



NEWSLETTER

Oklahoma Section

American Chemical Society

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November 1, 2009

Military Explosives

Friday - November 20, 2009
University Center Room 301
University of Central Oklahoma
Edmond OK 73034

J. Keith Butler

American Ordinance LLC
Trenton, NJ

Many different explosive compounds exist but not all have practical applications. To be suitable for military use the explosive material must meet certain characteristics. These characteristics and the historical development from primitive weapons to modern non-nuclear military explosive weapons will be discussed.

The study of military explosives is very broad, over 110 explosives are available to the ordnance engineer and the list is growing. Information will be presented about the chemistry and physics of the detonation process and the characteristics that make an explosive suitable for military use. Examples of explosive compounds from a variety of chemical classes will be given. The military classifies explosives based on their power and sensitivity. Functional ordnance utilizes this variation in properties to form an "explosive train". This process uses multiple explosive charges of differing sensitivities and powers to meet the needs of specific applications. This and the shaped charge effect will be explained and examples of their implementation in modern ordnance will be given. The presentation is a general survey and is suitable for a non-technical audience.

[Reservation Information on Page 2]

Schedule:

6:00 PM Reception: Howell Hall Atrium
University of Central Oklahoma

7:00 PM Dinner: Room 301
Nigh University Center - UCO

8:00 PM Speaker: Nigh University Center - UCO
J. Keith Butler

Dinner Menu: Rancher's BBQ Buffet: Grilled hickory chicken, sliced BBQ brisket, pulled pork, ranch style beans, mini corn cob, cornbread with butter, potato salad, green salad, apple pie or peach cobbler, coffee, tea.

Cost: \$18.00-ACS Member; \$5.00-ACS Student Affiliate.

Deadline: Monday, 11/16/08; 5:00 p.m. Carla Supon: 405.974.5732 csupon@uco.edu

J. Keith Butler

Mr. Butler received his B.S. in Chemistry from Union University in 1983 and his M.S. in Inorganic Chemistry from the University of Memphis in 1987. He is the Chief Chemist for the Milan Army Ammunition Plant in Milan, Tennessee. He has over 20 years experience performing acceptance testing on components used to Load, Assemble, and Pack ammunition items for the US Army. In addition to his laboratory duties, he is a spill response team member, hazardous waste operator and has served as the plant Chemical Hygiene Officer. Mr. Butler has published notes in the Journal of Chemical Education. He is an adjunct professor of chemistry at Jackson State Community College teaching introductory and freshman chemistry. Mr. Butler sits on the Army's Environmental Restoration Advisory Board for the Milan Army Ammunition Plant, twice serving as the community co-chair. He is also an active judge for the West Tennessee Regional Science Fair, an affiliate of the Intel International Science and Engineering Fair. He is active in the American Chemical Society and was the 2007 Chair for the Kentucky Lake section. He was recently appointed to serve on the ACS Joint Board Council Committee on Public Relations and Communications. He is the Industrial Advisor to the Union University SAACS.

Study finds no big difference in organic, conventional food.

An independent review commissioned by the Food Standards Agency [FSA] shows that there are no important differences in the nutrition content, or any other additional health benefits of organic food when compared with conventionally produced food.

Oklahoma Cooperative Extension Service Pesticide Coordinator Dr. Jim Criswell published the results of the review in a recent issue of Pesticide Reports.

The OSU newsletter said Gill Fine, FSA director of consumer choice and dietary health, gave the following synopsis of the review:

“Ensuring people have accurate information is absolutely essential in allowing us to make informed choices about the food we eat. This study does not mean that people should not eat organic food. What it shows is that there is little, if any, nutritional difference between organic and conventionally produced food and that there is no evidence of additional health benefits from eating organic food.”

Dr. Criswell reports that the study, which took the form of a systematic review of literature, was carried out by the London School of Hygiene and Tropical Medicine [LSHTM].

LSHTM's team of researchers reviewed all papers published over the past 50 years that related to the nutrient and health difference between organic and conventional food, Dr. Criswell reported.

“The systematic review is the most comprehensive study in this area that has been carried out to date,” the newsletter reported.

Company Converts Vehicles To Run On Alternative Fuel

Selected Excerpts from a story by Jay F. Marks in the Friday October 16 2009 edition of The Oklahoman.

Okarche – One vehicle at a time, OEM systems Inc., is helping to change the way many companies and municipalities fuel their [vehicle] operations.

The Okarche-based truck equipment specialist is on pace to convert 400 vehicles to run on compressed natural gas this year. Their number could triple by 2010, said John Lubber, general manager of sister company, Carter Chevrolet Agency.

Lubber said OEM got into the conversion business at the urging of Chesapeake Energy Corp., a longtime customer and an outspoken advocate of [compressed] natural gas as an alternative to gasoline.

Lubber said he was fascinated by the conversion process, but company officials did their homework before agreeing to take on the work.

They checked out companies that make conversion kits, eventually forging a relationship with IMPCO Technologies Inc., because its kits are certified for use on Chevrolet engines. OEM also is a dealer for companies that make conversion kits for some Ford and General Motors vehicles, he said.

The company turns out bi-fuel vehicles that can run on gasoline or CNG. Lubber said it's the most popular conversion process, given the dearth of CNG refueling stations open to the public.

Each conversion costs from \$10,000 to \$12,500 he said.

Lubber said it takes about two days to convert a newer model truck or SUV so it can run on CNG. Conversion kits aren't available for most cars yet.

Once the work is finished, there is little to indicate the fuel change in a converted Tahoe. The white SUV bore a pair of diamond-shaped blue CNG decals on the back, but the matte black skid plate covering the new gas tanks is scarcely noticeable.

The valve to fill the CNG tanks is nestled alongside the gasoline slot.

David Smith, OEM's vice president of operations, said the company uses top-quality materials so the converted vehicles will be durable.

Newsletter Editor comments:

[1] No mention made of the current cost of a gallon of CNG.

[2] What's the mpg "equivalency" of a gallon of CNG vs a gallon of gasoline?

[3] The CNG tanks are mounted under the rear of the pickup and SUV where the spare usually is.. Where does the spare go now? In a pickup, it could be "mounted" in the bed. For an SUV????

[4] In a car, the CNG tanks would likely go in the trunk. Spare tire goes where? And now, no trunk space!

[5] Conversion vehicles would be "restricted" to CNG operation in major metro areas due to lack of public CNG refueling stations in other areas.

[6] A "typical" F-150 would easily cost \$30K. Now add the \$10K CNG conversion. What's the "payback" time for the conversion?

[7] At trade-in time, would a dealer allow "extra" for the CNG conversion?

[8] Higher insurance premium for a CNG converted vehicle?

[9] Any factory warranty "problems" for a new vehicle converted to CNG operation?

Clunkers in Practice

From the 10/05/09 edition of The Wall Street Journal.

Remember "cash for clunkers", the program that subsidized Americans to the tune of nearly \$3 billion to buy a new car and destroy an old one? Transportation Secretary Ray LaHood declared in August that, "This is the one stimulus program that seems to be working better than just about any other program."

If that's true, heaven help the other programs. Last week U.S. automakers reported that new car sales for September, the first month since the clunker program expired, sank by 25% from a year earlier. Sales at GM and Chrysler fell by 45% and 42%, respectively. Ford was down about 5%. Some 700,000 cars were sold in the summer under the program as buyers received up to \$4500 to buy a new car they would probably have purchased anyway, so all the program seems to have done is steal those sales from the future. Exactly as critics predicted.

Cash for clunkers had two objectives: help the environment by increasing fuel efficiency, and boost car sales to help Detroit and the economy. It achieved neither. According to Hudson Institute economist Irwin Stelzer, at best,

“the reduction in gasoline consumption will cut our oil consumption by 0.2 percent per year or less than a single day’s gasoline use.” Burton Abrams and George Parsons of the University of Delaware added up the total benefits from reduced gas consumption, environmental improvements and the benefit to car buyers and companies, minus the overall cost of cash for clunkers, and found a net cost of roughly \$2,000 per vehicle. Rather than stimulating the economy, the program made the nation as a whole \$1.4 billion poorer.

The basic fallacy of cash for clunkers is that you can somehow create wealth by destroying existing assets that are still productive, in this case cars that still work. Under the program auto dealers were required to destroy the car engines of trade-ins, then smash them and send them to the junk yard. As the journalist Henry Hazlitt wrote in his classic “Economics in One Lesson,” you can’t raise the living standards by breaking windows so some people can get jobs repairing them.

In the category of all-time dumb ideas, cash for clunkers rivals the New Deal brainstorm to slaughter pigs to raise pork prices. The people who really belong in the junk yard are the wizards in Washington who peddled this economic malarkey.

One of the letters to-the-editor in regard to the above article.

You paraphrased journalist Henry Hazlitt’s observation that “**you can’t raise living standards by breaking windows so some people can get jobs repairing them.**” However, if you break them, then replace them with energy-efficient windows, you may be eligible for significant federal tax credits under the Energy Star program sponsored by the U.S. Environmental Protection Agency and U.S. Department of Energy.

Michael Down
Portland, Ore.

The Free Enterprise Nation
Add Your Voice To Ours
The Free Enterprise Nation.org
1.877.770.4336

Selected Excerpts from a full page ad in the Tuesday, September 23, 2009 Wall Street Journal

The Free Enterprise Nation is the first national organization to represent the economic interests of those who work in and support the “private sector” portion of our economy. We are Democrats, Republicans and Independents. We are employers and employees. We share a common goal that transcends political parties: To preserve and protect free enterprise in America.

The private sector provides pay and benefits for public sector workers that we cannot afford to provide for ourselves.

According to the US Government’s Bureau of Economic Analysis:

- The average federal employee earns \$119,982 per year in compensation and benefits.
- The average private sector employee earns \$59,909 per year in compensation and benefits.
- To cover the additional pay and benefits of federal employees, **\$100 billion a year** is taken from the private sector in income taxes. And federal employees make up only 2 million of the 20 million that work in the public sector.

More than 85% of public sector workers have defined benefit pension plans in addition to Social Security.

- The majority of these plans allow public sector workers to retire 10-15 years **EARLIER** than is permitted by Social Security. They also provide much higher monthly benefits.
- Most public sector workers are provided with free or heavily subsidized health insurance during the term of the “early” retirement.

Government is often the problem, not the solution.

- 1965: The Great Society was created. \$8 billion went to entitlement programs that year. Now we’re spending **\$500 Billion** a year, and what has changed?

- 1977: The Department of Energy was created to make us “independent of foreign oil.” Now it’s a bureaucracy of 18,000 people with a **\$25 billion** annual budget. Those who converted to coal and those who pay for energy are now being penalized , and we’re still dependent on foreign oil.
- 1983: A Trust Fund was created to ensure that Social Security was sound for the retirement of baby boomers in 2011. After 25 years of increased payroll taxes, **\$2.5 Trillion** of our money was taken from this fund and every penny was spent on other things. And we still face a crisis.
- 2008: The TARP and stimulus bills authorized another **\$1.5 Trillion**, the majority of monies in the form of new debt, if allocated, must be repaid by taxpayers.
- 2009: The government wants to “solve” our healthcare problems by taxing us **another trillion dollars**.

We need economic solutions that work for everyone.

The private sector is the vast majority of this country and we pay the vast majority of taxes. And we believe that earns us a seat at the table.

- The private sector: 5 million companies and 115 million employees [of which 8 million are currently unemployed].
- The public sector: 89,000 taxing authorities and 20 million workers are employed as “public servants” in government and public education. This sector is fully supported by tax revenues, including fees and tolls.

The time has come to take back control of our government. We have assembled what may be the largest collection of facts and data available to the public on how our money is being spent. Visit www.TheFreeEnterpriseNation.org to learn more and begin the fight to turn America back to a country “For the People.”

Oklahoma Section Website:

Dr. James J. Dechter – is the Section webmaster. Jim is Professor of Chemistry at the University of Central Oklahoma. Jim served as UCO Chemistry Department Chair from 2000-2004. Jim was also Section Chair in 2001.

To post information on the website, contact Jim. 405.974.5435. e-mail: jdechter@uco.edu

This year’s Southwest Regional Awards Winners, to be presented at the upcoming SWRM in El Paso Texas.

- Southwest Regional ACS Award: Dr. Rasika Dias [University of Texas, Arlington]
- CHED Award for Excellence in High School Teaching: Dr. Fazlur Rahman [Oklahoma School of Science and Mathematics]
- Stanley C. Israel Diversity Award: Dr. Antoine Carty [Prairie View A&M University]
- E. Ann Nalley Regional Award for Volunteer Service: Dr. Joe Hightower [Rice University]
- Southwest Regional Industrial Innovation Award: Dr. Tushar V. Choudhary, Dr. Stephen Parrott, and Dr. Byron Johnson [Conoco Phillips Company]

All awards will be presented at the SWRM Awards Banquet, Thursday November 5th, at 7:00 PM. Tickets are still available for the banquet. If you have not yet reserved a spot and wish to attend, please contact me as soon as possible, by this weekend at the latest.

Secretary’s Note: Ed Neparko

My term as Section Secretary ends December 31, 2009. I’ve decided not to “run” for another term. I offered to continue as Newsletter editor. The Section’s Executive Committee accepted my offer.

The reprinted letters and articles as well as the editor’s unsigned article[s] in this Newsletter do not necessarily reflect the views of the Oklahoma Section of the ACS.

November 2009 Section Meeting

Friday 20 November, 2009

**Room 301
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University of Central Oklahoma
Edmond OK 73034**

Speaker: J. Keith Butler

Military Explosives.



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