



SEKTIONEN FÖR DETONIK OCH FÖRBRÄNNING

The Swedish Section for Detonics and Combustion
affiliated with *The Combustion Institute*
(www.combustioninstitute.org)



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PEACE TECHNOLOGY

A NEW SWEDISH INDUSTRY WITH HUMANITARIAN, SECURITY AND COMMERCIAL OPPORTUNITIES

WHAT?

Peace Technology is defined as technical measures that can help remove obstacles to the return to or establishment of a normal society. Many vulnerable Nations are characterized by high incidence of violence, which will constitute a serious obstacle to any social development. Abundant supply of weapons, ammunition and explosive substances will facilitate, serve to increase and aggravate the violence. Violence also increases splits in society, often for generations to come. Management, control, clearance, destruction and recycling of munitions and weapons are therefore areas of particular importance in order to enable the building of a peaceful society. Communication and supply of life essentials are, of course, other equally important areas. The United Nations are working very actively with these issues, among others through the initiatives IATG and SaferGuard, which Sweden has acceded to.

HOW?

Initiation of a project aimed at identifying and initiating networks of actors holding peace technological skills, who can contribute to innovation, marketing and production in the field.

WHY?

There is still much peace technological expertise in Sweden, but which, unfortunately, is at risk of disappearing, in part because military funding in related areas has been reduced dramatically or disappeared. It would be natural that we now exploit this knowledge and invest

¹ Inspired by "Non-violence", sculpture by the recently deceased Swedish artist C-F Reuterswärd.
www.fredsteknik.se

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resources in an industry that can support emerging peace, facilitate control of arms, ammunition and explosive substances and implement environmentally sound disarmament by decommissioning military surplus. An investment in a Peace Industry, for example as part of development aid from Sweden and other sources, could make Sweden a unique country, which would seek to eliminate the roots of evil rather than to try to relieve the symptoms! Schools built for aid money do little good if the children get shot at and killed on the way there, and humanitarian aid will not reach those in most need, if they are located in a high violence area.

FOR WHOM?

Many Swedish companies and organisations have great Peace Technological knowledge and products that could be of great use in humanitarian aid and other foreign activities. Abroad, people are often aware of the Swedish competence and are asking for it. Most of the Swedish foreign aid is currently procured on international and local markets in the current aid countries. Sweden is also, despite its position as one of the largest contributors, little involved in the totally 17 B\$ of contracts issued by United Nations agencies, and additional funding from other International organisations, something that the Ministry of Foreign Affairs and Business Sweden are working with right now. You will then miss utilising the prominent competencies and product areas that exist in Sweden. An investment in a Peace Technology industry sector would mean promotion of Swedish companies and Sweden in a unique and proud way!

WHEN?

Identification of the technical expertise of Swedish companies has started². Through this project, the inventory would be made more comprehensive, compiled, disseminated, and be the first step towards the creation of a new, Swedish, sustainable, future-oriented Peace Technology sector, which could provide good international support and help balance Sweden's reputation as a major arms exporter.

*Professor Bo Janzon
CEO, SECRAB Security Research*

Föreanta Nationernas Program SaferGuard växer och utvecklas vidare

Jag visar här på några användbara länkar där Du kan läsa mera.

På <https://www.un.org/disarmament/un-safeguard/> kan man läsa om den senaste utvecklingen i projektet.

- Det finns nu mer än 800 miljoner lätta vapen i världen.
- Många av dessa vapen är i dag i händerna på kriminella och bidrar till våld och krig.
- FN nedrustningskontor arbetar med konventionella vapen, kärnvapen,

United Nations Program SaferGuard grows and develops further

I show here some useful links where you can read more.

On <https://www.un.org/disarmament/un-safeguard/> you can read about the latest development of the project.

- There are now more than 800 million small arms in the world.
- Today many of these weapons are in the hands of criminals and contributes to violence and war.
- UN disarmament office works with conventional weapons, nuclear, chemical and biological weapons

² Janzon, B, Axelsson, L, Lövgren, J-E, 2015: Fredsteknik (Peace Technology). Annual report 2014 by the Royal Swedish Academy of War Sciences, Div. IV, KKrVA Handlingar och Tidskrift 219(2015)No.4, pp. 82-106.

- kemiska och biologiska vapen
<https://www.un.org/disarmament/convarms/ammunition/iatg/>.
- Nedrustning och stopp för illegal handel med militära vapen är viktiga uppgifter för FN.
- FN regelverk för Arms Trade Treaty (ATT) ratificeras nu av många länder.
- En viktig del av ATT är IATG.
- International Ammunition Technical Guidelines (IATG) omfattar nu 1800 sidor.
- 86 Nationer har skrivit på att man kommer att implementera IATG.
- <https://www.un.org/disarmament/un-safeguard/toolkit/> ger många användbara verktyg.

Nu arbetar man för fullt med att etablera ett globalt utbildningscentrum för IATG i Geneve.

Har du frågor är du välkommen att kontakta Hans Wallin på Cesium.

<https://www.un.org/disarmament/convarms/ammunition/iatg/>.

- Disarmament and stopping illicit trading of military weapons are important tasks for the United Nations.
- UN framework for the Arms Trade Treaty (ATT), is now ratified by many countries.
- An important part of ATT is IATG.
- International Ammunition Technical Guidelines (IATG) now comprises 1800 pages.
- 86 nations have agreed to implement IATG.
- <https://www.un.org/disarmament/un-safeguard/toolkit/> provides many useful tools.

Now, work is in full swing to establish a global training center for IATG in Geneva.

If you have questions, please contact Hans Wallin of Cesium.

AGW

Editor Dr Torbjörn Lindblom

To the Editor

Your AGW series is commendable and well needed, not least in view of the fact that the Section has Combustion in its name. Fundamental questions have been asked and facts and data have been presented but the expected discussion concerning this purely scientific climate issue has failed to come about.

The prestigious word "science" is frequently misused in public media (e.g., "the carbon dioxide hypothesis is scientifically proved"). In contrast to facts and measuring data a hypothesis is neither "true" nor "false", it can only be judged by how well it conforms with known facts. The trivial name for hypothesis is "guess". One cannot "prove" a guess.

The scientific method deals with effects and their causes. What effects is the climate-question all about? Temperature increase (global warming)? Satellite temperature measurements show no temperature increase since the solar intensity maximum 2002. This cannot *per se* be a reasonable threat because greenhouse effect of human emissions of CO₂ is so small that it cannot be measured (0,06%). The dominating greenhouse gas is water vapour 95%+. The cause of alarming weather effects such as polar ice melting, flooding, tornadoes has nothing to do with CO₂ emissions but with ocean currents such as PDO or El Ninos or La Ninas or by volcanic activities.

The basis for climate discussions is assessment of relevant facts. Whatever the conclusions about the merits of the CO₂ hypothesis, it should be possible to agree upon sheer facts. It is not so (the polar ice is /is not melting away, etc.)

In March, I was invited to Heartland Institute in Chicago to lecture on AGW. The lecture was filmed and can be seen on Youtube:

<https://www.youtube.com/watch?v=poi8YLUigVs>

The lecture was sent live with today's technology, which resulted in many positive comments from all over the world. Since the lecture is based on a great deal of facts unknown

to most people, I do hope that Section members take a look at the film and revert to you with their comments, thereby starting a serious discussion under your AGW heading about assessment and interpretation of climate-related facts.

A conference on climate change is being planned this fall together with a Norwegian group coming to Stockholm.

Dr Fred Goldberg
The Swedish Polar Institute

Studiebesök för SDF:s medlemmar

I Newsletter 1/2016 efterfrågades medlemmarnas intresse för studiebesök i Karlskoga med omnejd. För närmare planering måste intresseanmälan och önskemål om besöksobjekt snarast göras till Ola Listh på tel. 070 5843510.

Conferences 2016

- 06-28--07-01 47th International Annual Conference of the Fraunhofer ICT.
Energetic Materials: Synthesis, Characterization, Processing.
www.ict.fraunhofer.de.
- 07-09 12th Workshop on Pyrotechnic Combustion Mechanisms.
Grand Junction, Colorado, USA. <http://ipsusa.org/index2.htm>.
- 07-10--15 42nd International Pyrotechnics Seminar.
Grand Junction, Colorado, USA. <http://ipsusa.org/index2.htm>.
- 07-31--09-05 36th International Symposium on Combustion.
COEX, Seoul, Korea.
- 10-12--13 Konferens om beskyttelse and sikring av bygg.
Forsvarsbygg, Oslo Kongressenter. Norway. www.forsvarsbygg.no.

2017

- 01-29--01-02 43rd Annual Conference on Explosives and Blasting Technique.
Orlando, Florida, USA. www.see.org

Education and Training

Sverige

KCEM. För aktuella konferenser och kurser, se *Nyhetsbrev 2016:1* på webbplatsen www.kcem.se.

U.K.

University of Leeds. www.leeds.ac.uk.

The Royal Military College of Science. www.rmcs.cranfield.ac.uk.

China

Tsinghua University, Beijing.

- 07-19--25 *2016 Tsinghua-Princeton-CI Summer School on Combustion.*
Combustion Chemistry, Combustion Physics, Dynamics of Combustion Waves in Premixed Gases, Fundamentals of Unsteady Combustion and Combustor Processes, and Mechanism Reduction and Computational Flame Diagnostics.

USA

Franklin Applied Physics. www.FranklinPhysics.com, info@franklinphysics.com.

- 07-25--29 *Electro-Explosive Devices: Functioning, Reliability, and Hazards.*

Among the topics are: definitions and history of explosives, types of pyrotechnics, explosives and propellants, sensitivity and functioning mechanisms, safety versus reliability.

The following mail dated 9 May shedding more light on this course has been received:

"Franklin Applied Physics has been a leader in EED testing since the 1940's and has offered safety training courses since 1977. Our present course, Electro-Explosive Devices: Functioning, Reliability, and Hazards, will be offered 25-29 July 2016 in Oaks, Pennsylvania USA. The emphasis of this course is safety through understanding of the underlying physical phenomena. Current instructors are James Stuart, Ph.D., who has worked with EEDs for nearly 40 years, and Beth Shimer, Ph.D., with over 20 years in the business. Both instructors have performed many different kinds of tests on various types of EEDs, and have investigated numerous accidents involving EEDs. This hands-on experience provides many interesting examples which illustrate the topics covered in the course.

Major topics covered included:

- definitions and history of explosives
- types of pyrotechnics, explosives and propellants
- types of EEDs including semiconductor bridges, laser initiated devices, exploding bridge-wires, flying plate initiators, carbon bridges
- explosive trains and systems, fuzes, safe-arm devices
- sensitivity and functioning mechanisms
- EED statistics including Bruceton and Langlie tests
- output and applications
- safety versus reliability
- hazard sources – lightning, static electricity, electromagnetic energy (RF, EMP, light, etc.), heat, flame, impact, vibration, friction, shock blast, ionizing radiation, hostile environments, and human error
- precautions, safety practices and Standard Operating Procedures
- thermal modeling of EED firing characteristics
- accuracy, precision, and repeatability of EED thermal parameter evaluation
- use of EED thermal parameters in evaluation of lot-to-lot variation and quality control
- use of EED thermal parameters in aging evaluations
- accuracy and repeatability of Langlie and Bruceton evaluations.

The fee for this year's course is \$1,610, which does not include food or lodging. Franklin has established a discounted room rate with The Hampton Inn, Phoenixville, PA at a cost of \$119 a night. The reservation cut-off date for this discounted rate is July 10, 2016. For more information about the course, including topics to be covered, please visit our website <http://franklinphysics.com/franklin-explosives-training-course>."

RAM, Inc.

09-07--09 Blasting and Explosives Safety Training (BEST).
Orlando, Florida, USA. <http://www.ramets.com>.

International Society of Explosives Engineers. Visit www.see.org for the society's newsletter *Explosives Industry News*.

Literature

PDF:s of the latest articles published in the Chinese *Defence Technology Journal* (published bimonthly) can be downloaded from the website www.dt22149147.com:

Yu-tao Lou, Hai-yuan Li, Bao-ming Li:

Research on proximity effect of electromagnetic railgun.

Jie Ma, Zhi-hua Chen, Zhen-gui Huang, Jian-guo Gao, Qiang Zhao:

Investigation on the flow control of micro-vanes on a supersonic spinning projectile.

Xing-long Li, Wen-jin Yao, Li-kun Zhu, Xiao-ming Wang, Ji-yan Yu:

Ground target localization algorithm semi-active laser terminal correction projectile

Vladimir Cech, Jiri Jevicky:

Improved theory of generalized meteo-ballistic weighting factor functions and their use.

Mark Reynolds, William Huntington-Thresher:

Development of tuneable effects warheads.

Patrik Lundberg, René Renström, Olof Andersson:

Influence of confining prestress on the transition from interface defeat to penetration in ceramic targets.

Xiao-wei Feng, Jing-zhen Chang, Yong-gang Lu:

Experimental research on HEL and failure properties of alumina under impact loading.

Elmar Strassburger, Steffen Bauer, Steffen Weber, Heiner Gedon:

Flash X-ray cinematography analysis of dwell and penetration of small caliber projectiles with three types of SiC ceramics.