Metrication of the United States:

Aligning measurements with the world

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Abstract

This paper defines what Metrication will mean for the United States, as well as describes the issues that they are currently facing the country because of not fully adopting the system. To understand why the United States needs to fully adopt the Metric system, the paper will look to issues in industry, as well as working with people across the world, and the effect on everyday life. In doing so, it will also look to the changes needed in order to fully adopt the metric system.

*keywords*: metric, metrication, united states

The metric system is a part of the family that is known as SI units. SI, which stands for International System of Units, is a grouping of internationally accepted units by which to measure. These units include the Meter, which is used to measure length. The Second, which is used to measure time. These two units are very familiar and are used within many households. However, SI units also include uncommon units including Mole, used for measuring the amount of a substance; and Candela, which is used to measure the luminous intensity. These units can be found in use all over the world. America faces a very small problem, that has a great impact. For many years, The United states of America has used what is known as imperial units such as inches and feet. We have gotten by with using this as the basis of measurement while other parts of the world use the Metric system. The problem we face is that the world is not using a standard unit of measurement throughout. Because of this, miscommunication can arise.

The problem with the United States not using the metric system is not because the metric system is better, although there are several benefits. It’s that the majority of the world uses it. In a global world, America needs to make the switch or get left behind. The Metric system is a trade language, and if it not taught in schools and brought into industry, America will stay behind the rest of the world. Having a standard unit of measurement globally would be a tremendous benefit. Some of the benefits would include the ability to work together with the rest of the world and use their research and data more easily. Instead of having to convert the measurements over to Imperial, giving way to possible errors with conversion. This is the main reason many scientist and researchers all use the Metric system.

One of the large-scale problems that occurred from many people collaborating and not using the same units, was a NASA satellite that burned up. In 1999 NASA launched a satellite that was poised to take pictures of Mars (Lloyd, R. 1999). During its building process many companies worked together using their own skills and own way of manufacturing. All these companies agreed to use similar systems for the whole system work together. One of the agreements was to use the metric system for all measurements. Each company agreed and began to work on their own part of the satellite. The teams built the satellite and successfully launched it into space. “After a 286-day journey, the probe fired its engine on September 23 to push itself into orbit. The engine fired but the spacecraft came within 60 km (36 miles) of the planet -- about 100 km closer than planned and about 25 km (15 miles) beneath the level at which the it could function properly, mission members said.” (Lloyd, R. 1999). The satellite destined for mars burned up in its atmosphere, and why? “NASA lost a $125 million Mars orbiter because a Lockheed Martin engineering team used English units of measurement while the agency's team used the more conventional metric system for a key spacecraft operation, according to a review finding released Thursday” (Lloyd, R. 1999). Because Lockheed Martin used imperial units for one of their calculations, the mission to Mars failed.

Another issue with not conforming to using the Metric system throughout America is found when cooking. Cooking is known as a science, and with science comes measurements. Many home cooks know the pain of finding and sharing recipes with their friends across the world. Many Grandmothers have written down their secret recipes in English units, writing down how many cups of flour is needed for the dish. This system is okay when the only person who is going to use this recipe is yourself, or just the people in the house. The problem rises once again, when we work with the rest of the world, and in some cases within America. When sharing recipes with people in Britain, you must convert your measurements over to Metric before they can use it. In the process as we have seen in the Mars satellite, can cause errors. If you don’t add the proper amount of a certain ingredient, the dish you are making will not come out properly and will possibly not be edible. The conversion problem also happens when professional cooks enter the home. In their schooling, they are trained to use oz. and liters. To share and develop their recipes for their profession, they need to convert units. And as talked about before, when converting units, errors can occur.

With all these problems rising from not using the Metric system, there is only one solution: convert to the Metric system. Although this solution is very simple, it carries a lot of complexity with it. To successfully convert we would need to change all of our measuring instruments such as rulers and measuring cups. We would need to change our education system to start teaching the Metric system, and only the Metric system.

One way to achieve full American adoption of the Metric system is to start with the young minds of today. Including the metric system in student’s curriculum would be a good starting point for adoption in America.

In the beginning of this nation’s development, the Metric system was staked to be our universal way of measuring. Even though the Metric system was adopted by the French, America’s founding fathers were some of the people who developed the Metric system. One man, named Pearl, who is very passionate about the metric system wrote about the history of the metric system and had this to say “Pearl will gladly send anyone his 31-page document, “SI: An Educational Overview For Americans,” which explains that the Metric Act of 1866 legalized the use of the metric system for weights and measures in the U.S. It also explains that the U.S. founding father Benjamin Franklin helped develop the metric system and that Thomas Jefferson championed a version of it, though most Americans still think of metric as not American.” (Clayton, V., 2016,). The metric system is a very American thing.

The Metric Conversion Act of 1975 was the first step towards metrication of the United States of America. Officially the Metric system is recognized as the official measurement system of the united states. We have already laid the ground legal and political ground work for the full adoption of the metric system. Many things have come from this act. For instance, the act created the United States Metric Board, consisting of 17 members. The act also cites the need for the metrication of the united states, “(4) Industry in the United States is often at a competitive disadvantage when dealing in international markets because of its nonstandard measurement system, and is sometimes excluded when it is unable to deliver goods which are measured in metric terms.” (George Bush, n.d.)

While the metric system is present in some of the nation, we still have a way to go. You can find the metric system in races. Many people proudly display that they ran a 5K and that a marathon is 42 Kilometers. The metric system can also be found at your local coffee shop. When the baristas are measuring out the ingredients for your morning coffee, they measure out 22 grams of beans for your standard pour over. The metric system can be found in our everyday life. And if we are going to make the change from imperial, we must first make some changes. We have Our road signs need to be changed from mile per hour to kilometers per hour.

The best way for the full metrication of the united states is for adoption into the education system. This is the best option because if you teach people one way, they will soon rely on it since that’s what they know and that’s what they are used to. This will further enable our children to work better with the rest of the world. Teaching American children about the metric system can also have several effects on the country. One being that when students growing up using the metric system will choose tools that have the familiar units on them. This will encourage businesses to stop creating rulers with inches on them, since demand for such things would go down, and start manufacturing meter sticks. This change in education will also feed into other aspects of America such as our production industries. Machinist will no longer use inches, but will have to convert to Metric. Although this change will be very costly to retool, the change will be needed since the incoming workforce will not be as familiar with the old imperial way of measuring.

In conclusion, the metric system can be adopted by the united states if we include it in the education system. We need to implement it in our education system, so that at an early age our children will be groomed to work alongside the rest of the world. The metric system is the trade language of the world, and if we are to not fall behind in this globalized world.

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