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Flight	Destination	Class	Time	Status	Gate
9C902	FRANKFURT	05:00	05:00	CANCELLED	
9W759	FRANKFURT	05:00	05:00	CANCELLED	24402
9W758	FRANKFURT	05:00	05:00	CANCELLED	9300
9W8121	FRANKFURT	05:00	05:00	CANCELLED	LY30
9W8121	FRANKFURT	05:00	05:00	CANCELLED	LY30
LY303	ISTANBUL	05:00	05:00	CANCELLED	9302
LY301	MUNICH	05:00	05:00	CANCELLED	LY303
LY302	MUNICH	05:10	05:10	CANCELLED	LY303
LY303	MUNICH	05:10	05:10	CANCELLED	LY303
LY304	MUNICH	05:10	05:10	CANCELLED	LY303
LY305	MUNICH	05:10	05:10	CANCELLED	LY303
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LY396	MUNICH	05:10	05:10	CANCELLED	LY303
LY397	MUNICH	05:10	05:10	CANCELLED	LY303
LY398	MUNICH	05:10	05:10	CANCELLED	LY303
LY399	MUNICH	05:10	05:10	CANCELLED	LY303
LY400	MUNICH	05:10	05:10	CANCELLED	LY303

Photo by: TOVAH LAZAROFF

Was the FAA's ban on flights to Israel warranted?

By AWI FEDERGRUEN AND MOSHE KRESS
04/08/2014

The State Department asserted that the ban was based “solely on the security and safety of American citizens, period.”

On Tuesday, a Hamas rocket landed within two miles of the main terminal of Ben-Gurion Airport. It was part of a relentless 15-day barrage of rockets fired into Israel from the Gaza strip, at the rate of close to 100 rockets per day. With the exception of a far smaller airport near Eilat, Ben-Gurion is the only international airport in a country that, for all practical purposes, is accessible only from the air and the Mediterranean sea.

A few hours later, the US Federal Aviation Administration imposed a ban on all flights into and from Israel. The FAA's decision was followed by a similar ban by the European Safety Agency governing European airlines. It was extended on Wednesday and subsequently lifted, presumably after the FAA “carefully reviewed both significant new information and measures the government of Israel is taking to mitigate potential risks to civil aviation,” according to a statement posted on the agency's website.

Senator Ted Cruz had suggested that, given the above geographical situation, the ban was tantamount to an economic boycott of the country. As illustrated by his recent ban on large sodas, former New York mayor Michael Bloomberg hardly shies away from government interventions to protect residents against real or perceived risks. However, before boarding an EL AL flight to Israel, Bloomberg stated: “The flight restrictions are a mistake that hand Hamas an undeserved victory and should be lifted immediately. I strongly urge the FAA) to reverse course and permit US airlines to fly to Israel.”

The State Department asserted that the ban was based “solely on the security and safety of American citizens, period.”

But, if the passengers' security was the sole consideration, was the ban warranted? Was, in the midst of the rocket barrage, the risk incurred by passengers on a flight to or from Israel significant enough to justify the political and economic consequences? An elementary calculation shows that the odds of any given plane being hit, while landing, on the ground or taking off from Ben-Gurion, is of the order of one in a million. (The odds of hitting a plane, in midair, are at least an order of magnitude smaller than that.) Moreover, that estimate is based on several worstcase assumptions: There is no doubt that Ben-Gurion is a prime target for Hamas. However, due to limitations inherent to their rocket arsenal, no more than one such rocket has been dispatched, per day, in the general direction of the airport. The rockets cannot be targeted with precision. A bestcase scenario for Hamas, and therefore a worst-case scenario for passengers visiting Israel is that the Tuesday rocket experienced a maximum possible deviation from its intended target. That scenario implies that any future rockets targeting the main terminal would land anywhere within a three-kilometer radius of it. The odds of hitting even a large plane, such as a Boeing 777, within a circle of that radius, are roughly three in 100,000. (A Boeing 777 has a body and wing surface area of some 1,000 square meters).

In addition, as with other densely populated parts of the country, the airport is undoubtedly protected by at least one Iron Dome unit, and the missile defense system has, since 2012, consistently been reported to intercept 90 percent of incoming rockets. However, we assume (again conservatively) that this effectiveness

measure is grossly overestimated, so that a single Iron Dome unit is capable of intercepting only half of its targets.

Finally, any given plane spends no more than two out of every 24 hours on or near the ground. Multiplying the odds of these independent events results in the above worst-case risk estimate of one in a million.

Many readers may be surprised by this result. Among other psychologists and behavioral economists, Nobel Prize winners Daniel Kahneman and Amos Tversky have documented that most people lack the intuition to assess the order of magnitude of risks, in particular those associated with very rare events. Our perceptions are additionally distorted by the fact that the media give continuous coverage to airplane fatalities and terrorist attacks, anywhere on the globe, while fatal car accidents or lethal urban shootings, in our own backyards, fail to be newsworthy.

Yale Professor Edward Kaplan estimated that, at the height of the 2001 intifada in Israel, the annual personal risk of death from terrorism was 16 in a million, more than 10 times greater than the current odds of a plane being hit by a rocket at Ben-Gurion. More surprisingly, using the most recent Statistical Abstract of the United States report, between 2000 and 2010, the average personal death risk from a motor vehicle accident in the United States was 133 per million, roughly 100 times the risk the FAA was supposedly protecting US passengers against with its ban on Ben-Gurion. The FAA should have known better!

Awil Federgruen is a professor at the Graduate School of Business of Columbia University.

Moshe Kress is a professor at the Operations Research Department of the Naval Postgraduate School.



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