

# Lettre du



# Newsletter



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## NIMIC/MSIAC 20TH ANNIVERSARY



The organisation that once upon a time was called Pilot NATO Insensitive Munitions Information Center (PNIMIC), dropped the Pilot status to stand up and officially become NIMIC, then expanded its reach and charter to grow into the current NATO Munitions Safety Information Analysis Center (MSIAC) celebrated its 20th Anniversary on 5 April 2011 with a one-day workshop and a dinner. The workshop was held at the Chambord Hotel in Brussels, a short walk to the Belgium Military Club Prince Albert where the formal anniversary dinner was held.



The MSIAC Staff, with grand participation and presentations by some of the original PNIMIC and NIMIC creators, Steering Committee Members, and Project Managers, developed and presented an interactive day of renewing old friendships (and making new ones), reviewing and



reminiscing how the NIMIC organisation came to be and flourish, examining the structure and rationale of the current MSIAC version of the organisation and vigorously debating, discussing, and advocating continuation and potential growth arenas. The workshop was

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well attended by 60 individuals from the early days of PNIMIC to today's MSIAC staff and Steering Committee Members.



The Workshop was opened by Dr Jerry Ward, the current Steering Committee Chair, who welcomed all the participants and commented on the great turnout for this event. Jerry Ward then introduced Dr Ron Derr, Chairman of PNIMIC and the first Chairman of NIMIC, who led the first session of the workshop, where several of the creators of PNIMIC and NIMIC, including himself and the early Project Managers of PNIMIC and NIMIC; Mr Ed Daugherty, Mr Marc Défourneaux, Mr Michel Thévenin and Dr Peter Lee, enthralled the audience with reminisces and enlightening stories of the early trials and tribulations that had to be overcome in the creation of this organisation that is celebrating 20 years of improving munitions.

After a coffee break where the discussions never stopped until the time bell was rung many times, the workshop moved into discussing the transition from NIMIC and its focus on Insensitive Munitions to MSIAC with its slightly broader focus. This phase featured a presentation by Mr Patrick Touzé, who had been a Technical Specialist Officer (TSO) in the NIMIC days and was the Project Manager during the transition from NIMIC to MSIAC and the formative years of MSIAC. Patrick Touzé led the workshop through an understanding of the issues, challenges and excitement of restructuring the focus from Insensitive Munitions to overarching Munitions Safety.



Mr Patrick Lamy, who has been the French Steering Committee Member since 1995 and the Chairman of the NATO Ammunitions Safety Group (AC/326) for the last six years, then presented an enjoyable, lighthearted and informative presentation. Patrick Lamy held the audience's rapid attention until the break for a buffet lunch at the Chambord Hotel.



The afternoon started off with Roger Swanson, the current Project Manager, introducing the current TSOs (Mr Pierre Archambault - Propulsion Technology, Dr Ernst-Christian Koch – Energetic Materials, Dr Pierre-Francois Péron – Warhead Technology, Dr Michael Sharp – Munitions Systems and Mr Thomas Taylor – Munitions Safety, Transport &

Storage) and the Systems & Database Administrator (Mr Michael Longie) providing very enlightening presentations regarding their areas of expertise.

After two hours of reviewing the current state of affairs a much needed coffee break was held. This coffee break similar to the one in the morning resulted in the current TSOs being individually surrounded by the predecessors who all had questions, comments, suggestions, and viewpoints to express. Again, the discussions never stopped until the time bell was rung many times, calling the audience back for the last session of the Workshop.



A decision was made to forgo the planned MSIAC Accomplishments presentation by Roger Swanson and move directly into the joint presentation "MSIAC Future" by Jerry Ward and Roger Swanson and an open discussion forum. This was a wise decision and they only made it through two slides of their presentation as the audience was more interactive than anticipated. Of course, in hindsight, such interaction should have been anticipated as those who attended the workshop all had great affection for PNIMIC, NIMIC and MSIAC as for some they had dedicated over 20 years in overseeing its

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growth and success.

The discussion engendered by the workshop and the vigorous discussion on the future of MSIAC carried over into the anniversary dinner where Captain Jacqui King (RAN) immediately preceding Jerry Ward was the after dinner speaker. The dinner was also highlighted by a toast before dinner by Ron Derr to those missing and not forgotten and he hosted the "Tremors" session after the dinner formalities where members of the event could express their feelings and overarching thoughts.

On the same occasion the MSIAC Steering Committee meeting took place on April 6 & 7 at NATO HQ, as well as AC/326 Sub-Groups 5 and 6 meetings on April 6-8. On the evening of April 6 MSIAC hosted a cocktail at the Salon des Ambassadeurs, NATO HQ and participants from the SG meetings were invited along with the NADReps from the member delegations, colleagues from NATO Defence Investment Division and other NATO divisions to join us.



An MSIAC stand was set up in the NATO Press area on April 5 and 6 with posters and a video advertising our products, services and activities. Members of MSIAC were present to answer questions and hand out MSIAC souvenirs.



Spouses were not ignored either; they were treated to a day hosted by Mrs Bonnie Swanson and Mrs Christine Archambault, which included a "hands-on" tour of a chocolate factory where chocolate turtles and truffles were created, a guided tour of the Grand Place and a "Dame Blanche" at the famous Metropole Hotel. They rejoined their partners for the dinner at the Prince Albert Club .

The next step in this celebration and journey will be for MSIAC to summarise all the comments and feedback that was received during and after the workshop in a report for the Steering Committee.



## NEW ON OUR WEBSITE

[www.msiac.nato.int](http://www.msiac.nato.int)

⇒ IM Technology Gaps Workshop - Updated programme and Registration Form. See article on page 4 of this Newsletter.

## IM TECHNOLOGY GAPS WORKSHOP

### “Reducing Effects from Shaped Charge Jets, Fragments and Explosively Formed Projectiles”

#### Overview

The workshop will address how to reduce or mitigate the sensitivity of munitions (packaged and unpackaged) to fragments, shaped charge jets (SCJ) and explosively formed projectiles (EFP).

Discussions will include both existing munitions and new/upgraded or proposed munitions in development. The workshop will examine shortfalls in technology and potential remediation options. It will also address issues encountered to reduce the munitions response to these threats in operational theatres, related mitigation shortfalls based on credible aggression scenarios and potential remediation options.

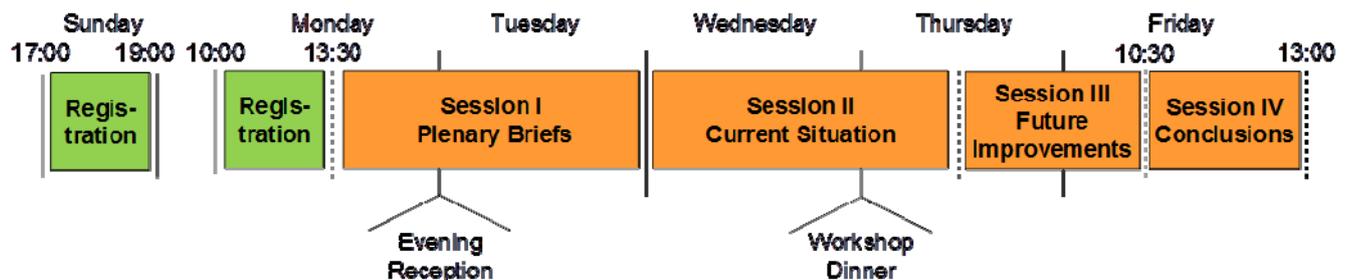
The participation of warfighters and people dealing with munitions in operations is essential to bring their experience from the field, orientate and focus workshop discussions on their issues. Areas where contributions will be highly beneficial are:

- Threats and aggression scenarios in operational theatres:
  - The types of threats encountered in operational theatres, the potential targets (munition/weapon platform, etc) and operational issues of concern;
  - The aggression scenarios during the different operational phases (especially tactical logistics, munitions transportation) and the consequences on the munitions management;
- Issues and achievements to reduce munitions response to unplanned stimuli in the field;
- Benefits/drawbacks of IM munitions in operational theatres, i.e. situations where IM munitions have eased or complicated warfighters' mission.

We encourage those with experience in these areas, or people known to you, to contact us and participate if possible.

#### Location and Dates

The workshop will be held in the Instituut Defensie Leergangen (IDL), a Dutch Defence Academy located in The Hague, The Netherlands from 20 to 24 June 2011. A "Workshop Announcement" providing information on clearances, accommodation and transport is available on the MSIAC website <http://msiac.nato.int> under Latest News.



#### Participants

The workshop is open to Government and Industry from MSIAC nations (Australia, Canada, Finland, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, UK and USA).

#### Registration

There is no registration fee. The workshop is classified at Confidential level. This security classification corresponds to NATO Confidential for NATO Nations, EAPC/PfP Confidential for PfP Nations and National Confidential for Australia. Clearances must be provided by National Authorities to the MSIAC Security Officer, Valerie Cousens, by 10 June 2011.

#### Contact Information

[www.msiac.nato.int](http://www.msiac.nato.int) - Latest News  
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 Fax: 32-2-707.53.63  
 Address: MSIAC, NATO HQ, BZ S030, B-1110, Brussels, Belgium



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## IM Technology Gaps Workshop

### Registration Form

Please complete and return the registration form by

e-mail: [info@msiac.nato.int](mailto:info@msiac.nato.int) or fax: +32-2-707-5363

Participant		
<b>Name</b>		<b>Phone</b>
<b>Organisation name and address</b>		<b>Fax</b>
		<b>Email</b>
		<input type="checkbox"/> <b>Government</b>
		<input type="checkbox"/> <b>Industry</b>
		<input type="checkbox"/> <b>Lunch at IDL canteen on Monday</b> <input type="checkbox"/> <b>Lunch at IDL canteen on Friday</b>
	<input type="checkbox"/> <b>Visit of TNO</b> <b>Friday 24 June afternoon</b>	
Areas of expertise (please tick boxes that apply)		
Fragment Impact Threat		<input type="checkbox"/>
Shaped Charge (SC) Threat	<input type="checkbox"/> <b>Design</b>	<input type="checkbox"/> <b>Mitigation</b>
Explosively Formed Projectile (EFP) Threat	<input type="checkbox"/> <b>Design</b>	<input type="checkbox"/> <b>Mitigation</b>
Gun Propellant Charge Systems		<input type="checkbox"/>
Rocket Motors		<input type="checkbox"/>
Anti-Armour Warheads (SC, EFP, etc)		<input type="checkbox"/>
Blast Fragmentation and General Purpose Warheads		<input type="checkbox"/>
Initiation/Ignition Systems		<input type="checkbox"/>
Energetic Materials		<input type="checkbox"/>
Packaging		<input type="checkbox"/>
Munitions in Operations		<input type="checkbox"/>
Design		<input type="checkbox"/>
Testing		<input type="checkbox"/>
Procurement		<input type="checkbox"/>

**Registration will be accepted on reception of your security clearances** (see Classification and Clearances section of the workshop announcement)

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## LATEST PATENTS OF INTEREST

①⑨ RÉPUBLIQUE FRANÇAISE  
 INSTITUT NATIONAL  
 DE LA PROPRIÉTÉ INDUSTRIELLE  
 PARIS

①① N° de publication : **2 934 260**

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 commandes de reproduction)

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⑤① Int Cl<sup>8</sup> : C 06 B 45/02 (2006.01), C 06 F 21/00, 25/08

⑫

### DEMANDE DE BREVET D'INVENTION

A1

②② Date de dépôt : 28.07.08.

③① Priorité :

④③ Date de mise à la disposition du public de la  
 demande : 29.01.10 Bulletin 10/04.

⑤⑥ Liste des documents cités dans le rapport de  
 recherche préliminaire : *Se reporter à la fin du  
 présent fascicule*

⑥① Références à d'autres documents nationaux  
 apparentés :

⑦① Demandeur(s) : NEXTER MUNITIONS Société ano-  
 nyme — FR.

⑦② Inventeur(s) : WECKERLE ANA, FORICHON CHAU-  
 MET NICOLE et RODRIG ALAIN.

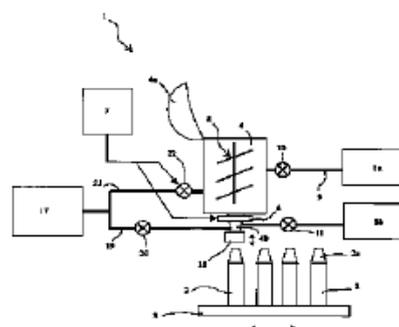
⑦③ Titulaire(s) : NEXTER MUNITIONS Société anonyme.

⑦④ Mandataire(s) : NEXTER SYSTEMS.

⑤④ PROCÉDE DE COULÉE D'UN MATERIAU EXPLOSIF A VULNERABILITE REDUITE ET MATERIAU MIS EN  
 OEUVRE DANS UN TEL PROCÉDE.

⑤⑦ L'invention a pour objet un procédé de coulée d'un  
 matériau explosif à vulnérabilité réduite qui associe, d'une  
 part une phase solide comprenant au moins un explosif so-  
 lide à vulnérabilité réduite, et d'autre part une phase fusio-  
 nnable qui comprend au moins un explosif fusionnable, au  
 moins un flegmatisant et au moins un émulsifiant. Ce procé-  
 dé est caractérisé en ce que l'on met en place le matériau  
 explosif à l'état solide dans une cuve (4) équipée de moyens  
 de chauffe (8a,8b) et dotée de moyens d'agitation (5), le  
 matériau explosif étant mis en place dans la cuve sous la  
 forme de grains préfabriqués ayant des dimensions supé-  
 rieures à la plus grosse granulométrie des matériaux de la  
 phase solide qu'ils renferment.

L'invention a également pour objet un tel matériau sous  
 forme de grains.



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## ACCIDENTS REPORTING

27 December 2010 - 30 March 2011

*(Re-printed with the permission of ility engineering (www.saunalahti.fi/ility)  
from their Hazards Intelligence (Hint) Journal)*

### 27 Dec - Serbia

101227-05-A Cacak. An explosion occurred around 16:30 at the Sloboda military factory in the central city of Cacak, but nobody was injured. All workers were evacuated as soon as smoke was seen pouring out of the storage room. Heavy black smoke and flames were seen at the site. The Defence Ministry said the explosion probably occurred in the storage room.

Head of Ministry of Interior (MUP) Emergency Situations Sector Predrag Maric noted that the storage depot was isolated from the production plants, and that "there should not be any dead, unless some of the workers happened to be at the spot". Maric said that "expert teams from that Sector are on the scene, but still cannot approach the object" in which, according to the official, some "lethal supplies" are stored. Details will be determined once the expert teams enter the depot. Detonations were still being heard 45 minutes after the first explosion.



On December 28, Predrag Maric said the detonations had stopped, while the fire had been extinguished. He added that the fire-fighting and rescue teams had finished their tasks, so now the investigation could begin by the court and other competent bodies to find out the reasons of the disaster. The damage is estimated at around €10 million. The fire broke out in an ammunition warehouse covering 2,000 square metres, where 20, 30 and 40 mm ammunition was kept.

### 5 Jan - USA

110105-04-A Oakland, TN. Kinematics Research. One person was killed and another injured in an explosion around 13:45 at Kinematics Research, an ammunition plant. Witnesses said debris shot into the air during several explosions spanning a half-hour. Fire crews could not get close to the building because of the danger. One fire-fighter was slightly injured.



Investigators believed the incident may have started in a packing area at the facility, but they were not sure what caused it. Kinematics, which has been in business since 1992, makes new and remanufactured ammunition for pistols and rifles. The plant is in a collection of industrial buildings, which were evacuated after the explosion. No homes are nearby.

On January 6, investigators said they knew where the fire started, but did not know how it started or if it could have been prevented.

Oakland Fire Chief Rudy Doyle said: "An explosion occurred in a powder feeding mechanism, which in turn ignited nearby combustibles and ammunition manufacturing components. Because we don't know the ignition source, there's no way to say for sure if it could have been prevented".

State Representative Barrett Rich, who represents the Oakland area, said: "It really makes you think, are we doing what we need to be doing to make sure this doesn't happen again?" Rep. Rich said he plans to meet face to face with Tennessee OSHA (TOSHA) "to find out places like Kinematics Research don't have mandatory inspections". Rich said: "I want to know why OSHA or TOSHA wouldn't have looked at any facility that is using volatile materials. I know that they seem to what to regulate everything else. I can't imagine why they wouldn't have already

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inspected a facility like this".

A spokesman for TOSHA said there is no law requiring safety inspections for businesses, no matter what the business manufactures.

### **20 Jan - Germany**

110120-05-A Leverkusen, Nordrhein-Westfalen. Novasep (formerly Dynamit Nobel). Two persons were seriously injured in an explosion around 15:45 in a warehouse. The two employees were moving a pack of a waste product, which consisted largely of sodium chloride, from tonne containers, when the accident occurred. Spokesman Abrecht Schwerin said the product contained a substance that reacts violently with moisture.

Fire department spokesman Wolfgang Fröhle, said damage was limited. Plexiglas windows in the open hall were damaged and had been torn from their moorings, but there was no fire. Fröhle said: "We have just closed off a large area of the accident". In addition, measurements showed that no contaminants had been left by the explosion, and no danger existed for residents or the environment. Also, production operations on the 80 hectare site was not affected.

On January 22, it was announced that the injuries of the two employees were apparently not as bad as feared at first. Schwerin, said: "One of the two employees could leave the hospital on the evening". The other was still hospitalized, but he had not broken anything or suffered internal injuries. However, both employees would suffer impairment of hearing.

### **23 Jan - India**

110123-02 Mattewara, Punjab. Four Indian Army soldiers were injured when an explosive they were taking to a dump to defuse exploded. According to defence officials, the injured soldiers were immediately moved to a nearby hospital for treatment. Three were discharged after first aid, but one soldier was transferred to a hospital in Jalandhar city. According to information, the bomb disposal squad was re-checking the defused scrap before winding up the operation. A team of four sappers was checking a heap of scrap when the remains of a bomb exploded in the hands of Sapper F P Khan.

The operation to defuse munitions, called 'Operation Saiyam' (patience), was started by the army on November 10, 2010, to destroy around 17,000 munitions of unknown origin. Authorities had discovered the dangerous scrap at the dry port in Punjab's industrial hub Ludhiana, 110 km from Chandigarh, in 2004 but it took them nearly six years to start the process of destroying it. The demolition operation, the biggest one of its kind undertaken by the army, was to be completed in three months.

### **30 Jan - Venezuela**

110130-01-B Maracay, state of Aragua, 130 km (81 miles) west of Caracas. Compañía Anónima Venezolana de Industrias Militares (CAVIM). At least one person died in a series of explosions followed by fires at a munitions plant in central Venezuela. The incident occurred about 04:30.



Vice President Elias Jaua told reporters that no theory about the cause of the explosions can be ruled out at this time because Venezuela is a country "threatened from abroad" and within its territory there exist "groups that act in an insane manner", adding: "If it was an accident, we will explain that to the country, but if it was due to another of the hypotheses, the country will also learn of that". The Vice President said that a 26-year old man died in the incident, but he did not identify the victim or specify how he had died. Later in the day, however, President Hugo Chavez said that the person who died was a woman named Evelyn Marrero, a

mother of three who worked at an Aragua government radio station.

Among the munitions stored at the site were 155 mm, 106 mm, and 105 mm artillery shells, 80 mm mortar rounds, and ammunition for 7.62 mm assault rifles. The 10,000 people who were evacuated as a precaution from the neighbourhoods near the burning military installation were being housed in shelters in Maracay, where they were receiving food and other necessities. According to local media, residents panicked, and received no information as

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to what was happening for several hours. Those evacuated reportedly did not receive drinking water, food, diapers, mattresses and other requisites until noon, though medical aid was available almost immediately. There were reports of looting in several areas of the city.

On February 2, the Cuerpo de Investigaciones Científicas Penales y Criminalísticas (CICPC – Body of Scientific, Penal and Criminal Investigations) began an investigation to determine the causes that led to the explosions at CAVIM. <http://www.youtube.com/watch?v=C50A1upBdDc&NR=1>

### 3 Feb - India

110203-10 Kochi, Kerala. A major explosion occurred in the heart of the city when the explosives warehouse at Siva temple caught fire and exploded. An employee of the warehouse was injured in the accident, which occurred around 10:00. He was immediately rushed to the Medical Trust Hospital. Police said fire tenders from Gandhi Nagar unit were immediately sent to douse the flames: "The entire concrete building collapsed due to the intensity of the explosion. Though there were three persons standing close to the shed when the explosion occurred, only one suffered injuries in the accident."

Police launched an investigation into the cause of the explosion. According to the preliminary investigation, there was no short circuit or other related factors to trigger the fire. Police will ascertain whether there was gunpowder above the permissible limits in the warehouse.

### 11 Feb - Romania

110211-03 Bumbesti Jiu, Gorj County, 230 km (144 miles) west of Bucharest. Sadu Mechanical Plant. Two women died and a man was wounded in an explosion at an arms factory in southern Romania. A representatives of the Gorj Inspectorate for Emergency Situations said there was an explosion followed by fire.

Established in 1939, Sadu Mechanical Plant produces infantry ammunition, infantry weapons, and components for the initiation of pyrotechnic elements. According to the tax authority ANAF, the ailing business is currently deep in debt to the state, and was last year's top borrower in Gorj County.

### 16 Feb - Tanzania

110216-07-A Dar-es-Salaam. At least 21 people were killed in explosions after an accident around 21:00 at the Mbagala army base near Tanzania's commercial capital, Dar es Salaam. Multiple explosions from various arms depots lasted several hours at the Gongola Mbotto military base.



The Julius Nyerere International Airport was reported to have been closed, and there were unconfirmed reports that the national civil aviation authority was diverting flights to other airports nearby.

Debris was hurled across the city and army chief of staff Gen Abdurahman Shimbo said 32 people had died, most of them residents in neighbouring areas. Earlier, Prime Minister Mizengo Pinda said 17 bodies had been recovered. Mr Pinda said the explosions had started in one arms depot before

spreading to others in the camp. By the morning of February 17, 23 munitions depots had been destroyed, along with two residential houses and a secondary school.

A similar incident in April 2009 at the Mbagala army base killed more than 20 people, including five army officers, and injured over 150. [See HInt 09-04b, 090429-02.]

On February 18, Chief of Defence Intelligence Brigadier General Paul Mella said "cost implications" arising from slim government budget were one of the main reasons hindering relocation of some military bases and ammunition from Dar es Salaam to other areas of the country. Brig. General Paul Mella said that the army had been routinely moving some military wares and munitions from the city to other places, but budget constraints was one of the reasons slowing the exercise. He said the Tanzania People's Defence Forces (TPDF) has plans of building more underground silos for weapons and munitions storage.



WWW.NEWS.CN

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Earlier Brig. General Mella dismissed speculations that the explosion was caused by power interruptions, lack of expert military personnel to man the warehouses or negligence. Responding to public pressure that Defence and National Service minister and Chief of Defence Forces should take responsibility by resigning, he said there was no possibility for any head to roll. He said those calling for the resignations of the top brass in the Defence ministry were not conversant with the National Defence Act No. 24 of 1976, noting: "We are not civil servants or employees of corporate entities. Our engagement is based on the NDA system and there is no clause or section which states that military officers should resign in case of incidents like the one that happened at Gongo la Mboto."

He said though there had been a series of bomb explosions: 2005, 2009 and that of Wednesday, the public should not judge the army only on the basis of the incidents, claiming: "We have built railways, rescued people during disasters, while always guarding the nation. You should also judge us on the basis of the good things that we do. Even those who inspect munitions in [warehouses], for example, though they are paid, do so by volunteering for the good of the nation and safety of other people". He said Tanzania cannot be rated as among leading countries prone to munitions explosions: "Tanzania is not a unique case in military munitions explosion incidents. Log on Google and you will see what happens in other countries. Only recently, there were explosion incidents in Zambia, Mozambique, Ethiopia, and Serbia".

## 22 Feb - Colombia

110222-12 Buenavista, La Guajira department. Three soldiers in an artillery battalion based in the town of Buenavista were killed and three wounded when they accidentally detonated a grenade at a base in La Guajira. A statement by the First Army Division said: "According to initial reports, the incident happened when the soldiers, who were developing maintenance activities in the area, handled the grenade, which exploded". The army has launched an investigation into the explosion.

## 24 Feb - Spain

110224-03 Hoyo de Manzanares, 35 km (21 miles) from Madrid. Five soldiers were killed and three injured in an accidental explosion at a military bomb disposal training centre. The accident occurred at the Military Engineering Academy at Hoyo de Manzanares, which also houses the International Demining Centre.



Defence Minister Carme Chacon postponed a trip to Budapest for a meeting with her EU counterparts in order to visit the scene. She said those killed were on a training exercise aimed at preparing them to join Spain's contingent in the United Nations Interim Force in Lebanon (UNIFIL), where they were to have taken part in operations to deactivate explosives. Chacon said among them were some of the best bomb disposal experts in the armed forces, and some had just returned from Afghanistan.

The incident occurred at 10:30 in the area known as El Palancar, an area within the academy prepared for practice explosions. Some sixteen soldiers had launched an exercise to destroy various anti-tank mines, supposedly inert munitions. This practice is common and is done with devices disabled and without detonator, according to the Ministry of Defence. The explosion occurred while the charges were being placed, and before the men could leave.

Because the exercise was carried out by the side of a hill, inside a small cavity, the blast hit squarely on the military. Three of the dead belonged to the Armoured Brigade number 12, from El Goloso, Madrid. The other two dead were from the Marine Brigade of San Fernando (Cádiz). Three other soldiers, also from the base of San Fernando, were injured, two of them seriously.



## 25 Feb - USA

110225-09 Mint Hill, Charlotte, NC. An off-duty Charlotte-Mecklenburg Police SWAT officer died after a police device exploded at his home. Police say Officer Fred [T] was doing a safety check on his equipment late on the afternoon of February 25 when the explosion happened. He had just returned home from a SWAT mission earlier in the afternoon.

Emergency crews were called to his home around 17:35. Upon arrival, EMS workers treated the officer for life

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threatening injuries caused by the explosion. He was taken to Carolinas Medical Center-Main by police escort. Police said physicians made a heroic effort to save the victim's life, but the injuries were too severe.

Police said the device that exploded is called a flash-bang. The SWAT team sometimes uses flash-bangs when entering a building. It makes a bright flash and a loud bang.

### **28 Feb - UK**

110228-12 Over Wallop, near Stockbridge, Hampshire. Wallop Defence Systems. Fire-fighters were called to the factory at Over Wallop where Wallop Defence Systems make aviation flares. On March 2, John Taylor, managing director, said that incident lasted three seconds after one of the flares caught fire on a production line. The factory's fire suppression system immediately kicked in, dousing the flare with carbon dioxide. Mr Taylor said the incident was not near to a storage area and there was no risk. The flares are made remotely with staff behind secure barriers. He said the factory makes 250,000 flares a year, and every year about five ignite: "We always assume this will happen and so makes the processes as safe as we can. The flare ignited and the operators exited the building. There were about 30 people on the site".

Mr Taylor said Wallop Defence Systems was a big success story now employing 200 people with an annual turnover of £35 million, compared to ten years ago when it employed 35 people with a turnover of £3.5m. Wallop Defence Systems was the scene of a major accident in 2006 when a worker was killed in an explosion. [See HInt 06-06, 060626-05.]

### **1 Mar - USA**

110301-04 Independence, MO. Lake City Army Ammunition Plant. ATK. Five people were injured at the Lake City Army Ammunition Plant, one of whom was flown to the hospital by medical helicopter. In a statement by ATK, the company that operates the plant, emergency personnel continue to investigate the incident, which occurred at about 13:30. The company would not comment on the extent of injuries. The incident occurred in a construction area and was contained, and ATK said it was too early to speculate on the cause of this incident or additional impacts. The incident was under investigation by the United States Army, ATK safety teams and the local authorities.



### **1 Mar - South Africa**

110301-06 Losberg, North West Province. Omnia Holdings, Bulk Mining Explosives (BME). Three workers were killed and six others injured in an explosion at the Bulk Mining Explosives (BME) cartridge plant at Losberg. The company said in a statement: "It is with deepest sadness that the management of BME confirms that three employees were killed this afternoon in an explosion at BME's Losberg cartridge production plant in the North West Province. The company has immediately notified the relevant authorities and a full investigation has been launched to determine the cause of the incident." The cartridge plant supplies Megamite for the underground market and is one of the plants at the Losberg facility. The remaining plants were not been affected.

Megamite is a high-energy cap sensitive ANFO emulsion explosive suitable for use in tough breaking conditions in hard rock mining environments. Megamite is classified by the South African Chief Inspector of Explosives as a Class E explosive.

### **3 Mar - Burma (Myanmar)**

110303-04 Near Rangoon, Pegu Division. Inndakaw munitions factory. A small fire, contained in Unit No. 1, broke out at the Inndakaw munitions factory outside of Rangoon. No injuries were reported, and there was no estimate of damage. Fire crews were dispatched around 18:00, and the fire was contained around 19:15. Two fire engines from the Htaukkyant Fire Department in Rangoon were dispatched, in addition to fire engines from Insein and Mingalardon townships and the Rangoon Division Central Fire Department. The Inndakaw munitions factory is one of four located around Rangoon.

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*(Continued from page 11)*

#### **4 Mar - Austria**

110304-13 Stadl-Paura, (Bezirk Wels-Land), Oberösterreich. Three kilograms of explosives and some machine gun ammunition were discovered in an abandoned army bunker at the site of Army munitions plant. The material was probably stolen and introduced into the old bunker only a few days before the discovery. The complex only allows access to a restricted group, and it was not yet known whether anyone from the army or someone from the outside got access to the site. There is as yet no suspicion, for what purpose the material was hidden. The ammunition is suitable only for military weapons; the explosives for various applications.

Lieutenant-Colonel Henry Birschkus, of the military command of Upper Austria, said the explosives could be used for various purposes : from blowing up a tree stump to military use: "If it ignites at once, that is a large amount". For now the army is investigating internally. Birschkus said the security directorate had also informed the public prosecutor in Wels. The Upper Austrian security director Alois Lißl initially had nothing to say except that it was an army issue.

#### **5 Mar - Cuba**

110305-07 Santiago de Las Vegas. Revolutionary Armed Forces. A series of explosion occurred at a munitions store outside the town of Santiago de las Vegas, south of the capital, shortly after 20:00. A statement released by the Revolutionary Armed Forces said the emergency situation was under control in less than three hours, and nobody was killed or injured.

#### **8 Mar -USA**

110308-04 Corpus Christi, TX. Alice Police Department. A 25-year veteran of the Alice Police Department was injured when a flash-bang grenade went off in his hand as he loaded equipment into a police vehicle. Police Chief Daniel Bueno said Richard DeLeon, SWAT Team commander, was wearing protective equipment when the grenade exploded about 15:00. DeLeon's hand was injured and the inside of his vehicle damaged by the grenade, a type issued to SWAT Team members to startle suspects with a bright flash and loud bang. DeLeon was flown by HALO-Flight to Christus Spohn Hospital Memorial in stable condition, a flight paramedic said.

A North Carolina SWAT officer was killed in late February in a similar instance when a flash-bang grenade went off at his house as he was unloading equipment. [See HInt 11-02b, 110225-09.]

#### **9 Mar - Venezuela**

110309-09 Maracay, state of Aragua, 130 km (80 miles) west of Caracas. Compañía Anónima Venezolana de Industrias Militares (CAVIM). On March 8, CAVIM activated its alarm system because of a vegetation fire that occurred near the three ammunition stores which exploded on January 30, 2011. [See HInt 11-01b, 110130-01.] The situation required the preventive evacuation of staff and workers from Cavim and Arsenal as a safety measure.

Some residents of the communities of José Félix Ribas and Coromoto said they had heard the siren inside so they decided to leave the area for safety. They noted that some people evacuated their homes on their own initiative, and not on orders from regional authorities or military. An inhabitant of Coromoto said that she saw a column of smoke coming out of Cavim and heard small explosions.

#### **14 Mar - USA**

110314-15 Fort Bragg, NC. An apparent explosion of a howitzer during a training exercise at the Fort Bragg, North Carolina, Army base, left eight Marines and two Navy personnel injured, mostly with shrapnel wounds and lacerations. Staff Sergeant Jayson Price of the 2nd Marine Division said the incident occurred at about 20:00 as troops conducted an artillery live fire exercise.

Two of the injured were flown to a hospital at the University of North Carolina in Chapel Hill. Emergency workers brought the other eight troops to Womack Army Medical Center, where they were in stable condition. The 10th Marine Regiment has temporarily halted firing exercises.

According to Price, eight Camp Lejeune Marines with the 2nd Marine Division and two Navy personnel were practicing "Exercise Rolling Thunder" with an M777A2 - 155mm howitzer: "The result of an apparent in-bore explosion of one M777A2 while conducting an artillery live-fire exercise aboard Fort Bragg. The cause of the incident is under investigation and the regiment remains in a check-firing status which means we are not firing until safe training can resume. Luckily, no one was killed in the accident. Of course, 10 people were injured but I'm just glad that no one was killed".

*(Continued on page 13)*

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### 16 Mar - USA

110316-03 Yuma, AZ. Yuma Proving Ground (YPG). At least ten employees at Yuma Proving Ground were transported to Yuma Regional Medical Center after being exposed to red phosphorus smoke leaking from a mortar shell shortly before 15:00. Some also inhaled the smoke. Although there were no immediate reports of serious injuries, the employees were taken to the hospital as a precaution.

Chuck Wullenjohn, YPG spokesman, said the incident occurred when employees at YPG were testing mortar rounds by heating them in a special conditioning chamber and firing them. During the heating, at least one of the mortars ignited on its own and released a large red cloud of phosphorus. Wullenjohn said: "We condition several of our rounds before we fire them. What that means is that we either cool them down to a certain temperature, or we heat them up to a certain temperature for testing because we have to test for different types of environmental conditions. The rounds, we don't know specifically what happened yet, but at least one of them started to cook off." Those who were exposed to the phosphorus were standing at a nearby gun position downwind from the conditioning chamber.

### 16 Mar - China

110316-08 Linwu County, Chenzhou City, Hunan Province. A plant thought to have been abandoned exploded, leaving two dead, and two missing. The explosion occurred at 19:30, and shattered windows of nearby houses, killed two people at the scene. An initial investigation found that the explosives was caused by illegal explosives production, police said. Two suspects were detained by police.

### 21 Mar - USA

110321-06-A Camp Minden, Webster Parish, LA. A fire broke out around 07:20 in a plant making explosives for the mining industry. Fire-fighters said an employee pulled an alarm at the plant about 07:20, and all 24 of the workers in the building go out safely. Plant Manager Brent Giliom said in this case, you do not fight an explosives fire. A one-half mile radius was cleared around the plant just in case of any explosions, although fire-fighters at the command post said the possibility of an explosion was very low. They said the fire did not pose a safety risk to any of the homes outside of the Camp Minden property.



### 27 Mar - Yemen

110327-09 Ja'ar, Abyan governorate. 7th of October ammunition factory. An explosion resulted in the death of at least 150 people and the injury of a greater number at the "7th of October" ammunition factory in Ja'ar. Local sources said that after armed men, believed to be members of Al Qaeda, took control over the factory, they looted ammunition and left. The next day, a group of local youths were reportedly rummaging through the abandoned factory and set off a series of explosions. The factory, in the Khanfar area, close to Ja'ar city, made munitions and Kalashnikov rifles.

A physician told newswires: "This accident is a true catastrophe, the first of its kind in Abyan. There are so many burned bodies. I can't even describe the situation". Physicians said counting the dead was almost impossible, because the force of the explosion had left the remains of people so badly charred. It was reported that scores of people were wounded, and many bodies remained inside the factory, which also contained stores of gunpowder.

On March 30, the death toll from the explosions had risen to 150. Initial reports said 78 had died, but more bodies had been pulled out of the factory. The explosion reportedly caused great anger among locals, who accused the authorities of planning it to try to win further support from the USA. Yemeni officials blamed al-Qaeda for the explosions.

### 30 Mar - Colombia

110330-06 Pasto, Nariño. Universidad de Nariño. Six people were injured in an explosion which occurred around 20:50 at the University of Nariño. The explosion was apparently the result of explosives in a construction camp, located within the school and from which several works there are co-ordinated. The injured were taken to the Hospital Department in the city of Pasto. According to Lt. Charles Benavides, of the Volunteer Fire Department of Pasto, some workers were handling the material when the explosion occurred. Lt. Benavides said: "We evacuated two of the six injured were in serious condition with burns over his face and arms". Police officials were admitted to the educational institution at the request of the directors of the entity, to advance the research needed to clarify the event.

## PROCUREMENT ISSUES PRESS REVIEW

*If you have information you consider of relevance to this section please do not hesitate to contact MSIAC at [info@msiac.nato.int](mailto:info@msiac.nato.int)*

### GENERAL DYNAMICS AWARDED \$46 MILLION FOR 120 MM TANK CARTRIDGES

[www.globalsecurity.org](http://www.globalsecurity.org) – 17 March 2011)

The US Army Contracting Command, Rock Island, Ill., has awarded General Dynamics Ordnance and Tactical Systems a \$46 million contract for the manufacture and delivery of 120 mm M865 TPCSDS-T and M1002 TPMP-T tank cartridges.

The M865 Target Practice, Cone Stabilized, Discarding Sabot-Tracer (TPCSDS-T) cartridge is used in the 120mm smooth bore M256 cannon of Army and Marine Corps Abrams main battle tanks. The M865 practice cartridge is designed to simulate the performance characteristics of live ammunition at reduced maximum ranges to allow practice firings on short-range training areas.

The M1002 Target Practice Multi-Purpose Tracer (TPMP-T) training cartridge provides matched exterior ballistics and time-of-flight parameters to the M830A1 High Explosive Anti-Tank Multi-Purpose Tracer (HEAT-MP-T) tactical cartridge when fired from the Abrams tank.

Work will be performed in Middletown, Iowa and work is expected to be complete by October 31, 2012.

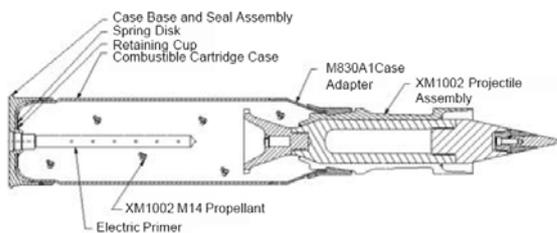
### ATK RECEIVES \$54 MILLION TRAINING TANK AMMUNITION ORDER FROM US ARMY

[atk.mediaroom.com](http://atk.mediaroom.com) - 10 March 2011)

Alliant Techsystems (NYSE: ATK) has received a \$54 million order for 120mm training tank ammunition from the US Army. The award is for the fourth year of a four-year contract.

The 120mm training ammunition, used by the M1A1/A2 Abrams main battle tank, includes the M865 kinetic energy and the M1002 multi-purpose anti-tank training rounds.

Propellants for ATK's tank ammunition are produced by ATK at the Radford Army Ammunition Plant, Radford, Va. ATK's manufacturing center of excellence in Rocket Center, W. Va. provides the high-quality metal and composite components; projectiles; and cartridge load, assembly and pack operations. Program management is headquartered in ATK's Plymouth, Minn. facility.



M1002 Cartridge Layout



PA-171 Container

M1002

FCO	SCO	BI	FI	SR	SCJ
V	V	V	V	P	P

20 mm M1002 IM Signature

*(Continued on page 15)*

*(Continued from page 14)*

The M1002 has a combustible cartridge and M14 propellant charge. The round is packed in a PA171 container. This container is made of a metal can with two single pane windows in Polyethylene lonomer that have been designed to rupture in case of propellant combustion and prevent pressure build-up. This concept enabled to keep the container intact in IM tests and avoid container metal projections.

120 mm M1002 training ammunition is fully IM compliant and has been assigned a hazard division HD 1.3C.

### **LOCKHEED MARTIN RECEIVES \$34.5 MILLION CONTRACT FOR PAVEWAY II PLUS LASER GUIDED BOMB KITS**

[www.lockheedmartin.com](http://www.lockheedmartin.com) – 17 February 2011)

Lockheed Martin has been awarded a \$34.5 million contract from the U.S. Air Force for production of Paveway II Plus Laser Guided Bomb (LGB) GBU-12 kits. The majority share contract includes deliveries to both the U.S. Air Force and U.S. Navy and is scheduled to begin the second quarter of 2011.

Paveway II Plus LGB guidance kits significantly improve weapon accuracy and reduce risk to U.S. and allied ground forces when compared to legacy paveway LGBs through implementation of a newly integrated combined hardware and software solution.

This contract will provide for delivery of the first full-rate production quantities of the improved paveway II Plus LGB. The new system does not require upgrades or modifications to aircraft, ground handling equipment or logistics support, and continues the same basic paveway II concept of operation for employment

Lockheed Martin's LGB kits can be carried on U.S. Air Force, U.S. Navy and most international aircraft platforms currently authorized to carry and release LGBs. Paveway II and paveway II Plus kits are compatible and interoperable with existing inventory paveway II equipment, handling procedures and aircrew operations.

The Paveway II Plus LGB is fitted on the IM BLU-111 bomb. This bomb is filled with an insensitive cast-cured explosive PBXN-109; (64% RDX, 20% Aluminium and 16% HTPB). Aft venting has been recently added to reduce bomb reaction in cook-off environments. With this venting, BLU-111 exhibits a type V reaction in fast cook-off and bullet impact and a type IV in slow cook-off and fragment impact.



A Dassault Rafale carrying six GBU-12 Paveway IIs, plus four MICA AAMs

*(Continued on page 16)*

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**MARINES ORDER 120MM MORTAR ROUNDS**

([www.upi.com](http://www.upi.com) – 9 March 2011)

General Dynamics Ordnance and Tactical Systems in Florida will supply the U.S. Marines with 120mm mortar rounds under a contract worth as much as \$199 million.

Two delivery orders under the indefinite-delivery/indefinite quantity contract have already been awarded by the Marine's Ordnance and Tactical Systems command, the company said.

The ammunition for the service's Expeditionary Fire Support System is a family of spin-stabilized, insensitive munitions, including high explosive, smoke, illumination and practice rounds.

The rounds share common design elements, as well as a common primer and propelling charge.

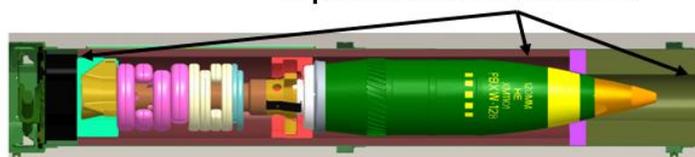
The Expeditionary Fire Support System is a light, mobile and vertically transportable indirect fire support system designed for missions requiring tactical versatility, speed and close-in fire support. The system is composed of a pair of Prime Mover vehicles, a 120mm M327 mortar weapon, the four-round family of munitions and an ammunition trailer.

The mortar IM signature has been improved over former Composition B versions to be safe for transport on sea and air. The shells are filled with insensitive PBXW-128 cast-cured composition (77% HMX and 23% binder). HE rounds are packed in PA117 containers which include blow out panels, foam packaging that melts in cook-off environment to prevent insulation of heat. Their IM signature has been evaluated in packed configuration. They passed slow cook-off, bullet impact and sympathetic reaction but exhibited a type III reaction to fragment impact and a type IV to fast-cook-off.



Tractor Vehicle and 120 mm Rifled Mortar Trailer

Foam cushions and sleeves melt and separate to prevent insulation of heat



Blowout Panels

120 mm Mortar Round in its Packaging

## ACQUISITIONS

### SAFRAN FINALIZES ACQUISITION OF SNPE MATÉRIAUX ENERGÉTIQUES

([safran-group.com](http://safran-group.com) - 5 April 2011)

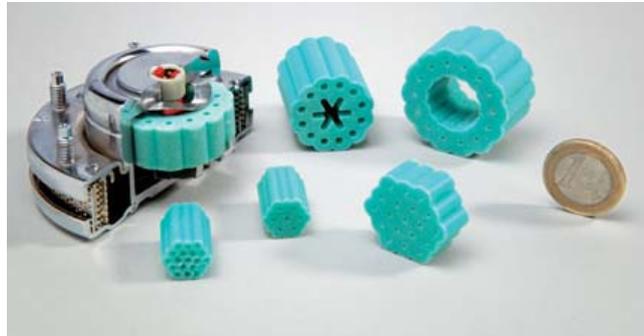
Safran announced that it has finalized the acquisition from SNPE Group of SNPE Matériaux Energétiques (SME) and its subsidiaries, including a 50% stake in Roxel (manufacturer of solid rocket motors for tactical missiles), and a 40% stake in Regulus (manufacturer of launcher propellants, based in Kourou, French Guiana).

These businesses, whose consolidation into Safran's accounts takes effect on 5 April 2011, should generate prorated sales of more than 200 million euros in 2011, with a recurring operating margin of nearly 10%.

The next step would be to bring together SME's operations with those of Snecma Propulsion Solide (Safran group), based near Bordeaux, creating one of the two world leaders in solid rocket propulsion, a key technology for European launch vehicles and missiles.

The new entity will have annual sales of nearly 600 million euros and 3,000 employees, including 600 engineers and scientists.

Safran has received specific guarantees concerning environmental liabilities related to the past activities of SNPE Matériaux Energétiques



## LATEST PUBLICATIONS

(Available on the MSIAC secure website <https://sw.msiac.nato.int/weblink/Welcome.aspx> or on request at [info@msiac.nato.int](mailto:info@msiac.nato.int))

### OPEN PUBLICATIONS

O-138 Review on Thermochemical Codes by Dr Ernst-Christian Koch, April 2011

### LIMITED PUBLICATIONS

L-168 Recent Developments in IM Boms by Dr Pierre-François Péron, January 2011

L-171 Insensitive Explosive Materials: IV - AZTO by Dr Ernst-Christian Koch, February 2011

## MSIAC MUNITIONS SAFETY (MS) AWARDS

### CRITERIA AND OBJECTIVES

As NIMIC grew to become MSIAC and nations came to recognize that IM is a significant contributor to Munitions Safety, it was time for the MSIAC IM Awards to become the MSIAC MS Awards.

There will be two kinds of MSIAC MS Awards.

**The MSIAC MS Award for Technical Achievements** will be awarded to individuals or teams who have made significant contributions in research and/or engineering related to the field of munitions safety. The individuals or teams should have published open technical papers on MS related work and/or made presentations of MS related work at open symposia such as the NDIA Insensitive Munitions and Energetic Materials Technology Symposium, DDESB Seminar or Parari. This Award is intended to advance technically the options available to munitions programme managers to enhance the safety of munitions throughout the entire life cycle.

**The MSIAC MS Award for Career Achievements** will be awarded to individuals who have made consistent contributions in research, engineering, production, procurement, fielding, standardization, policy, etc. related to MS, over an extended period. The individuals should have a long record of open papers, presentations and achievements in the field of munitions safety. This Award is intended to acknowledge career dedication to the cause of MS throughout the entire lifecycle.

### RESTRICTIONS

The MSIAC MS award will not normally be presented in recognition of activities or services rendered whilst directly participating in the MSIAC project, the team, or in the Steering Committee. The reason for this exception is to prevent the perception that the Steering Committee would be able to make awards to its own membership.

When considering this restriction, the Steering Committee is given discretion to make awards as appropriate to any individual or team, to ensure cases of significant contribution to the field of MS, outside MSIAC activities, are properly recognized.

### PROCEDURES

The Awards will be made at a convenient international meeting, such as, but not exclusively, the NDIA IMEM Technology Symposium, DDESB Seminar or Parari and about every two years depending on the calendar of convenient meetings.

The winners will be chosen by the Steering Committee on the basis of proposals made by MSIAC and by Steering Committee Members, NFPOs, or any other interested parties. These proposals are to be made to the PM/MSIAC, in time for preparation of a discussion at the Steering Committee Meeting immediately before the meeting at which the Awards are to be made.

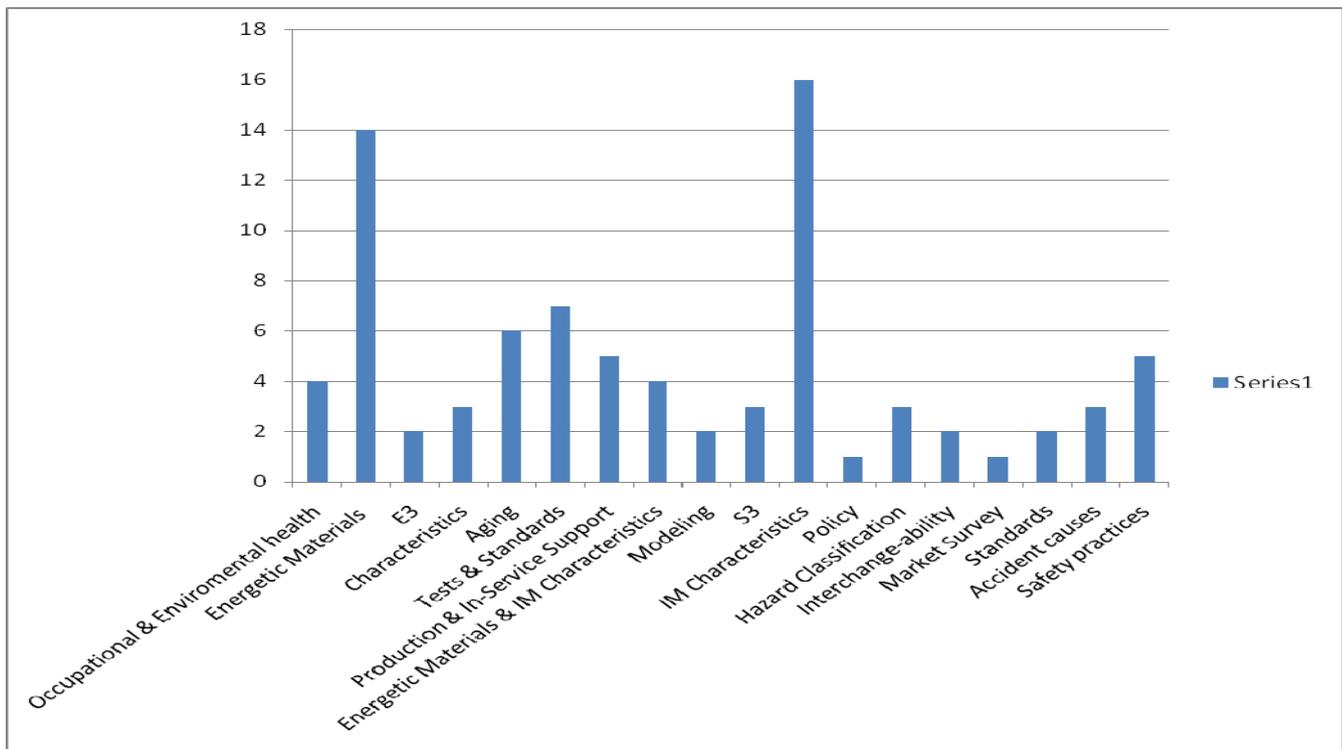
Applications should be accompanied by a written justification, not more than one side of A4/Letter paper in length, excluding any list of publications, which the proposer may consider relevant to the case.

## YOUR QUESTIONS ARE IMPORTANT TO US

The MSIAC staff use their skills, the internal MSIAC databases and their extensive POC network to answer a wide variety of technical enquiries. Examples include:

- What is the effect of endothermic polymer decomposition on thermal ignition of PBXs?
- What is the survivability of Bradley fighting vehicles to an RPG attack?
- What are the infrastructure options for a new High Explosives plant?
- Assist in developing national IM policy/implementation plans?
- What LOVA propellants options are available?
- What was the cause of a recent demil accident?

The chart below reflects current MSIAC areas of interest in member nations.



MSIAC is involved with information concerning four major areas as they relate to Munitions life cycle safety: threats, explosives and munitions; related technical areas; and related logistic areas. These specific areas are:

1. Threats - slow cook-off, fast cook-off, fragment impact, bullet impact, sympathetic detonation, electromagnetic pulse and electrostatic discharge.
2. Explosive and Munitions - rockets, missiles, guns, mortars, warheads, bombs, fuzes, gas generators, ammunition, propellants, high explosives and pyrotechnics.
3. Related Technical Areas - ignition, thermal explosions, deflagration to detonation transition, shock to detonation transition and mitigation/elimination of these area.
4. Related Logistic Areas - storage, transportation, hazard classification, disposal, risk/cost benefit analysis.

We are also here to answer any non-technical questions, which can be the request of a particular paper, a document or software, which is not downloadable from our website. Although most of our documents can be downloaded from our website, some people have difficulty in doing this. Some publications are only available on CD or they are classified and can only be sent by mail.

All enquiries will be dealt with by contacting [info@msiac.nato.int](mailto:info@msiac.nato.int).