

Chapter 6

Out of Sight, Out of Mind

Historian Charles Treat in his 1971 work *History of The Metric System Controversy in The U.S.* refers to the period from 1933-1958 as “The Doldrums.” This is certainly an accurate description of metrication initiatives in the US at that time. Worse than being just a stagnant time period, it had reactionary moments. As described previously, proposed 1937 federal legislation would have made metric artifacts only a standard by which we defined the current farrago of units—just a means to an end. Metric had become almost unseen. This period encompasses The Great Depression, World War II, and the height of Post-War American Industrial might. And that industrial might was measured in inch-pound-seconds as far as Americans saw things. There was a brief moment, when this vision of US technical hegemony was shattered. On October 4, 1957 the Soviet Union launched the first artificial satellite called Sputnik. This caused enough concern to precipitate an emphasis on technical education, to deal with how we had “fallen behind.”

One can gauge the level of concern Americans had that the current set of weights and measures might have contributed to a loss of technical prestige, by what took place on July 1, 1959. That was when the United States, the UK, Canada, Australia, New Zealand and South Africa all agreed on a value for the yard and pound. The International Yard and Pound Treaty, which they signed, defined the yard as exactly 0.9144 meter and the pound as exactly 0.45359237 Kilogram. This agreement yet again endorsed the idea among the US and countries with Imperial units that metric was the standard, but the accepted units of measure were the yard, inch (as derived from the yard 25.4 mm), pound and so on. The 25.4 mm inch is also sometimes called the Anglo-Saxon

compromise inch.

The pound was originally defined using a British standard. In 1893 with the Mendenhall Order, the *United States Prototype Kilogram 20* was used to define the US pound as 0.453 592 427 7 that of a Kilogram. The British continued to stick with their own standard for mass. This was the British Imperial Pound which had been fabricated in 1845. In the intervening years after the US defined its standard, the British artifact somehow lost a minute quantity of mass. It was now a very tiny amount smaller than the American standard for the pound. The British pound is equal to 0.453 592 34 Kilograms. The American avoirdupois pound is equal to $0.453\,592\,427\,7 / 0.453\,592\,34$ Kilograms. This works out to an $87.7\ \mu\text{g}$ decrease in the mass of the British standard. During the conference a tiny amount of mass was pruned from the US value to bring it in line with the British Imperial Pound.^[1]

The International Yard and Pound consensus was a reactionary agreement on measurement, which coincided with the era of Sputnik. Rather than questioning our use of a non-metric set of units, the US doubled-down, and brought along other countries for the ride—at least for a while.

Historian Treat observes:

In essence, this announcement was an updated version of the so-called “Mendenhall Order” of 1893, but its real significance was to be found in the acceptance of these definitions by the other nations listed. Inconceivable as it may seem it was the first joint action taken by the United States and Great Britain in over 200 years of independent existence to secure uniform values for the units of the customary system of weights and measure to which both nations had so tenaciously adhered.^[2]

The aspect of this agreement which demonstrates it was more of a cultural endorsement of these measures, than a technical agreement, was that cost was not an issue. Clearly, if all the measurements were to be brought into line among these countries, there would conceivably be a cost involved. Whenever the metric system was broached, the first argument is that it would cost too much to change all of our instruments. There was no debate about if this was a good opportunity to simply pursue the metric system in all these countries in a coordinated effort, as

opposed to fixing the values of the current non-system of units. Clearly the argument would be that most of the infrastructure would not change, such as road signs and so on, but this would be asserted without study, as an obvious matter. In the case of metric, all there would be were studies in the US.

The Australians had already experienced loss from this poorly defined set of English units because of the number of versions of inches that existed in English speaking countries. Because of the lack of a clear international definition of the inch, there was a misunderstanding in the early part of the Twentieth Century between Americans, British and Australians, who were the contractors:

....In 1909 the American firm Pratt and Whitney was contracted to supply all the equipment for the Lithgow plant to specifications that would ensure interchangeability of components with British rifles. But the parts would not fit because no one told the Americans that the British drawings used two different standards of length: dimensions above 2 inches were expressed in inches aligned with the imperial yard; but dimensions below 2 inches were based on the 'Enfield inch', a standard used by the Royal Small Arms Factory at Enfield.^[3]

It is also interesting to note that had all these nations agreed to switch to the metric system, they would not only have been in concert with one another, but with much of the rest of the world at that time. Certainly there would be some cost savings to be found there. This Anglo-centric act occurred, just as the rest of the world was beginning to form a consensus on switching over to the metric system.

The United States response to Sputnik was to create the Mercury, Gemini and finally the Apollo programs. The last of which would land a man on the moon before the Soviet Union. The moon shot became a cold war proxy to determine cultural superiority. While at the time the metric system played little if no part in this political theater, its prominence in public arguments in the United States would slowly increase in the decades that followed.

In October of 1960 the meter was redefined in terms of an orange-red line of light produced by Krypton-86. The meter bar, which had been the standard of length for over 70 years, had now been replaced, and the work of American scientists was prominent in this re-definition. The

political viewpoint was that only the standard upon which the accepted length units in the US were based changed, and embracing the metric system itself was of little importance or consequence.

During the 1960s there was considerable congressional debate about studying the metric system. In 1965 the British announced a ten year plan to convert over to the metric system. The rationale for this was to bring their weights and measures into line with those of Continental Europe, which was their largest export market. In that same year, Congress continued to argue about the wording of any proposed metric study. They wanted the objective of the study to steer clear of any references which implied “conversion to” or “adoption of” the metric system. The question they seemed to want answered—if any—was how much does it cost us because other countries are metric? The bill was not passed. In 1968, with assurances that it was only a study, a bill was passed and signed into law in August of 1968. Almost a century and a half after John Quincy Adams made his report to Congress another was commissioned.

References

- [1] Asimov, Isaac *Realm of Measure*, Houghton Mifflin pp 96-97
- [2] Treat, Charles F. *A History of The Metric System Controversy in The United States*, National Bureau of Standards Special Publication 345-10 Page 236
- [3] Todd, Jan *For Good Measure* Allen & Unwin, 2004 Page 58

