

I've got problems believing the "how" of "How it happened".

Short version: No matter how you slice it, Dick almost blew this guy's head off. N.B. I wouldn't be surprised if, since the target is quite old (esp. to be running around hunting), he has other health problems which might be exacerbated by this, leading to his demise. Dick may join Aaron Burr in the Killer-VP category, yet.

Long version: I conclude the target was within 10 or 15 yards, at most, of Dick and possibly as close as 5 yards. My reasons for saying this are algebraic.

Seems like the press reports the target had 40 pellets taken out of him. The press also reported Dick was using a 28 gauge - a good quail gun if you're dedicating one gun to quail. He's a serious wingshooter and wealthy (28 gas are not common and usually only really expensive models), so we can safely assume he does. (N.B. The gauge of a shotgun is a number designating the number of equal-sized lead spheres which could be made from a pound of lead; the diameter of those spheres is then the diameter of the shotgun's bore. A 12 gauge bore is 0.730 inches, a 20 gauge about 0.57 inches. The higher the number, the smaller the bore diameter.)

A quick visit to Cabelas' ("The World's Largest Outfitter") web site reveals the standard load in a 28 ga. is about 3/4 to 7/8 ounce of shot, up to 1 ounce. The standard quail shell uses small birdshot, #8 or #9. There's about 410 # 8 pellets in 1 ounce (more pellets if it's #9, with shotgun pellets the bigger the number (a) the smaller the pellet and (b) therefore the more per ounce).

(Funny, Wikipedia's acting up right about now and being inaccessible....)

To keep the math easy, let's say one ounce, about 400 #8 pellets. This is also an assumption favorable to the shooter because using a lighter load (less pellets) would indicate closer/more accurate firing into his target. I.e., we know how many pellets hit the target; to get that number for a lighter load, the shooting would have to have been more accurate or from a closer range. Because shotgun patterns spread. Further, assuming one ounce of pellets allows us to remove the possibility of misreporting the identity of the gun, that the shotgun was 20 gauge instead of 28, because a very standard quail load for a 20 gauge is also 1 ounce of #8 pellets. On the other hand, if Dick was using #9 pellets, there would be a significant increase in the number of pellets, to about 600 per ounce.

So, about a tenth of the load in a standard 28 ga. #8 quail shell wound up in the target. So far so good, but the reports also say the pellets were all in the guy's face, shoulder, neck and chest, but not in his eyes. It seems like he was caught pretty squarely, and at close range if there was a demarcation like that. There would likely be a rougher edge to the pattern if it was at longer range.

This area on the target's body is an area roughly the size of one dinner plate, all in all  $((12/2)*(12/2)*3.14)= 112$  in. sq. Note, this is also an assumption favorable to the shooter. If we assume the impact area is smaller than the rough equivalent of a dinner plate (and it probably is), that leads to the conclusion that the pattern was more concentrated when it struck. On the other hand, for areas larger than a dinner plate it makes the distances farther. I'm not going to do a

sensitivity analysis, but I'll thumbnail it at about 3/4 of a percent change in distance per square inch in area change.

Standard pattern density for a 28 ga would likely be about 40% of the pellets inside a 30 inch diameter circle at 40 yards for a cylinder bore choke and 50% inside the same 30 inch circle at 40 yards for an improved cylinder choke. These chokes are favored for quail, as they are more open, i.e., the pattern is spread more widely for a small, speedy target like quail. (See, e.g., <http://www.ssaa.org.au/newssaa/101-StoriesReviews/shotguns/patterning.html>) Tighter patterns and chokes (modified = 60% in the circle and full = 70% in the circle) are used for larger birds, like pheasants and such. At 40 yards, all the pellets should fall within a circle of 80 inches diameter, as a rule of thumb is that shot patterns expand radially about one inch per yard downrange. 40 yards = 40 inches radius = 80 inches diameter.

For what it's worth, as a side note (but it's important), a 30 inch diameter circle at 40 yards, i.e., the pattern circle, looks a little smaller than (subtends a slightly smaller angle than) a dime held at arm's length. And that isn't big.

Here's the math:

30 inch = 2.5 ft.

40 yd. = 120 ft.

X diameter hand-held at arm's length

30 inch distance eye to object hand-held at arm's length

$(2.5 \text{ ft. dia.}/120 \text{ ft. dist.}) = (X \text{ in. dia.}/30 \text{ in. dist.})$

solve for X:  $X \text{ in.} = 30 * 2.5 / 120 = 75 / 120 \text{ in.} = .625 \text{ in. (i.e. } 5/8 \text{ inch)}$

Diameter of a dime = approx. .710 inches

Now, on to calculating the density of shot in the patterns.

Doing the math for both patterns, inside the pattern circle:

Cylinder:  $(0.40 * 400) / (15 * 15 * 3.14) = (160) / (225 * 3.14) = 1 \text{ pellet} / 4.41 \text{ inches sq. @ } 40 \text{ yds.}$

Improved cylinder:  $(0.50 * 400) / (15 * 15 * 3.14) = (200) / (225 * 3.14) = 1 \text{ pellet} / 3.53 \text{ inches sq. @ } 40 \text{ yards.}$

Outside the pattern circle:

cyl.:  $((1 - 0.40) * 400) \text{ pellets} / ((40 * 40 * 3.14) - (15 * 15 * 3.14) \text{ in sq.}) = ((.60) * (400) \text{ pellets}) / ((1600 - 225) * 3.14 \text{ in. sq.}) = (240 \text{ pellets}) / (4317.5 \text{ in sq.}) = 1 \text{ pellet} / 17.98 \text{ inches sq. @ } 40 \text{ yds.}$

imp. cyl.:  $((1 - 0.50) * 400) \text{ pellets} / ((40 * 40 * 3.14) - (15 * 15 * 3.14) \text{ in. sq.}) = (200 \text{ pellets}) / (4317.5 \text{ in. sq.}) = 1 \text{ pellet} / 21.58 \text{ inches sq. @ } 40 \text{ yards.}$

This exemplifies the purpose of choking a shotgun; it concentrates a much higher percentage of the pellets in a specified area, giving a better chance of hitting the target.

Now, we need to look at the actual density of pellets removed from the target's body. 40 pellets removed from his face, shoulder, and neck, an area approximately the size of a dinner plate, about 112 square inches. Once we calculate that density, we compare it to the pattern density of the shell. This can give us a fairly good idea of how far away the shotgun was when fired. N.B. Some pellets may have grazed his face, fallen out of a wound or even bounced off, such that a higher number of pellets actually struck him. Only those reported as being removed are being counted for purposes of this analysis.

The actual target density is 40 pellets/112 in. sq. or 1 pellet /2.8 in. sq.

If he hit the target with the center of the pattern, then the shot density in the center of the pattern yields the following ranges:

Cylinder: 25.4 yd.

Improved Cylinder: 31.73 yd.

Here's the math:

Cyl. 1 pellet/4.41 inches sq. @ 40 yds.

$((1/2.8)/(1/4.41)) = 4.41/2.8 = 1.575$  times closer

$40/1.575 = 25.4$  yd.

Imp. Cyl. 1 pellet/3.53 inches sq. @ 40 yards.

$((1/2.8)/(1/3.53)) = 3.53/2.8 = 1.261$  times closer

$40/1.261 = 31.73$  yd.

If he hit the target with the part of the patterns outside its center (i.e., the pellets which would strike the patterning target outside the 30 inch circle - grazing the target with the edge of the pattern, as it were, which would be more consistent with an accidental swing into the other hunter), then the shot density in that outer part of the pattern yields the following ranges:

Cylinder: 6.23 yd.

Improved Cylinder: 5.19 yd.

Here's the math:

Cyl. = 1 pellet/17.98 inches sq. @ 40 yds.

$((1/2.8)/(1/17.98)) = 17.98/2.8 = 6.421$  times closer

$40 \text{ yd.}/6.421 = 6.23$  yd.

Imp. Cyl. = 1 pellet/21.58 inches sq. @ 40 yards.

$((1/2.8)/(1/21.58)) = 21.58/2.8 = 7.707$  times closer

$40 \text{ yd.}/7.707 = 5.19$  yd.

There are a lot places for imprecisions to creep into my estimate but I don't think they change the result appreciably - I don't know the choke (probably improved or even cylinder in a quail gun;

cylinder makes for a more open pattern than improved, which then leads to a closer ultimate range to get that number of pellets), don't know the shot size (smaller shot yields longer distance to ultimate target), don't know the exact load in his shells (could possibly be more or less shot)(heavier load leads to longer distance to target), don't even know for sure that the gun was 28 ga (a 20 ga would likely have a heavier load and therefore more pellets - longer distance to ultimate target), and I don't know whether he gave him only one shot or both barrels. Moreover, I don't know how many pellets actually struck him - all I know is that the press reported 40 were removed.

So, my best estimate is as follows: Dick nearly blew this guy's head off.

If it was an accident or a quick swing such that the target was caught with the edge of the pattern, then this guy was within 5 to 10 yards when he was shot, maybe less, possibly a little more. Dick came within a few inches of blowing this guy's head off, because the pattern at 5 or 10 yards would only be 10 or 20 inches across. The center of the pattern at 5 yards would be 4 inches across and the edges a donut another three inches across; at 10 yards the center would be 8 inches across and the edges another 6 inches. Given the size of a human body, he didn't miss by much. And, remember, as discussed above the size of the pattern circle is really tiny - a dime held at arm's length.

If on the other hand the center of the pattern struck the target, then (a) he was possibly as much as 31 yards away, and (b) it was far less likely to have been a purely accidental or grazing shot. The target would have to have been more centered in the sight picture to be struck with the center of the pattern. Remember the size of the pattern circle. The same obtains: Dick came within a matter of inches of blowing this guy's head off.

I'm sure the prisons of Texas have any number of inmates who are serving lengthy terms for pointing and firing so cavalierly, even if their vics didn't die.. After all, pointing a shotgun in the direction of another human and shooting evinces an intent to kill. That's the law in NJ.

Anyone with a basic knowledge of shotguns and algebra can do this analysis.

Now, how you can be tramping through open Texas grasslands chasing quail - with lots of people present - and not be cognizant of a fellow hunter within 5 to 10 or even 30 yards shows nothing good for Dick. It's either a shocking lack of situational awareness - which means he shouldn't be hunting - or, a pretty cavalier attitude about turning and firing (particularly up-sun, as is claimed to be the case), or a real bloodthirstiness that won't let even a single quail get away, or that the story of how this happened is bullshit and Dick tried to whack him and make it look like an accident.

Besides, the whole story about another covey of quail simply ignores hunting etiquette and the way one hunts quail with dogs (and these guys would surely have had dogs; rich guys hunting on someone's land either bring in their own dogs, or hire a handler with well-trained dogs, or the owner provides them and the handler; viz. Tom Wolfe's "A Man in Full" has a nice vignette on quail hunting). The dogs work up to a covey and everyone's aware of when they stop because the

dogs wear bells that stop ringing when they go on point or stop for the covey. Then the hunters take positions and work in to the covey, often taking turns on who shoots first and allocating fields of fire, even if only by recognition of each other's positions relative to each other. Part of the rush of quail hunting is the not knowing when the brush will erupt with 10 or 20 birds flying in all directions at once, and the need for action when they do. Besides, in hunting this way, one can (at least in theory) circle around the covey to avoid the up-sun shot. The dogs locate it and hold their point; quail are prized precisely because they hold, then flush (as opposed to pheasants, which tend to run).

The thing courteous etiquette-observing hunters do is help their fellow hunter find his downed birds. It's a cooperative effort and part of the comradeship or collegiality hunting is supposed to engender. Especially if the other hunter is older than you (a concession to old guys' lessened physical fitness, if nothing else.) That Dick left his target to find his own bird was rude enough.

For one hunter to walk up to a new covey and not wait for his hunting companion to catch up so they can both work the covey when it rises, enjoy the way the dogs do their thing, and make sure they can both shoot safely is just rude. Beyond the pale in my book. In addition to being very unsafe. Hogging a covey like is alleged to have been done is enough to get one never invited again, if not end the hunt right there. It's a real breach of etiquette in my book. For Dick to have done this, grabbing a covey for himself, as a guest of the man he ultimately shot, shows me more about his character than anything else. The Brits used to have a term about men, to summarize character in a phrase: "He's someone you'd go tiger-hunting with" meant he was of solid, trustworthy character. I don't think I'd hunt anything with Dick.

Rule 1: Every gun is loaded and it should be treated that way.

Rule 2: Never point a gun at anything you don't want dead.

Rule 3: Always be sure of your target. (corollary to Rule 2).

Rule 4: Always make sure no one is in your field of fire, especially downrange of your target (corollary to Rule 2).

Rule 5: There are a lot of other game birds, but not a lot of hunting companions. If there is any doubt, pass on the shot.

Rule 6: The Golden Rule applies in the field, too. You're a guest here; be a good one.

And for those who claim this is just an attempt to beat up on Dick, let's remember all the bullshit that surrounded republican claims a few years ago about how Vince Foster's body got to the park and Hillary's purported involvement in that.