

# Ticking Time Bomb!

On Thursday, March 12, 2009, a Sikorsky S-92 helicopter crashed killing 17 people on board! The entire North Sea fleet was grounded until they could determine the cause of the crash. The investigation showed that **the crash was “a result of the failure of a single metal fastener in the main gearbox.”** The safety and stability of a product can only be as good as the quality of the components used in its construction. It may appear that the product is sound as you place it in the shipping container, but if the product is comprised of low quality component materials it is not a matter of whether the product will fail, the only question is when. The crash of the Sikorsky S-92 Helicopter should be a wakeup call for all of us, but it is not an isolated incident. The Internet is filled with articles where the failures of low quality fasteners have been responsible for untold damages and loss of life.



Fasteners are the components that hold everything together, so when it comes to purchasing fasteners, always choose quality over price. The GT Technical Consultants said it this way, **"The failure of a 50-cent nut or bolt can cause tens of thousands of dollars worth of damage or downtime. Worse yet, would be the millions of dollars in liability damage for personal injury."** Don't make the mistake of shipping your customers a "ticking time bomb" like the manufacturer of the gearbox used in the Sikorsky S-92 Helicopter. No company should ever sacrifice quality for price when buying fasteners because the backend cost is too high.

Remember the 1971 Ford Pintos? This was Ford's masterpiece car set to compete with the VW Bug. However in order to compete with VW, Ford determined that the Pinto could cost no more than \$2,000.00. Ford was aware that the gas tank would puncture in rear end collisions, but using the safe gas tank would have brought them over budget, so Ford shipped the product with the cheaper tank. When the owner of the Pinto was involved in a rear end collision, the vehicle buckled like an accordion jamming the doors so they couldn't escape as the four protruding differential bolts pierced the tank giving way to a flood of gas into the car where the occupants were trapped until the gas tank exploded. The owners of these vehicles were completely unaware that they were driving a "ticking time bomb" until it was too late. Ford made a command decision that the cost of the components used was more important than the quality of the components or loss of life. **When product cost is valued over quality and offered to an unsuspecting public; it is a very dangerous game!**



Unfortunately, placing quality on the chopping block in lieu of price has become a common occurrence in the current economic environment. How did this happen? In 1984, the Competition in Contracting Act (CICA) was signed into law fanning the flame of the current price over quality philosophy. This act greatly modified the previous Federal Acquisition Regulations (FAR) and has had a huge impact on the commercial sector including the fastener industry. The concept behind this government purchasing model was discussed by E. Jerome McCarthy and William D. Perreault Jr. in *Basic Marketing*. "To avoid charges of favoritism, most government customers buy by specification using a mandatory bidding procedure. Often the government buyer is required to accept the lowest bid that meets the specifications." **Choosing the lowest bid is especially unwise when specifications are inadequate as with the MS3212 and MS3213 self-sealing fastener prints which don't even mention the critical elements of the design.**

The lowest bid mentality has changed the face of the fastener industry. With the onslaught of foreign made fastener products, quality American fastener manufacturers were suddenly thrust into a fight for survival. To stay alive in the world of the lowest bidder, quality American companies were forced to cut the cost of manufacturing by networking with foreign companies that could provide wire at lower prices. Unfortunately, in most cases the lowest bidder was still those who provided the lowest quality imported products, and the United States steel companies were a casualty of this new price war. Consequently, fastener failures were being reported throughout the Department of Defense (DOD) as the United States was inundated with low quality junk fasteners. Like a plague these low quality fasteners threatened the United States product infrastructure. It was of such great concern that on November 6, 1990, **Congress created the Fastener Quality Act for the purpose "to require that certain fasteners sold in commerce conform to the specifications to which they are represented" for "fasteners used in critical applications, to increase fastener quality and reduce the danger of fastener failure."** This was a valiant attempt, but it didn't stop those willing to falsely certify their substandard products.

A perfect example of this was reported by the New York Times on March 27, 2007. A Florida-based AEY, Inc won an ammunitions contract with the US Army because they were the lowest bidder. AEY, Inc. certified that the ammunition provided by their company met all the requirements specified in the government contract. The \$298 million dollar purchase by the US Army was to provide ammunition for the Afghan army and police forces. The ammunition that AEY, Inc. shipped was more than 40 years old and in decomposing packaging.

Much of the ammunition came from old communist bloc aging stockpiles, including those that the US State Department and North Atlantic Treaty Organization had determined to be unreliable and obsolete, and that the United States government had already spent millions of dollars to have destroyed. The army issued five orders to AEY, Inc. and paid AEY over \$155 million before they were able to suspend the contracts and stop the shipments of these substandard ammunitions. Just like AEY, Inc., **there are companies selling substandard fasteners manufactured to expired patent specifications that are made of the lowest quality materials; yet, the manufacturers of these products claim to meet the specified but inadequate government contract requirements.** Sellers of these substandard fasteners have adopted the Ford Pinto marketing philosophy and are selling millions of these substandard self-sealing fastener products to an unsuspecting public who are unaware that they are purchasing “ticking time bombs”!



To understand how this occurs, we need to look at the purchasing agents who are the link between product manufacturing and end product construction. As with the commercial sector, the government has many purchasing agents that are responsible for ordering components to meet the requirements of the different government facilities. Many companies view their purchasing agents as the make-it or break-it pivot-point in product sales and company survival. The purchasing agent is burdened with cutting cost wherever they can. It's not surprising that with many purchasing agents; fasteners are a common item to be placed on the quality chopping block in lieu of price, especially since the cost difference between quality fasteners and “knock-offs” can be significant. The reason fasteners are in the first wave of cost reductions is because they seem familiar to most people. Buyers mistakenly reason that if they can go to the local hardware store and purchase a big bag of fasteners for \$1.00, they should be able to purchase quality industrial fasteners in the same price range. Then they almost fall off their chair when the quote for quality industrial fasteners comes in at \$50.00 for one piece. They think this is ridiculous, it's just a fastener. They search until they find a company that makes “knock-offs” which in some cases are less than 1/3 the cost. The purchasing agent is elated with this newly discovered stockpile of fasteners, and happily places the order for the cheaper fasteners. **Did they really get a good deal, or did they just purchase “ticking time bombs”?**

The value of a single quality fastener has been grossly underrated. On March 22, 2008, a 20 square foot panel detached from the wing of a 757 during Flight 1250. US Airways reported to the safety board that it had inspected all its 757s since then and found "problems with wing fasteners on several other aircraft, which were

since repaired and returned to service," US Airways said they inspected all 18 of the 757s it owns that use these fasteners and found cracked wing fasteners on six of them, in addition to the plane that lost the wing panel.

It's because of incidents like this, that the inspection team on the Boeing 787 became concerned that the method of assembly used by Boeing might make it impossible to detect a loose fastener after its construction. The safety team stated the reason for their concern was that **"The latent failure of any one fastener leaves the airplane one event away from a catastrophic incident."** Do we really want to take the cheap route when lives are hanging in the balance?



**Self-sealing fastener products must be held to an even higher standard of quality, because in many cases the self-sealing fastener is the only thing between product failure and success.** In many products the self-sealing fastener must provide 100% pressurization with a zero failure tolerance, and Sealtight® Technology is the only company who can guarantee these results. For the last 20 years Sealtight® Technology has provided the highest quality self-sealing fastener products in the world, and Sealtight® Technology is the only company holding current 21<sup>st</sup> Century patents for self-sealing fastener technology.

In the present economic environment, we are all faced with difficult decisions, and no one wants to accept the "you get what you pay for" perspective because that doesn't fall within the parameters of the current cost cutting mentality. **Follow the principal of the Fastener Quality Act, when it comes to buying fasteners always choose quality over price.** Don't be the one responsible for the loss of life because you wanted to save a few dollars. Buying low quality fasteners is just not worth the cost. Let's not perpetuate the "ticking time bomb". Instead, it's time we learn from the mistakes of the past.

For more information about choosing quality fasteners, avoiding the pitfalls of purchasing cheap fastener products, and fastener failure incidents, go to [www.SealtightTechnology.com](http://www.SealtightTechnology.com).

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