



Not-So-Spontaneous Human Combustion

Like Count Dracula, the mythical specter of "spontaneous human combustion" (SHC) refuses to die. The latest book to fan the flames of belief, so to speak, is *Ablaze!* by Larry E. Arnold. The dust-jacket blurb states that the author "redirected a background in mechanical and electrical engineering to explore the Unconventional." Indeed, Arnold is a Pennsylvania school bus driver who has written a truly bizarre book—one that takes seriously such pseudoscientific nonsense as poltergeists and ley lines (Arnold 1995, 362–6), and that suggests that the Shroud of Turin's image was produced by "flash photolysis" from a body transformed by SHC "into a higher energy state" (463).

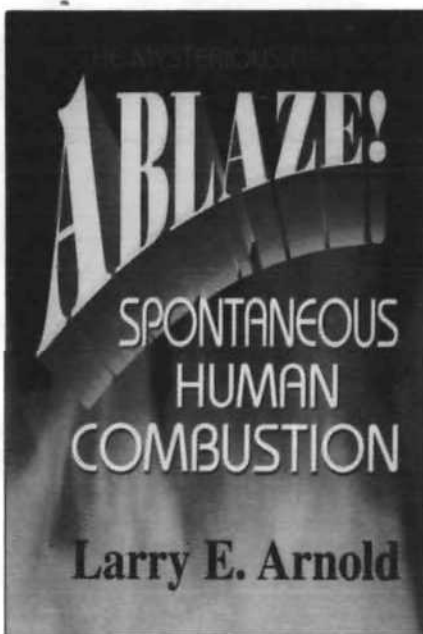
As if he were a trained physicist on a par with any Nobel laureate, Arnold blithely posits a subatomic "pyrotron" as the mechanism for SHC (99–106), and he casually opines that "extreme stress could be the trigger that sets a human being ablaze" (163). In the many cases in which the alleged SHC victim had been a careless cigarette smoker or in which the victim's body was found lying on a hearth, Arnold dodges the issue of SHC by invoking "preternatural combustibility" (84), an imagined state in which a body's cells reach a heightened susceptibility to ignition by an outside spark. To understand Arnold's approach we can look at a few of his major examples, those cases which are treated at chapter length.

Arnold leads off with the 1966 case of Dr. John Irving Bentley who was consumed by fire in the bathroom of his home in Coudersport, Pennsylvania. About all that was left of him—in recognizable form—was his lower leg that

kept wooden matches in both pockets of his day robe—a situation that could transform an ember into a fatal blaze. Apparently waking to find his clothing on fire, Dr. Bentley made his way into the bathroom with the aid of his aluminum walker—probably at an accelerated pace—where he vainly attempted to extinguish the flames. Broken remains of what was apparently a water pitcher were found in the toilet. Once the victim fell on the floor, his burning clothing could have ignited the flammable linoleum; beneath that was hardwood flooring and wooden beams—wood for a funeral pyre. Cool air drawn from the basement in what is known as the "chimney effect" could have kept the fire burning hotly (Arnold 1995, 1–12; Nickell and Fischer 1984).

In chapter 6, Arnold relates the fiery death of a widow, Mary Reeser, who perished in her efficiency apartment in St. Petersburg, Florida, in 1951. The case, a classic of SHC, has long been known as the "cinder woman" mystery. Except for a slipped foot, Mrs. Reeser's body was largely destroyed, along with the overstuffed chair in which she had been sitting and an adjacent end table and lamp (except for the latter's metal core). The rest of the apartment suffered little damage. "Nor," adds Arnold, "did the carpet beyond her incinerated chair show signs of fire damage!" (76)

In fact, the floors and walls of Mrs. Reeser's apartment were of concrete.



had burned off at the knee; it was lying at the edge of a hole about two and a half by four feet which had burned into the basement.

Spontaneous human combustion? Actually the infirm ninety-year-old physician had a habit of dropping matches and hot ashes from his pipe upon his robes which were spotted with burns from earlier occasions. He also

When last seen by her physician son, Mrs. Reeser had been sitting in the big chair, wearing flammable nightclothes, and smoking a cigarette—after having taken two Seconal sleeping pills and stating her intention of taking two more. The official police report concluded, "Once the body became ignited, almost complete destruction occurred from the burning of its own fatty tissues." (Mrs. Reeser was a "plump" woman, and a quantity of "grease"—obviously fatty residue from her body—was left at the spot where the immolation occurred.) As the fat liquefied in the fire, it could have been absorbed

filed by Angel's attorney in Fulton County Superior Court tells how Angel (the plaintiff) was in his motorhome and "while Plaintiff was in the process of taking a shower, the water suddenly stopped flowing from the shower plumbing." In attempting to learn why there was insufficient water pressure, Angel "exited said motorhome and attempted to inspect the hot water heater. In making said inspection, the pressure valve on the hot water heater released and as a result, scalding hot water under tremendous pressure was sprayed upon plaintiff." The complaint claimed that the defendant, the manu-

227-36; Nickell with Fischer 1992, 165-75).

Arnold's next major case is that of Helen Conway, who perished in 1964 in Delaware County, Pennsylvania. Except for her legs, her body was largely destroyed along with the upholstered chair in which she sat in her bedroom. The destruction took place in only twenty-one minutes (according to the fire marshal), although Arnold uses "commonsense deduction" (and an assumption or two) to whittle the time down to just six minutes (which becomes "a few seconds" in the caption to a photograph). Arnold asserts Mrs. Conway's body "exploded."

In fact Mrs. Conway was an infirm woman, who (according to the fire marshal) was also "reported to have been a heavy smoker with careless smoking habits." He added: "Cigarette burn marks were evident about the bedroom." (It is curious how people who are careless with fire are those who attract SHC.)

Apparently the fire took less time to destroy Mrs. Conway's torso than it did the body of Mary Reeser, but it may have begun at the base of the seated body and burned straight upward, fed by the fat in the torso, and may have thus been a much more intense fire—not unlike grease fires that all who cook are familiar with. Indeed, in searching through the dense smoke for the victim, an assistant chief sank his hand "into something greasy" that proved to be the woman's remains.

As to the bits of scattered debris that Arnold cites as evidence of "Spontaneous Human Explosion" (388), they could have been scattered by the chair's heavy right arm having fallen across the body at one point. Another possibility is revealed by the fact that the assistant fire marshal stated, "There wasn't debris scattered all over" (384), even though bits of debris are indeed shown in photos of the scene (illus. facing p. 212). In other words, the scattering may not have originally been present at the scene but could have been due to splashback from the firemen's high-pressure spray that was used to extinguish nearby flames. It is important to note that it is only

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into the chair stuffing to fuel still more fire to attack still more of the body (Arnold 1995, 73-91; Nickell and Fischer 1984). We will discuss the "candle effect" more fully later on.

In chapter 15, Arnold relates the case of one Jack Angel, who told him "an incredible incendiary tale." Angel stated that in mid-November 1974, while he was a self-employed traveling salesman, he awoke in his motorhome in Savannah, Georgia, to find that he had a severely burned hand, which later had to be amputated, plus a "hell of a hole" in his chest, and other burns—in the groin area, and on the legs and back "in spots!" Angel claimed one of his doctors said he had not been burned externally but rather internally, and he claimed to be a survivor of SHC. Interestingly, his clothing had not been burned, and there were no signs of burning in his motorhome.

Unfortunately, when Arnold and I appeared on a Canadian television show to debate SHC, Arnold was unaware of an earlier story about the injuries that Angel had told—in court. I revealed it on the show for the first time (courtesy of fellow investigator Phil Klass), thus publicly embarrassing Arnold, who has ever since been trying to rationalize away the evidence.

As it happens, a 1975 civil-action suit

facturer of the motorhome, was negligent both in the design of the heater and valve and in failing to provide adequate warning of the damage. The suit was later transferred to federal court where it was eventually dismissed for costs paid by the defendant.

Arnold attempted to rebut this evidence, for example, by quoting some motorhome mechanics, but it does not seem that he gave the mechanics the full facts in soliciting their statements. For instance, forensic analyst John F. Fischer and I did not postulate "a bad valve" (as Arnold quoted the servicemen as stating we did in *Fate* magazine). Indeed, Arnold has repeatedly dodged—even outright omitted—powerful corroborative evidence, such as the water pump's drive belt being off, the water pump's drive pulley being loose, and the water heater's safety relief valve being in the open position! In our investigative report John Fischer and I listed more than a dozen additional corroborative factors, including the unburned clothes, which were especially consistent with scalding. We even included the opinions of two doctors whom Arnold cites as having diagnosed "electrical burns" as if their opinions—which were again apparently based on incomplete information—were more harmful to our position than his (Arnold 1995,

Arnold—and not the fire officials, who actually blamed the fire on a dropped cigarette—who claimed the body exploded (378–92).

The fifth and last of Arnold's chapter-length cases is that of a fifty-eight-year-old retired fireman named George Mott. He died in 1986 in the bedroom of his home outside Crown Point, New York. His body was largely consumed along with the mattress of the bed on which he had lain. A leg, a shrunken skull (reported to have shrunk to an implausibly small size), and pieces of the rib cage were all that remained that were recognizably human. Arnold insists that there was no credible source for the ignition.

Whether or not we agree with Arnold's dismissal of the theories of two fire investigators—first, that an electric arc shot out of an outlet and ignited Mott's clothing, and second, that an "undetected" gas leak had been responsible—there are other possibilities. Mott was a man who formerly drank alcohol and smoked heavily. The day before he died he had been depressed over his illnesses which included respiratory problems and high blood pressure. What if, as could easily happen in such a state of mind, he became fatalistic and, shrugging off the consequences, opted for the enjoyment of a cigarette? This possibility gains credence from the fact that he was not wearing his oxygen mask although he was in bed and his oxygen-enricher unit was running. On top of the unit, next to the mask, was an otherwise puzzling canister of "barn burner" matches, yet there was no stove or other device in the room they would be used for. (At least Arnold does not mention a stove or other device being in the room. If there was, then we have another possible explanation for the fire, and there are additional potential explanations in any case—each more likely than SHC.) (Arnold 1995, 393–411)

Now Arnold cites the Mott case as a quintessential one of SHC, based on the process of elimination. He does not allow SHC to be eliminated, however, although there is no single instance that proves its existence and no known mechanism by which it could occur.

And so he often dismisses what he feels is unlikely in favor of that which the best scientific evidence indicates is impossible. Such thinking has been called "straining at a gnat and swallowing a camel."

In fact Arnold's process-of-elimination approach here as elsewhere is based on a logical fallacy called "arguing from ignorance." As the great nineteenth-century scientist Justus von Liebig explained: "The opinion that a man can burn of himself is not founded on a knowledge of the circumstances of the death, but on the reverse of knowledge—on complete ignorance of all the causes or conditions which preceded the accident and caused it" (Liebig 1851).

In his relentless drive to foster any sort of mystery, in this and other cases, Arnold raises many attendant questions. For example, he wonders why extremities, such as a victim's leg, and nearby combustibles are not burned. The answer is that fire tends to burn upward; it burns laterally (sideways) with some difficulty. Anyone with camping experience has seen a log that was laid across a campfire reduced to ashes by the following morning while the butt ends of the

fered severe heat damage. The answer is one of elevation: Heat rises. In Mrs. Reeser's apartment, due to the accumulation of hot gases, soot had blackened the ceiling and walls above an almost level line some three and a half feet above the floor, there being negligible heat damage below the smoke line but significant damage above it: for example, plastic electrical switches had melted. Thus, in George Mott's house, reports Arnold, "On the counter directly beneath the melted towel holder sits an unopened roll of Bounty towels, upright. Ironically, it and its plastic wrapping were undamaged except for a glazed film on the top!" (Arnold 1995, 398)

Other factors relevant to heat-damage "selectivity" include the object's composition, density, confinement (for example, in a cupboard), placement on a surface that either radiates or retains heat, or its placement relative to convective currents, cinders carried aloft, and so forth.

While acknowledging that there is often a source for the ignition of the body, Arnold points to the sometimes extreme destruction—of the torso especially—as evidence, if not of SHC, then

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log remained intact. Thus, outside the circle that burned through the carpet covering the concrete floor of Mary Reeser's apartment was found her slippered foot, because Mrs. Reeser had a stiff leg that she extended when she sat. Beyond the circle some newspapers did not ignite, while a lamp and table within it did burn. Similarly, Dr. Bentley's intact lower leg extended outside the edge of the hole that burned through his bathroom floor.

Beyond this matter of proximity, Arnold cites other examples of fire's "selectivity" that puzzle him. For example, in the Mott case, he wonders why matches near the burning bed did not ignite, while objects in other rooms suf-

fered preternatural combustibility, the imagined heightening of the body's flammability. In the nineteenth century, alcohol consumption was thought to cause increased flammability, but we now know that its only effect is in making people more careless with fire and less effective in responding to it (Nickell and Fischer 1984).

Arnold and other SHC advocates are quick to suggest that bodies are difficult to burn (which is true under certain circumstances). According to popular SHC writer Vincent Gaddis, "the notion that fluid-saturated fatty tissues, ignited by an outside flame, will burn and produce enough heat to destroy the rest of the body is nonsense" (Gaddis 1967).

Actually the reference to "fluid-saturated" tissues is correct but misleading in Gaddis' attempt to suggest that an external source of ignition could not cause such extreme destruction to a body because the great amount of water would retard burning. In fact the argument works more strongly *against* the concept of SHC than for it, there being no known means by which such fluid-saturated tissue could *self-ignite*. On the other hand, it is a fact that human fatty tissue will burn, the water it contains being boiled off ahead of the advancing fire.

Referring specifically to claims of SHC (and favorably citing research done by John F. Fischer and me), a standard forensic text, *Kirk's Fire Investigation*, states:

Most significantly, there are almost always furnishings, bedding, or carpets involved. Such materials would not only provide a continuous source of fuel but also promote a slow, smoldering fire and a layer of insulation around any fire once ignited. With this combination of features, the investigator can appreciate the basics—fuel, in the form of clothing or bedding as first ignition, and then furnishings as well as the body to feed later stages; an ignition source—smoking materials or heating appliances; and finally, the dynamics of heat, fuel, and ventilation to promote a slow, steady fire which may generate little open flame and insufficient radiant heat to encourage fire growth. In some circumstances the fat rendered from a burning body can act in the same manner as the fuel in an oil lamp or candle. If the body is positioned so that oils rendered from it can drip or drain onto an ignition source, it will continue to fuel the flames. This effect is enhanced if there are combustible fuels—carpet padding, bedding, upholstery stuffing—that can absorb the oils and act as a wick. (DeHaan 1991, 305)

Dr. Dougal Drysdale of Edinburgh University agrees:

The idea that the body can burn like a candle isn't so far fetched at all. In a way, a body is like a candle—inside out. With a candle the wick is on the inside, and the fat on the outside. As the wick burns the candle becomes

molten and the liquid is drawn onto the wick and burns. With a body, which consists of a large amount of fat, the fat melts and is drawn onto the clothing which acts as a wick, and then continues to burn. (Drysdale 1989)

Experiments show that liquefied human fat burns at a temperature of about two hundred and fifty degrees Celsius; however, a cloth wick placed in such fat will burn even when the temperature falls as low as twenty-four degrees Celsius (Dee 1965). In an 1854 English case, a woman's body had been partially destroyed in the span of two hours; it was explained that "beneath the body there was a hempen mat, so combustible, owing to the melted human fat with which it was impregnated, that when ignited it burnt like a link [i.e., a pitch torch]" (Stevenson 1883, 718–27).

Even a lean body contains a significant amount of fat, which is present even in the bone marrow (Snyder 1967, 233, 242). Indeed, "once the body starts to burn, there is enough fat and inflammable substances to permit varying amounts of destruction to take place. Sometimes this destruction by burning will proceed to a degree which results in almost complete combustion of the body," as police officials reported in the Mary Reeser case (Blizin 1951). Moreover, in general, "women burn hotter and quicker than men, because proportionally, women carry more fat" (Bennett n.d.).

Arnold tries to compare favorably the partial destruction of bodies that occurs in his SHC cases (in which limbs, large segments of bone, and other matter may remain, although that which does is rarely quantified or described scientifically) with the more complete destruction typical of crematories. But this is an apples-versus-oranges comparison at best. As Drysdale (1989) explains:

In a crematorium you need high temperatures—around 1,300 degrees C, or even higher—to reduce the body to ash in a relatively short period of time. But it's a misconception to think you need those temperatures within a living room to reduce

a body to ash in this way. You can produce local, high temperatures, by means of the wick effect and a combination of smoldering and flaming to reduce even bones to ash. At relatively low temperatures of 500 degrees C—and if given enough time—the bone will transform into something approaching a powder in composition.

It is interesting that the major proponents of SHC—Michael Harrison (*Fire from Heaven*, 1978), Jenny Randles and Peter Hough (*Spontaneous Human Combustion*, 1992), and Larry E. Arnold (*Ablaze!*, 1995)—are all popular writers who are credulous as to other paranormal claims. They stand in contrast to the physicists and chemists, the forensics specialists, and other scientists who question—on the evidence—the reality of spontaneous human combustion.

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