



MECHANICAL ENGINEERING NEWS

November 18, 2002

A newsletter for the UML Mechanical Engineering community (also available online at <http://m-5.uml.edu>)

Any items you would like to see included in the newsletter or any suggestions/comments?

Please email them to: peter_avitabile@uml.edu or leave them with Jackie Paradise in the Mech Eng office.

Mechanical Seminar Series

On Friday November 22th, Tom O'Leary of EMC will talk about "Product Reliability Enhancement through Highly Accelerated Life Testing (HALT)" at the Mechanical Engineering Seminar Series.

Information storage products require a high degree of quality and reliability in the field. Products manufactured and shipped without adequate testing could experience very high early life failure rates. Early life failure is due to inherent latent defects. Latent defects are the direct result of such things as poor workmanship and variations in the manufacturing process. Therefore, prevention of early life failures in the field is critical to maintaining high levels of reliability.

Thermal cycling in combination with vibration testing has been demonstrated to be an effective tool to screen out inherent latent defects. However, if product optimal stress limits are not clearly understood and product is tested beyond its optimal stress levels, excessive fatigue or premature wearout can result. What is required are product designs which have a high level of testability, and are thus suitable for screening of latent defects without introducing excessive fatigue.

By applying various mechanical analysis techniques and tools to the design and test of product, a highly robust product design, suitable for safe and effective testing of product is assured. The end result is a highly reliable product over its useful life in the field.

Spotlight on COMPANIES



EMC
Hopkinton, MA
www.emc.com

EMC Corporation is the world leader in information storage systems, software, networks and services and the only company 100% dedicated to automated networked storage. EMC solutions and services help organizations of all sizes across the globe to better and more cost-effectively manage, protect and share their information. As a result, customers are able to reduce costs through consolidation of storage and server resources, centralize and automate manual storage management tasks, and improve overall business continuity and flexibility.

Based in Hopkinton, Massachusetts, EMC is represented by more than 100 sales offices and distribution partners in more than 50 countries and has the world's largest storage-dedicated direct sales and service force. Many of the world's major computer companies resell EMC's systems and software, including NEC, Fujitsu Siemens, Unisys, Groupe Bull and NCR. EMC has also formed alliances with leading software, networking and services companies, including KPMG, Microsoft, SAP and Oracle, to better serve customers.

EMC employs more than 17,000 people worldwide, including about 7,000 in Massachusetts. The company's stock is traded on the New York Stock Exchange under the symbol EMC and is a component of the S&P 500 Index.



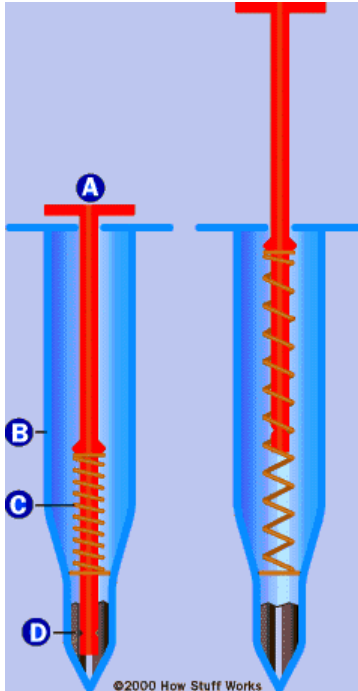
MECHANICAL ENGINEERING NEWS

November 18, 2002

A newsletter for the UML Mechanical Engineering community (also available online at <http://m-5.uml.edu>)

Turkey Day is Almost Here !!!

Well just about everyone has Turkey on Thanksgiving Day. Did you ever wonder how that little pop up timer knows when the turkey is done ???



Turkey is done when it reaches 185 degrees Fahrenheit (85 degrees Celsius). If you didn't have a pop-up timer, you could use a meat thermometer to figure out the temperature of the meat. But the pop-up timer, which often comes with a turkey that you buy at the grocery store, can be more fun because it is binary -- there's no trouble reading a pop-up timer because the answer is either "Yes" or "No"!

The soft metal at the bottom of the device is solid at room temperature and turns to a liquid (melts) at about 185 degrees Fahrenheit (85 degrees Celsius). When the metal turns to a liquid, it frees the end of the red stick that had been trapped in the metal. The spring pops the red stick up and you know the turkey is done!

One little-known fact is that these timers are reusable. If you dip the tip in hot water it will remelt the metal and you can push the pop-up piece back into the metal. Then let it cool, and the pop-up piece will be back in its original position -- ready to use again!

And of course, I expect that all the students in dynamic systems are wondering if the little mass, spring, damper system is overdamped, underdamped or critically damped. And whether the roots are complex conjugates or real valued. And if the response stable or not. But one thing is for sure - you will all have had your fill of turkey until next year. Have a great holiday!!!

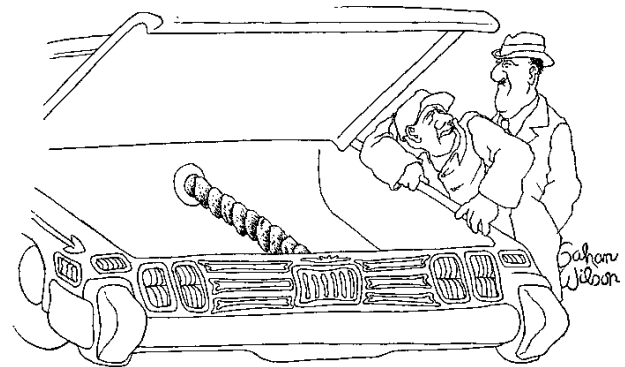
DON'T FORGET THE SEMINARS!!!

Mechanical Engineering Seminar Series -
Speakers for Fall 2002

Nov 22 Tom O'Leary – EMC Corporation
Dec 6 Dave Crompton – SSG Inc – Optical Systems
Dec 13 John Mirageas – Flir Systems

On the lighter side

AutoMechanics 101 – Learning how your car works



"It's what I figured. Your rubber band has gotten old."