

Columbia: the mystery deepens

Jim Fetzer (READER WEEKLY 13 February 2003, pp. 12-13, expanded)

When the Columbia space shuttle fell apart, I was reassured that the engineers studying the disaster appeared to have a firm grasp of the principles of scientific reasoning. The shuttle program manager, Ron Dittmore of NASA, explained that, given this occurrence, they were going to proceed systematically, listing every conceivable scenario of what could have caused this problem, no matter how remote, then gather up all the available evidence and see which alternatives have the most support and which can be excluded, where the final stages reveal the most likely explanation for the phenomenon. This is sometimes called "fault tree analysis" (William Broad and Andrew Rivkin, "Engineers List All the Ideas, Striking Them One by One", *The New York Times*, 6 February 2003).

Regular readers who have followed my columns on the death of Paul Wellstone (READER WEEKLY 28 November 2002, 2 January 2003, 9 January 2003, and 16 January 2003) are aware that I have employed the same methodology by the application of (what is known as) inference to the best explanation. When you encounter a puzzling phenomenon, such as the plane crash), enumerate the possible alternative explanations (mechanical failure, pilot error, poor weather, and so on), evaluate those hypotheses in light of the available evidence (no mechanical problems found, pilots were well-qualified, the weather was not bad, and so on), and ascertain the most likely explanation (which is the hypothesis that, if true, would confer the highest probability on the evidence, taken in its totality).

When we follow scientific practice and explore all the possible alternative explanations in the case of the Wellstone crash, like any other, we must adhere to the principle of total evidence, which insists that, in attempting to arrive at the truth, you must base your reasoning on all the available relevant evidence. You are not allowed to use the method of selection and elimination, selecting the evidence that agrees with a predetermined conclusion and eliminating the rest. That technique is commonly employed by used-car salesmen, defense attorneys, and politicians. We now have a cell phone phenomenon that

suggests the cause of the crash may be EMP weaponry. When we use scientific standards of reasoning, the available evidence tends to support the inference that the plane might have been intentionally brought down. The Columbia case looked simpler to understand.

Initially, the most plausible explanation appeared to be that a section of foam insulation that had separated from the booster rockets and hit the left wing of the space shuttle had damaged the tiles that are so crucial to the dissipation of heat upon reentry. That had sounded so reasonable to me that the only question bothering me was why NASA, --which had to have known there was a problem, given that Columbia, like other space shuttles, is covered with sensors feeding real-time streams of data back to Houston-- had not done anything to cope with it. I thought that was odd, but was inclined to dismiss my concerns on the grounds that perhaps there was nothing NASA could do.

That evening, however, when I checked my email, I discovered a report from David Perlman, Science Editor at *The San Francisco Chronicle* (2 February 2003), describing the discovery of an amateur photographer who photographs the space shuttle when he has a chance. According to Perlman, he had "captured five strange and provocative images" just as Columbia was reentering Earth's atmosphere. The five pictures taken with a Nikon-880 digital camera on a tripod revealed a bright electrical phenomenon that flashed along the track of the shuttle's passage. "They clearly record an electrical discharge like a lightning bolt flashing past, and I was snapping the pictures almost exactly . . . when the Columbia may have begun breaking up", the photographer said.

Perlman explained that the photographer had invited *The Chronicle* to send someone out to view them. According to Perlman (who is reporting his personal observation), "They show a bright scraggly flash of orange light, tinged with pale purple, and shaped somewhat like a deformed L. The flash appears to cross the Columbia's dim contrail, and at that precise point, the contrail abruptly brightens and appears thicker and somewhat twisted as if it were wobbling". The photographer, who declined to allow

himself to be identified, added, "I couldn't see the discharge with my own eyes, but it showed up clear and bright on the film when I developed it", and did not speculate on its origin (<http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2003/02/02/MN221641.DTL>).

I was stunned. The description reminded me of those I had read about EMP weapons. Even TIME has reported on the availability of one class of EMP weaponry--high-powered microwave weapons, man-made lightning bolts--that are available now for the war in Iraq: "HPMs can unleash in a flash as much electrical power--2 billion watts or more--as the Hoover Dam generates in 24 hours. Capacitors aboard the missile discharge an energy pulse--moving at the speed of light and impervious to bad weather--in front of the missile as it nears its target. That pulse can destroy any electronics within 1,000 ft. of the flash by short-circuiting internal electrical connections, thereby wrecking memory chips, ruining computer motherboards and generally screwing up electronic components not built to withstand such powerful surges. It's similar to what can happen to your computer or TV when lightning strikes nearby and a tidal wave of electricity rides in through the wiring" (<http://www.time.com/time/covers/1101030127/nmicro.html>).

I was so alarmed that I emailed the reporter for *The San Francisco Chronicle* that night, suggesting that this phenomenon might have been caused by EMP weapons and giving several links to their description. I also recommended that he should make multiple copies of his images and distribute them widely. I well knew that, in the case of the death of JFK, the government had vacuumed up virtually every photograph and film taken in Dealey Plaza during the assassination, most of which were never returned to their owners. The FBI even stationed agents at the photo labs around Dallas for two weeks thereafter, where they confiscated any related photographs, leaving a card in their place, a copy of which may be found in Richard Trask, *Pictures of the Pain* (1997).

Other news about these strange photographs found their way to my desk, including Sabin Russell's "Mysterious Purple Streak is Shown Hitting Columbia 7 Minutes Before It Disintegrated" (*Common Dreams News Center*, 5 February 2003) and Joe Kovacs'

"NASA probes 'electric zap' mystery photo" (WorldNetDaily, 5 February 2003; http://www.worldnetdaily.com/news/article.asp?ARTICLE_ID=30889). These were rather reassuring insofar as they reported that NASA had sent a former astronaut, Tammy Jernigan, to San Francisco to take a look at these photographs. As Russell reported, "A Chronicle reporter was present when the astronaut arrived. First seeing the image on the screen, she had one word: 'Wow!'" The camera was to be flown to the Johnson Space Center in Houston by a NASA T-38 jet the following morning. So I thought that this possibility was at least going to receive the thorough attention that it deserved.

I was also reassured by an article in *The New York Times* (6 February 2003) which explained that none of the theories NASA was considering appeared to be adequate. In "Range of Shuttle Theories, but None That Seems to Fit All the Facts", James Glanz reported that the disintegration of the Columbia had turned into a scientific mystery. He discussed four different hypotheses and why they were not panning out. The first, (h1), the foam-insulation-damaging-the-tiles, appeared to be inadequate because the computer simulations have failed to show how the insulation could have done enough damage to cause the catastrophe. Data from the Columbia's sensors, moreover, have not shown how the temperatures that were generated could have been sufficient to melt the Columbia's aluminum skin during reentry. And video images that appear to show parts of the shuttle breaking off do not seem consistent with this explanation.

Another hypothesis, (h2), would have a tiny meteorite hit Columbia's wing, knocking out sensors and leaving the craft vulnerable to the heat of reentry. NASA officials said that this was most unlikely, because shuttles had been hit in the past by these small objects and not caused serious damage and that chances of this were "remote".

A third hypothesis, (h3), suggests that the irregularities in the shuttle's tiles caused by the damage might have produced severe turbulence during reentry. But this, in my opinion, cannot be taken seriously, since the atmosphere is so thin at this point that a problem of this kind should have manifest itself gradually during descent, not

so very abruptly during reentry. So neither (h2) nor (h3) should be taken seriously.

A fourth hypothesis, (h4), suggests that heat moving through the wings caused by the tile damage had caused explosive charges that are designed into the craft to force the wheel wells to open were they to stick at landing to explode. According to Glanz, "All of these alternatives are regarded as long shots by NASA engineers, who remain puzzled by the craft's demise." While the shuttle program manager, Ron Dittmore, said during a news conference in Houston that no single theory under consideration appeared to explain all the evidence, he will also be unwilling to rule any of them out or to identify one as the most promising at this point in time. The remaining alternative, (h5), was implied by his question, "Was there another event that escaped detection? As I mentioned before, we're trying to find the missing link. We're focusing our attention on what we didn't see."

The same day this article appeared, I received an email from Phil Ratte, who reported having watched an interview with a former astronaut. He said that the shuttles he flew on (the last one in 1996) made a series of turns in an "S" shape during reentry to slow the shuttle down. He also said that Columbia did not execute those turns, which are completely computer-generated, but instead came straight in. Parts of the shuttle heated abnormally just before it began to come apart (*Minneapolis Star Tribune*, 9 February 2003, p. A10), which could have been caused by a strike from an EMP. All of this hints that Columbia was out of control almost immediately upon its reentry, which ought to have been obvious to those who had the craft under computerized control.

These considerations--the strange electrical discharge, the loss of control, and the abnormal heat just before breakup--suggest that (h5) ought to include the possibility that the shuttle might have been hit by a bolt from an EMP weapon. The crucial problem with this hypothesis appears to be the method of delivery,

since it presumably would have had to originate from a distance greater than 1,000 ft. But there may very well be whole families of EMP and HMP weaponry. It bothers me that fearless announcements of NASA's determination to consider every possible hypothesis have not led to any acknowledgment that there might be an alternative explanation for a puzzling phenomenon of this kind. Not one!

Other possible explanations are surfacing, which now include damage to the wing apparent in rather obscure images released by the Air Force, that may have been caused by space debris. A small object observed moving away from Columbia on its 2nd day in orbit is drawing interest (USA TODAY, 11 February 2003, p. 2A). So-called "blue lightning", a poorly understood phenomenon that occurs at high altitudes, also affords an intriguing alternative hypothesis. But, regarding these remarkable photographs, we know that NASA knows about them, since it even sent a former astronaut to view them and subsequently flew the Nikon-880 to Houston. I was troubled at the time that the photographer--no doubt out of good intentions--had decided not to release his images right away, giving the government time to study them first. But that is a recipe for the destruction of evidence. And backsliding by NASA has already become apparent in the latest developments in its investigation.

On Friday, 7 February 2003, John Border and Richard Opal, Jr., reported that NASA had relinquished authority over the investigation of the Columbia disaster to an independent review board, which is a move in the right direction. NASA, however, also now maintains that it cannot rule out that the impact of foam had initiated the chain of events that led to the disaster, contrary to its earlier reports (*The New York Times*, 7 February 2003). Indeed, the earlier rejection of hypothesis (h1) were so emphatic--based upon multiple computer simulations!--that I find it very difficult to believe that this hypothesis is not being resurrected because the implications of an (h5) alternative involving the use of EMP weaponry--which, to the best of my knowledge, has not even been publicly acknowledged by NASA--are just too hot!

This suspicion has now been compounded by a report that Columbia was engaged in a military mission using a multi-spectral telescope to scan for emissions released at night over the Iraqi desert as waste products of chemical weapons production, for example (<http://zolatimes2.com/>). During 16 days in orbit, Israeli astronaut Ilan Ramon made Earth observations with a cluster of instruments, which required an independent source of power for its infrared beam to discern images at night. Yoichi Clark Shimatsu reports that the source of that power was an exotic type of fissionable fuel called “americium-242” developed at Ben-Gurion University, which requires only 1% of the mass of uranium or plutonium to reach its critical state.

NASA envisions americium-242 as a source of propulsion for future spacecraft, Shimatsu relates, “since an americium-242 engine is expected to be 10 times faster than current rocket technology. A more immediate application of this exotic nuclear fuel is to provide the kick for space-based weapons, including laser cannons and electromagnetic pulse weapons.” Indeed, he adds, “Not by coincidence perhaps, Ilan Ramon and Commander William McCool were both specialists in electromagnetic warfare” (http://freedom.orlingrabbe.com/lifetime/columbia_spectral.htm). All of which means Columbia could have experienced an electromagnetic phenomenon in more ways than one, either as the target of an external source or as an accident aboard the craft, which greatly deepens the mystery. This odd lightning thus becomes curiouser and curiouser.

A friend of mine with 30 years of flight experience and an Air Force background, who used to supervise air crash investigations, remarked to me that this could have been something as innocuous as a static electrical discharge. But if that had been the case, then it should have had none of the effects--such as the loss of control, failure to make the "S" maneuver, and abnormal temperature--that occurred in this instance. I am glad he raised the possibility, however, because the serious application of scientific reasoning does indeed require that all the

possible explanations be taken into account, where an acceptable hypothesis must explain all the available evidence, including these striking phenomena.

If an EMP weapon was used in this case, however, then the question arises of why it was used. Who could benefit from a disaster of this kind at this time?

There may be more than one answer to that question. Alex Jones, who studies the use of disinformation, suggests that the Bush administration had multiple potential benefits from just such a disaster at this very moment in time, namely:

"It will serve as a distraction in the global press during the final weeks of war preparation in the gulf. (And) it will serve the dual purpose of unifying the people behind President Bush as he grandstands . . . talking about how horrible the death of the astronauts has been". He views it as a brilliant stroke of mass manipulation by a wholly unscrupulous administration (<http://www.infowars.com/shuttle.htm>).

I have observed that this government, especially under the guidance of Karl Rove, appears to be masterful at the psychology of distraction, announcing, for example, the creation of the Department of Homeland Security on the very same day that Senator Arlen Specter (R-PA) publicly reported that, as a result of Congressional inquiries, he had discovered that, in relation to the terrorist attacks on the World Trade Center, the administration had not just had vague impressions, had not just had dots to connect, but actually had blueprints of what the terrorists had in mind. The announcement of the new governmental reorganization, of course, involving some 30 agencies and some 170,000 employees, masterfully swept it out of sight.

Indeed, it also shifted attention from the administration's budget proposal, which presented plans for \$2.2 trillion in spending and projects record deficits. The headline for 3 February 2003 for *The New York Times* on-line (updated at 11:11 PM), for example, put this hugely important announcement--which ordinarily would have dominated the airwaves--in *third place* behind "Debris Is Now Leading Suspect In

Shuttle Catastrophe Inquiry" and "Shuttle's Chief Puts Pained, Steely Face on Shared Trauma". You would have to search further to discover that "The budget will speed up billions of dollars in income tax cuts and provide huge increases for the Pentagon" (<http://nytimes.com>). At the very least, this was an opportunity it skillfully exploited.

There is no guarantee that the EMP hypothesis is true or even whether such an hypothesis will ever receive serious consideration. But if this independent panel should succeed where others, such as The Warren Commission, have failed, then it may largely be due to a fortuitous act by an amateur photographer. Perhaps we will eventually learn the truth about the Columbia disaster because these things have received so much publicity. I hope that's the case, but past experience has not been very reassuring. I wouldn't bet on it.

Jim Fetzer, a professor of philosophy at UMD, has become increasingly distrustful of the Bush administration, which he believes to be the most corrupt in American history. Taking advantage of this tragedy for political advantage clearly fits its style.