Such a grim scenario may have historical precedent. In 1989, a French DC-10 from Zaire to Paris (UTA 772) exploded over North Africa. While the exact circumstances of the crash are not known, the official inquiry pointedly raised the possibility that a passenger checked a luggage bomb from Zaire to Paris and deboarded at an intermediate stop before the explosion.

The airlines strongly oppose connecting-PPBM, contending that it could bring chaos to hub operations. But an important distinction must be made. During extreme weather conditions that cause cancellations, delays, diversions and reroutings, a rigid application of bag-match could make a terrible situation even worse. But during normal conditions, connecting PPBM is not terribly onerous. The 1997 domestic test showed that, of every 2000 connecting passengers, only one with a checked bag was missing at departure time for his outbound flight. In those rare instances when a bag-pull was required, it delayed the flight seven minutes on average. Indeed, most observed delays during the experiment were tied to *originating* passengers.

Some numbers offer us some perspective. About 75% of the passengers boarding US jets are originating passengers. (Even travelers making connections are originating passengers on their first flights.) Thus, the present PPBM regime already covers 3/4 of jet passengers. If PPBM were extended to connecting passengers during normal conditions, the coverage rate would approach 95%. For difficult situations at hubs, PPBM might well have to be modified. If performed skillfully, however such modifications could go a long way towards avoiding undue delays without compromising passenger safety.

I therefore reach a third recommendation to the subcommittee:

(3) PPBM should be extended as rapidly as possible to domestic connecting passengers.

Especially because the "originating only" policy has been so widely publicized, its continuation poses an unknown degree of danger. The policy is based on the dubious premise that, if we can't readily do connecting bag-match in all conditions, we shouldn't do it in any. We could easily extend bag match to the heavy majority of on-line connecting passengers, whose inbound and outbound flights are essentially on time. Harder cases--involving irregular hub operations or interline bags—could be accommodated by an imaginative policy that allows some flexibility.

Final Comment

There is every reason to fear that terrorists are still fascinated by aviation, and that their further success against airplanes would horrify the American people, devastate the airline industry, and gravely harm the national economy. As with earthquakes, an aftershock to September 11 could cause more damage than the original event itself. But that calamity is less likely now because bold decisions by Congress have yielded positive bag match. After a British victory early in the Falklands War, Margaret Thatcher admonished journalists to "just rejoice at that news." All Americans can rejoice that, at long last, unaccompanied checked bags with their attendant dangers are disappearing from the skies over our country.

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