

On the Improbability of the London Bombings/Bombing Simulations of July 7, 2005

A terror exercise was being held on July 7, 2005, which simulated bombings in London Underground stations, while the very same stations were actually being struck by bombs that morning, according to Peter Power, a former senior officer of Scotland Yard, and at the time the managing director of Visor Associates, a crisis consulting company. The British Broadcasting Corporation interviewed Mr Power that day.

Peter Power: "... because at half past nine this morning we were actually running an exercise for a over, a company of a thousand people in London based on simultaneous bombs going off precisely at the railway stations that happened this morning, so I still have the hairs on the back of my neck standing upright."

BBC Announcer: "To get this quite straight, you were running a, a, an exercise to see where, how you would cope with this and it happened while you were running the exercise?"

Peter Power: "Precisely, and it was a about half past nine this morning. We planned this for a company. For obvious reasons I don't want to reveal their name, but they're listening, they'll know it. And we had a room full of crisis managers for the first time they met and so within five minutes we made a pretty rapid decision this is the real one. Ah, and so we went through the correct, the correct drills of activating crisis management procedures to jump from slow-time to quick-time thinking and so on."

In another interview that day he stated, "And we chose a scenario with their (the company's) assistance." On July 10, 2005 the Canadian Broadcasting Corporation aired a brief interview with Mr Power.

CBC Announcer: "It's just by chance that the meeting comes days after the bomb attacks in London. While most of the world was shocked by the events, Peter Power's company was actually conducting subway disaster exercises in London Thursday morning."

Peter Power: "We were running an exercise on the morning of the bombings, which was almost identical to the scenario which actually happened."

To calculate the improbability of the July 7, 2005 London Underground bombings/bombing simulations as having occurred independently, three of their "coincidental" factors -- their locations (where), their correspondent nature (what) and their synchronization (when) -- must be considered. The improbabilities of these individual factors must be multiplied together to determine the overall improbability, which due to inherent unknowns can only be roughly estimated.

Locations -- the selection of the same stations, a subset of potential targets

C = combinations (without regard to order)

P = permutations (with regard to order)

n = number of different "objects" (n = 275 different London Underground stations)

r = number of "objects" in group (r = 3 stations bombed)

$$C = \frac{n!}{r!(n-r)!} \quad P = n(n-1)(n-2) \dots n-(r-1) \quad r! = r(r-1)(r-2) \dots 1$$

Note: "... " = continue sequence until last term equals this value

There are 275 different Underground stations (source: "VisitBritain - Your official travel guide to Britain"). Three stations were bombed. Peter Power stated that bombings were being simulated **"precisely at the railway stations that happened this morning."** Since no information was provided as to the sequence of the simulated bombings, the appropriate calculation is of the possible combinations (possible selections without regard to order) of three "objects" out of a larger group of 275 different "objects." Per the first formula above, the total number of combinations equals the total number of permutations (possible selections with regard to order) divided by the number ways the objects in the selected group can be arranged.

The total number of permutations of groups of three out of 275 different "objects," here London Underground stations, is $275 \times (275-1) \times (275-2)$ or $275 \times 274 \times 273$, which equals 20,570,550. To determine the total number of combinations divide this number by the number of ways three "objects" can be ordered, which is 3 factorial (3!) or $3 \times 2 \times 1$ or 6 (illustrated by abc, acb, bac, bca, cab, cba).

The total number of combinations, the number of permutations (20,570,550) divided by 6, equals 3,428,425. Assuming for the moment that all stations would be of equal likelihood of selection, the odds of the bombing simulators choosing the same three stations as the actual bombers is 1 in 3,428,425.

If only the central or the busiest stations were to be considered for selection, the chances of choosing the same stations would significantly improve, but would still remain highly, highly improbable (~40,000 to 1 for the 63 central London stations).

These same odds apply whether or not the bombing simulators were present in the Underground stations. For the purpose of these calculations, it matters only that they selected the same stations. One need not choose winning lottery numbers at the lottery center where the winning numbers are determined.

Furthermore, since potential targets for attack are not restricted to the Underground system, the above calculations ignore, hence do not factor in, the unlikelihood of attacks being restricted to its stations. The activity could have been "sited" at government offices, at notable hotels, at department stores, at bridges over the Thames, at tourist attractions in general, or at virtually any other set of locations, thematically associated or not, inclusive or exclusive of the Underground transit system. If all prospective targets were to be considered, as they should be, the odds rise to a level nearly incomprehensible.

The correspondent nature of the events -- based on the simultaneous detonation of bombs

Here "simultaneous" refers to the nature of the events, as in "we were actually running **an exercise . . . based on simultaneous bombs going off**," not to the synchronous timing of the real and of the exercise bombings (considered below). Both the bombers and the planners of the exercise were engaged in an activity that not merely involved, but was "**based on**" -- actually or conceptually -- simultaneous bombings.

Now accepting the general location, the Underground system, as a given, please consider the following (for context, rather than for computational purposes): On an average day over a million people use the London Underground system to be transported (2.7 million "passenger journeys" per day). Thousands more are there to operate the system itself and to staff affiliated businesses and services. It can be safely assumed that on most days no one at all, whether present or not, selects even a single station, any station, for the purpose of carrying out simultaneous bomb attacks, whether real or simulated.

The same degree of correspondence, between the actual and the simulated events, would not have been attained had the plotters planned to detonate just one bomb, or to detonate several over time, or had chosen to wreak havoc in any other fashion. Nor would the correspondence have been as nearly equivalent had the drills simulated a life-threatening fire, a car derailment (one occurred yesterday injuring 37 people), a hostage situation, a release of toxins, an electrical transformer explosion, a station flooding, or a tunnel collapse, nor any of those such events in combination, simultaneously occurring. The odds against two unrelated groups, as opposed to one group or two related groups ("**We planned this for a company**;" "**we chose a scenario with their assistance**"), sharing this particular, "**almost identical**" correspondence, "**based on simultaneous bombs going off**," are very high.

The simultaneity of the events

The improbability of the simultaneous aspect of these events, occurring during one brief period on the same morning, can only be estimated. Any choosing of a time period over which to calculate the odds of simultaneity would be arbitrary. Since there are no data to restrict it from being of long duration, the period would necessarily encompass years or even decades, as neither the existence of the Underground, nor the capacity to bomb or to simulate a bombing are recent developments. For example, if the period of the previous 20-years (dating back to July 7, 1985) were selected and the "simultaneity" were to be approximated to the nearest hour, then the odds against concurrence of two unique events (one real event, one drill) would be over 175,200 to 1.

Likewise, the degree of "simultaneity" is important to the calculation. If, rather than the events being considered to have happened, not merely within the same hour, but within the same half-hour ("**at half past nine this morning**") or within the same six minutes, then the odds would double or increase by a full order of magnitude (10x), respectively. If one were to take Mr Power's comment, "**so within five minutes** we made a pretty rapid decision this is the real one," as being accurate, the odds over a twenty-year period, continuing the previous example, would be over 2,102,400 to 1. As the precision of the timing of the two events increases, so do the odds against their concurrence -- geometrically -- approaching infinity, if true literal instantaneous simultaneity were to obtain.

If the selection of time-of-day were to be weighted in favor of busier traffic periods (noting that "**half past nine**" is at the very end of "rush hour"), the improbability factor would be reduced somewhat, but insufficiently to render the co-occurrence of the events remotely likely. Likewise, if such exercises were numerous (here again the pertinent data is lacking) the odds would decline proportionally. Although Mr Power's statement, "we had a room full of crisis managers **for the first time they met**" is by no means conclusive of exercises being rare, it does lend further support to the simultaneous nature of these events as being extremely improbable.

Conclusion

The overall improbability of these events occurring independently is the statistical product (each factor multiplied by the others) of the three extraordinary unlikelihoods: selection of the same locations, the correspondent nature of the events and their simultaneity. The odds against such "coincidental" phenomena, incalculable with mathematical precision, are so great as to be barely imaginable. Of course, if the planners of the simulated and of the actual bombings are related, these improbabilities vanish. The company, which hired Visor Associates and helped them choose this scenario, has still not been publicly identified.

∴ The persons responsible for the simulated-bombings exercise should be considered the primary suspects in the actual bomb-attacks until the innocence of those persons be firmly established.