



## CONSIDER THIS

*The monthly essay formerly found at the Standards Blog tab has been rechristened "Consider This..." We will continue to bring diverse and eclectic reflections on life, standards, and everything to you each month under this new title. Such as this.*

☐☐☐ February 27, 2006

### #36 *Body Type Standards, Crash Test Dummies, and Sleeping with Big Agnes*

One of the most universally employed types of standards describes "standard" body sizes and shapes. Most obviously, there is the type of variable standard that we call a "clothes size," which we use to make the selection of clothes more efficient. But there are other types of body standards as well that focus not on variations within the population, but on establishing the maximum or the mean of human dimensional existence. These standards have a multitude of applications, from determining the size and spacing of theatre seats, to the placement of seatbelts in cars to setting the height of doorways.

Sadly, clothes sizes are unregulated, and can therefore verge on the fraudulent (as in the "perfect size 6 dress" someone finds that just fits, after trying many that won't). Body type standards used for other purposes, however, must be highly precise, especially where they are employed for safety purposes. These standards are important not only for designing products (such as the necessary range of adjustment for headrests in cars), but also to test the actual safety of the products after they have been designed.

Determining design reference standards is a relatively straightforward, if tedious, process, since it largely involves a measurement and arithmetic exercise after a test sample has been established. But what about the physical manifestations of those standards that must be created in order to perform safety tests after the designs have been turned into products – like cars?

Initially, the effectiveness of automobile safety designs was evaluated using the rather gruesome, albeit self-explanatory, practice of "cadaver testing." But available cadavers were at best only "standard" by coincidence, tending instead to be older Caucasians. And, as dryly noted in the informative entry in the Wikipedia titled "Crash Test Dummy" "[C]hild cadavers were not only difficult to obtain, but both legal and public opinion made them effectively unusable."

Up to a point, testing could also be accomplished using "Volunteer testing" (a sub-heading that you may also find in the Wikipedia under the generic Crash Test Dummy entry. (Does this placement represent an editorial comment?) The Wikipedia has this to say regarding human test subjects:

Lawrence Patrick, a now-retired Wayne State University professor, endured some 400 rides on a rocket sled in order to test the effects of rapid deceleration on the human body. He and his students allowed themselves to be smashed in the chest with heavy metal pendulums, impacted in the face by pneumatically-driven rotary hammers, and sprayed with shattered glass to simulate window implosion.

The Wikipedia does not tell us what course Professor Patrick was teaching, or what tuition his students were paying for the privilege of furthering science, but it does record that that the tests tended to leave the Professor "a little sore." Clearly, as enigmatically noted by the Wikipedia, "To gather information about

the causes and prevention of injuries and fatalities would require a different kind of subject. But what type of subject might that be?"

One possibility, of course, was to pick on our usual victims: defenseless animals, and recourse to this pool of test subjects was duly made. Mary Roach, writing at Salon.com in an article called I was a Human Crash-test Dummy (she is not actually referring to herself, but to Professor Patrick), quotes from the proceedings of the second annual Stapp Car Crash Conference, held in 1956, as follows:

We saw chimpanzees riding rocket sleds, a bear on an impact swing...We observed a pig, anesthetized and placed in a sitting position on the swing in the harness, crashed into a deep-dish steering wheel at about 10 mph.

Unfortunately, while pigs have many physiological similarities to humans, the ability to sit upright while conscious behind a real steering wheel and hurtling at a wall is not one of them. The quest for the perfect crash test subject therefore continued.



That subject, in its first instantiation, was "Sierra Sam," created in 1949 to help test aircraft ejection seats. Sierra Sam had many lineal descendants, including the Hybrid Family (unimaginatively named Mr. (the adult male), Ms. (yes, the adult female), and Hybrid III (not one, but two children of different genders and sizes – go figure). The next generation of ersatz passengers included SID, CRABI, Thor, and, most recently, Vince and Larry – two talking dummies created in the 1980's by the U.S.

Department of Transportation to promote the use of seatbelts.

But as engaging as Vince and Larry may be, it is not they that we will consider today in this installment of **Consider This....** After all, you can read all about Sierra Sam and his friends at the Wikipedia entry, under sub-headings such as <http://en.wikipedia.org/wiki/Image:Dummies.jpg>

"Dummy Evolution," "The Future of the Dummy," and "Crash Test Dummies in Popular Culture."

Instead, we are going to consider...Big Agnes.

The significance of Big Agnes is this: while Sierra Sam may have been as American as Apple Pie in 1949, there's been a whole lotta pie (and Big Macs, and nachos, and...) going down the American piehole since then. In consequence, the crash test dummy of the middle of the last century is no longer representative of the nutritionally challenged dummies of 21<sup>st</sup> century America.

The implications of this expansion of the American physique are significant, from a safety perspective. For example, several aircraft crashes have been attributed to the realization that "standard" assumed weights for passengers are no longer representative of typical weights of real passengers. The consequences of this can be particularly dire for smaller aircraft. One such disaster involving a Canadian flight was attributed to the fact that its 10 passengers weighed, on average, 56.7 pounds more than the published standard weights specified in Canadian (and U.S. regulations).

Of course, outmoded standards can have less serene, if still unfortunate, consequences as well. For example, at the same time that Americans (and, apparently, Canadians) have grown heftier, our image-conscious culture has grown more obsessed with attaining the ideal body image of television cast

members (if only in our own imaginations). When these two trends combine with other cultural forces, such as our obsession with clothes and sports gear, something has to give.

And so, with that unusually long introduction, let's take a look at an extract from a blog entry that I wrote while hiking and camping in Arizona a few weeks ago, and finally Consider this...

In some ways, it's surprising that I still enjoy camping. When I first started sleeping out as a boy scout in the early 1960's, modern camping equipment was unknown. Gear came from a sporting goods store or perhaps Sears Roebuck, and was all the same wherever you bought it, anyway. My family's first tent was what was referred to as a "pup tent," (I have no idea why), and was made of heavy, stiff canvas. If you were really serious, you could order better gear from L.L.Bean, which in those days operated from a single location of modest size and was actually a real outfitter, rather than a clothing emporium that keeps a few expensive fishing rods around for atmosphere.

Wherever you got your gear (other than from L.L.Bean), a pack was a sack with canvas straps that sought to divide your shoulders from the rest of your body when it was full, and a sleeping bag was also a sack, of the rectangular persuasion, that (a) cost about 20 bucks, (b) was probably lined with flannel, and (c) used cotton batting as insulation. Even camping gear so basic that someone today (your kid, for example) would assume came from Noah's Ark was unknown – no pack frames, or even what would pass as a usable camp mattress (you could, to be fair, buy a narrow rubber and canvas inflatable mattress that resembled a pool float, and then spend the rest of the night sliding off it).

Camping, therefore, provided neither an opportunity to make a fashion statement nor an occasion to indulge in a love of gadgetry. Nor, for that matter, did it even offer to most mortals a realistic hope of getting a good night's sleep – especially in winter.

In consequence, my own early camping experiences always went something like this:

**Act I (In which the subject of our drama turns in with trepidation):** Pitch tent, lay out sleeping bag, cook and eat burnt food, hack around for awhile, put on long underwear, shirt, pants, and two pairs of socks. Fall asleep.

**Act II (In which the Gods of Camping begin to toy with our hero):** Wake up one half hour later covered in sweat. Take off shirt, pants, socks and long johns. Fall back asleep.

**Act III (In which the Gods of Camping call all their friends in to share the fun):** Wake up shivering; put clothing back on and huddle in sleeping bag. Fall asleep for one half hour. Wake up shivering and put on any other clothing one can find. Try unsuccessfully to get back to sleep.

**Act IV (In which our hero realizes that he must face up to his heroic and tragic destiny):** Confirm that there is no more clothing to put on. Get up and chop wood until dawn in order to stay warm.

The Gods of Camping aside (whose existence may only be inferred rather than proven), the tragicomedy above is a sadly accurate rendition of most of my early camping experiences, other than those in the dead of summer.

With time, of course, I became more savvy about such gear as was available, and did lots of backpacking and camping, winter and summer alike. But as the gear got better, I also became a lighter sleeper. Always, that ephemeral good night's sleep lay just beyond my grasp, even though various companies came to realize that there was a lot of money to be made offering high tech camping gear, much of which promised to make comfortable camping a snap.

So it was that about twenty years ago I bought my first down sleeping bag. It handily solved the temperature problem, even on pretty cold nights, and it was light enough for backpacking to boot (assuming you could stuff it into a sack smaller than a Volkswagen Bug). But by then, mummy bags had

become the norm, and while I may have been warm, I also felt as confined as King Tut. Sleeping in my usual elbow-out, arm under the pillow, knee out to the side position was impossible, even though I was (and still am) slim. Moreover, rolling over in a mummy bag is an athletic experience, and difficult to pull off absent a fair degree of exertion and liberal muttering of whatever selection of words you find to be most useful and appropriate in situations of this type.

Which brings us to the present, and the planning for my latest camping trip out West. This time, I was determined to find a sleeping bag that would be not only warm, practical in size, and sufficiently roomy to sleep comfortably in, but which would also permit shifting my position without breaking a sweat. Naturally, I turned to the Web to investigate my alternatives.

I soon found that rectangular sleeping bags still exist. Now, they are sold by K-Mart, Wal-Mart and on-line vendors that all probably buy their goods from the same overseas sweatshop. Each one (still) (a) costs about 20 bucks, (b) is probably lined with flannel, and (c) uses cotton batting as insulation. So much for the low end.

At the high end was an endless array of light, down-filled straitjackets that looked more like the winter digs of Monarch butterflies than the comfortable "sleeping systems" they purported to be.

So the next question was whether I could find something in between – light and warm, but also reasonably roomy. I looked with increasing discouragement at site after site, each of which was dedicated to high-end straitjackets or low-end, rectangular ice chests.

Until suddenly I came to a new Website, and there she was – the sleeping bag of my dreams. And this product line had a memorable name to match: "Big Agnes."

I suppose I shouldn't have been surprised to find her, given our Super Sized nation. With 300 million people now, there must be a need for camping gear for the, how to say, "fully figured" camper (both male and female). The matchmaking site where I met my own particular Big Agnes included helpful statistics for girth as well as height (mine, not hers), as well as her over-all proportions. Besides having great vital statistics and room to move, Big Agnes has many other becoming features as well: her bottom is a full length sleeve, into which you can slide, not a paltry 20" wide sleeping pad, but a full 25" mattress. Truly, this was a sleeping system to be desired – a sleeping system for the American body type of Today!

It was love at first sight. My fingers fairly flew to place the cursor over the shopping cart icon, and lovingly give it a click.

So it was that this week, with the greatest of anticipation, and for the very first time, I lay myself down on the desert floor, stared up at the stars blazing overhead, and fell blissfully to sleep, cradled in the warm, welcoming, ample bosom of Big Agnes. For me – and perhaps for you, too - the new standard of camping comfort.

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