Corrections (The Wright Stuff)

Consistently with an established pattern, POSTERMINARIES in the January 2000 issue of *MRS Bulletin*, "Materials by Accident," drew a small flood of responses. Among these, John Cahn (National Institute of Standards and Technology) pointed out a number of factual errors among the ramblings that the editors had allowed me to publish. I referred to strain aging, when I clearly meant age hardening, and I attributed the discovery of the phenomenon to experimental work of Wilm on Al-Cu in 1908. The purported accident was actually perpetrated on an alloy of Al-Cu-Mn with 0.5% Mg heat treated at 520°C. The story of Al-Cu alloys is even more interesting, as pointed out by Martha Goodway (Smithsonian Institute): The Wright brothers specified an Al-Cu alloy for the crankcase of the engine for their famous Flyer, in 1903, though it is more likely that the alloy composition was chosen to facilitate casting than to provide strengthening. See Gayle and Goodway in *Science* **266** (1994) p. 1015 for more details about this and for their recent discovery that the founders for the Wright brothers had, without anybody knowing it for 90 years, achieved precipitation hardening of Al-Cu. Cahn also pointed out that the discovery of quasicrystals was made during experiments on extending the solubility of manganese in aluminum, not attempts to form metallic glasses as I had asserted.

Finally, Martha Goodway asked for the citation to the quotation "…fortune favors a prepared mind" that I attributed to Pierre Curie. On checking, I find that Curie himself was only quoting Louis Pasteur, who made the original remark in an inaugural speech at the University of Lille on December 7, 1854. I stand corrected. And I continue to look forward to comments on this column. Never before have I been so sure that my work was being read by so many.

ALEX KING

Materials Science and/or Engineering

The age of standardization is pretty well developed at this point. Years ago nuts and bolts were made as matched pairs and wired together so they would stay that way until used. Then someone had the idea of standardizing the diameters, thread depths, shapes, and pitches and it has been downhill ever since. Even where there is competition, there is creeping standardization—ever notice how similar the specifications of different manufacturers' cars have become?

The trend affects academia, too. How many old departments of Metallurgical Engineering, Ceramics, Mining, or Glass Technology have turned into departments called "Materials Science & Engineering" in the last 10 years? The name has certainly become the standard. It brooks no distinctions or specificity with respect to style or content; though, in fact, such distinctions probably still exist. At least I hope so. There are those who have told me that the name has no meaning, or that it is ungrammatical or ambiguous. I am not too sure about any of those things, but it does lump together two things which I still see as distinct and separate. You probably think of yourself as a "materials scientist" or a "materials engineer" but probably not both. Some of you may describe yourselves as "materials researchers" in the spirit of the Materials Research Society, but I am willing to bet that you still think that you are either engineers or scientists. It is largely a matter of self-definition, of course, and your colleagues might define you as either an engineer or a scientist depending not upon any absolute definition, but on your position on the spectrum relative to theirs. If you are on THAT side of me, you must be an engineer; on the OTHER side you are a scientist. This whole business is just a matter of identifying your spot on the broad spectrum of materials science & engineering. Pure scientists are at one end, pure engineers at the other, so how do you find your place?

Here, in the spirit of *Cosmopolitan*, and countless other magazines, we offer *MRS Bulletin's* self-knowledge test: How do you Rate as a Scientist/Engineer? Respond to all of the questions with only a single choice by answering precisely or choosing the answer that seems MOST correct to you. Then refer to the key for your own personal rating.

1. psi is (A) a Greek letter; or
(B) a unit of pressure.

2. k means (A) a thousand, or
(B) 1.6021E-19 Joules.

3. To how many significant digits can you quote the value of π, without looking it up?

4. Your desktop computer is
(A) a Wintel box; (B) a Macintosh;
(C) a SUN workstation;
(D) Silicon Graphics; (E) other Unix box;
(F) something else entirely.

5. How many calculators do you own?

6. The melting point of iron is approximately (A) 1,811 degrees;
(B) 1,538 degrees;
(C) 2,800 degrees?

7. Convolution is (A) a necessary writing technique; (B) a necessary mathematical technique?

8. You keep track of meeting and appointments with (A) an electronic personal organizer;
(B) your secretary does it for you;
(C) a utility on your desktop computer;
(D) a filofax; (E) a wall calendar;
(F) scraps of paper on a pinboard;
(G) post-it notes stuck to your monitor, bookcase, etc.;
(H) scraps of paper lost on your desk?

9. Have you reprogrammed your telephone to give a distinct "ring?"
(A) yes; (B) no.

10. A bit is (A) a cutting tool;
(B) a counting tool?

Answer Key:
Calculate your personal score by summing the numbers corresponding to your answers:

1. (A) -1 (B) 1

2. (A) 1 (B) -1

3. Subtract five from your answer to figure your score.

4. (A) 1 (B) 0 (C) -1 (D) -2
(E) -3 (F) -4

5. Your answer is your score. Score five if you don't know the answer.

6. (A) -2 (B) -1 (C) 1

7. (A) 1 (B) -1

8. (A) 3 (B) -3 (C) 2 (D) 0 (E) 1
(F) -1 (G) -2 (H) -4

9. (A) 1 (B) -1

10. (A) 1 (B) -1

Verdicts:

Large negative numbers correspond to scientists, large positive ones to engineers. If your score is less than -10, you are in little danger of ever writing a patent or doing anything likely to generate profit. At -5 or so, you are beginning to be an applied scientist, and your work may one day give rise to a money-making product, although it is about five years away. A score of zero, or so, will get you moved out of the research center into the development lab. Score 5 and you are on your way to "production." Score 10 or higher, and you should think about investing in a hard hat and a good pair of reinforced work boots.

We encourage you to compare your score with your colleagues' to see if they really are "useless scientists" or "boneheaded engineers," bearing in mind that it is all relative, and that the engineers usually win the fist-fights.

ALEX KING

https://doi.org/10.1557/mrs2000.79 Published online by Cambridge University Press