The demilitarization of ammunition

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The situation – past and present

• Since 1994, NAMSA/NSPA has awarded more than 200 contracts for ammunition demilitarization on behalf of its member nations
• Application of:
  • Certain European Directives regarding transportation of ammunition (Dangerous goods), environment, occupational health & safety
  • Certain ISO standards; currently 9001, 14001 & 45001 (see also slide 35)
• 14 April 2019: Bavarian police declared an ammunition transport as «transboundary shipment of waste»:
  • Immediate information to all stakeholders
  • Temporary disruption of all contractual work
• Challenge of a system which showed its effectiveness for more than 20 years
• Problem: Caracterisation of the goods to be moved (dangerous good or waste…)
• Waiting for a sustainable, coherent and safe solution
Objectives

- **Presentation’s objective:**
  - **Demonstrate:**
    - The correct and effective management of the ammunition demilitarization project
    - Effectiveness of the controls in place, by:
      - NSPA regulations,
      - Application of UN, EU, national & regional law
      - Material traceability – documented, controlled and ensured at any moment in time during the whole project life cycle
  - **Plead in favour of:**
    - An «expressis verbis» application exclusion of the ammunition to be demilitarized from the perimeter of the European Directive and Regulation on waste
    - Applicability of the waste legislation as of the moment where the certificate of demilitarization will have been established and signed
What is NSPA?

Organization

- North Atlantic Council
- NSPO Agency Supervisory Board
- NSPA

NSPA shares the legal personality of NATO
Always acts on behalf of its member nations

Principal sites

- Entirely financed by the nations
- No loss – no benefit
- All NATO nations
- 1,315 employees

Accreditation in 2012
What is NSPA?

- A contract agency, not a commercial company
- Funded by the Nations, no loss no benefit
- Non-lucrative organization
- Extension of national supply chains
- Not a competitor to national logistic and procurement agencies
Ammunition Support Partnership

- Certified ISO 9001 & 14001
- Inclusive project management
- Personnel of the Ammunition Section:
  - 7 members
  - All are/have:
    - Professionals in the technical and safety domains of ammunition and explosives
    - Have long service in a similar function in their previous (national) employment
    - Specific follow-on training all along the career
    - Holder of a PRINCE2 practitioner certification

NATO UNCLASSIFIED
Claude PEFFER - NSPA
Ammunition demilitarization

- Number of projects: 200+
- Requiring entities
  - Belgium, Canada, Denmark, Spain, United States of America, Finland, France, Greece, Italy, Luxembourg, Norway, The Netherlands, Poland, United Kingdom, Turkey,
- Contractor countries
  - Germany, Spain, France, Italy, Norway, Czech Republic, Romania, Sweden, Turkey
- Processed ammunition types
  - Rockets and missiles
  - Ammunition for cannon, howitzer & mortar; small, medium & large calibre
  - Cluster munitions (Oslo Convention)
  - Hand and rifle grenades
  - Anti-personnel landmines (Ottawa Treaty) & anti-tank mines
  - Pyrotechnic ammunition
  - Ammunition containing white phosphorous
  - Ammunition containing depleted uranium
  - Aircraft bombs
  - etc.
• Definition of «ammunition»…? in this context…

• Regulation (EC) No 1013/2006:
  • Art 1, sub 3., e): shipments of the waste referred to in point 1(b)(ii), (iv) and (v) of Article 2 of Directive 2006/12/EC, where such shipments are already covered by other Community legislation containing similar provisions

• Directive 2008/98/EC:
  • No specific definition (referring to ammunition)
  • Exclusion by Article 2, sub 1., (e): «decommissioned explosives »?
  • Insufficient result…
Definitions, at the heart of the debate (2)

- Search at higher levels:
  - UN: Globally Harmonized System of Classification and Labelling of Chemicals (Rev 7, 2017), Chapter 2.1: Explosives, 2.1.1: Definitions
    - Para 2.1.1.2: The class of explosives comprises: (b) Explosive articles
    - Para 2.1.1.1:
      - An explosive substance (or mixture) is a solid or liquid substance (or mixture of substances) (...)
      - An explosive article is an article containing one or more explosive substances or mixtures
        (=> AMMUNITION implicitly)

- Basel Convention:
  - An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) (...)
  - The «explosive article» (or «ammunition») is not mentioned!!
Definitions, at the heart of the debate (3)

• GHS 2017:

CHAPTER 2.1
EXPLOSIVES

2.1.1 Definitions and general considerations

2.1.1.1 An explosive substance (or mixture) is a solid or liquid substance (or mixture of substances) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included even when they do not evolve gases.

A pyrotechnic substance (or mixture) is a substance or mixture of substances designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self-sustaining exothermic chemical reactions.

An explosive article is an article containing one or more explosive substances or mixtures.

A pyrotechnic article is an article containing one or more pyrotechnic substances or mixtures.

2.1.1.2 The class of explosives comprises:

(a) Explosive substances and mixtures;

(b) Explosive articles, except devices containing explosive substances or mixtures in such quantity or of such a character that their inadvertent or accidental ignition or initiation shall not cause any effect external to the device either by projection, fire, smoke, heat or loud noise; and

(c) Substances, mixtures and articles not mentioned under (a) and (b) above which are manufactured with the view to producing a practical explosive or pyrotechnic effect.
• Basel Convention:

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**ANNEX III**

**LIST OF HAZARDOUS CHARACTERISTICS**

<table>
<thead>
<tr>
<th>UN Class</th>
<th>Code</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>H1</td>
<td>Explosive</td>
</tr>
</tbody>
</table>

An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings.
Definitions, at the heart of the debate (5)

**GHS 2017**
- EXPLOSIFS:
  - An explosive substance (or mixture) is a solid or liquid substance (or mixture of substances)
  - An explosive article is an article containing one or more explosive substances or mixtures => AMMUNITION

**Convention de Bâle**
- An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) (…)
- No mentioning of the "explosive article" anymore

**Regulation (EC) N° 1013/2006**
- Are excluded from the perimeter of the Regulation … where such shipments are already covered by other Community legislation containing similar provisions
- How to characterize this analogy…?

**Directive 2008/98/CE**
- Art. 2 (…): are excluded from the perimeter of this Directive (…) "decommissioned explosives"
Inclusion of the environmental interest preservation is assured!!
• Recommendations on the transport of dangerous goods
  • Nature, purpose and significance of the recommendations
    • These Recommendations have been developed (…) in the light of (…) the exigencies of modern transport systems and, above all, the requirement to ensure safety of people, property and the environment.
  • Principles underlying the Regulation of the transport of dangerous goods
    • Transport of dangerous goods is regulated in order to prevent, as far as possible, accidents to persons or property and damage to the environment, the means of transport employed or to other goods.
ESTIMATED TOTAL DURATION: between 2 and 3 years

START → PHASE 1
- Requirement intake
- Analyzes
- NSPA-Nation agreement

PHASE 2
- SAP registration
- Creation/sending RFP
- Receipt of offers

PHASE 3
- Offers' registration
- Offers evaluation
- Contract award

PHASE 4
- Kick-off meeting
- Approval of MP & QP
- Operations kick-off

PHASE 5
- Transport
- Demilitarization
- Reporting / Visits / Audits

END
• Government Quality Assurance
• AQAP 2110 is a supplement to ISO 9001
• Additional requirements:
  • Surveillance from contractor’s site until the end of the demilitarization activities (certified traceability)
  • Permanent access rights
  • Provision of all contractual documentation
  • Unlimited possibility for NSPA and GQAR to:
    • Evaluate contractor performance
    • Conduct compliance verifications
Management plan, containing:

• Organizational chart (names, functions & responsibilities of the staff engaged in the project)
• Quality management (structure compliant with AQAP 2105/ISO 10005)
• Industrial processes management
• Risk management, as a minimum:
  • Production agenda
  • Contractual performance
  • Finance
  • Legal matters
  • Infrastructure
  • Environment
  • Logistics
  • Sub-contractor(s)
• Environmental management
• OH&S management
• Communication
• Documentation
• Lessons Learnt
• International standards under evaluation:
  • ISO 14051 – Environmental management — Material flow cost accounting
  • ISO 26000 – Guidance on social responsibility
  • ISO 31000 – Risk management
  • ISO 37001 – Anti-bribery management systems
  • ISO 50001 – energy management systems

• Waste prevention: AOP 4518 (Allied Ordnance Publication)
Industrielle Demilitarisation Sites

Companies with NAMSA/NSPA contracts
2004 to 2019

1. NAD – NOR (Nammo Group)
2. Nammo Buck – DEU (Nammo Group) *
3. Spreewerk GmbH – DEU
4. EST – DEU
5. SAE Alsetex – FRA (Lacroix Group) *
6. UEE Italia – ITA (Maxam Group)
7. Esplodenti Sabino – ITA
8. Nammo A/B – SWE (Nammo Group)
9. FAEX – ESP (Maxam Group)
10. VOP-026 – CZE
11. MBDA – FRA
12. Energotech – ROU
13. MND MDF – TUR

* closed
Industrial processes (1)

- The R3* ratio in ammunition demilitarization industry is normally between 90 and 99 %
- The raw materials used in military industry have the reputation to be of prime quality (optimized value)
- Open Burning – Open Destruction (OBOD) practices are **STRICTLY PROHIBITED** in the framework of NSPA contracts
- The contractor has to strictly adhere to the Directive 2010/75/EC regarding industrial emissions (see also slide 41)
- Safety first, remote methodologies preferred whenever possible
- Waste resulting from the industrial processes:
  - Passage of title to the contractor (i.e. ownership & responsibility)
  - Must be processed in accordance with Directive 2008/98/EC and Regulation N° 1013/2006

* Reuse, Recovery, Recycle
• BATNEEC determination process *:

- **Step 1:** Identification of available techniques:
  - Identify all potential and available techniques
  - Multi-criteria analysis

- **Step 2:** Technical & safety assessment, based on:
  - Maturity
  - Security
  - Quality
  - Summary assessment

- **Step 3:** Environmental assessment:
  - Waste water
  - Air emissions
  - Ground (soil and sub-soil)
  - Material
  - Energy
  - Noise
  - Summary assessment

- **Step 4:** Economic assessment (cost)

- **Step 5:** Determination/Decision

* AOP-4518: Safe disposal of munitions, design principles and requirements, and safety assessment (Best Available Technique Not Entailing Excessive Cost)
• Pollution abatement system
• Compliant with Directive 2010/75/UE (industrial emissions)
• Treatment of:
  • Volatile organic compounds
  • Dust,
  • Acid gases (NOx, SO2, etc.),
  • Heavy metals
  • Dioxins
Industrial processes (6)

Key assumptions:
- The ammunition is demilitarized
- The certificate of demilitarization has been drafted and signed by the GQAR

Transfer from ammunition to waste:
- Process in compliance with all relevant regional, national and European legislation
- Waste stream control
- Waste tracking forms for all types of waste
- The contractor is the owner of and responsible for the waste
- Management/Quality plan must include the control mechanisms for all dangerous/non-dangerous/inert waste streams
- Waste material with energetic materials may not be put onto the market place
- Waste must be certified «FFE» (GQAR control)
• Ammunition first... European and national legislations exist (cf analogies):
  • FR: «Munitions de guerre», DE: «KWKG», etc.
  • ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road)
• All European countries with industrial ammunition demilitarization sites:
  • Are parties to the Basel Convention
  • No export restrictions «a priori» between these countries
• The possibility to refuse waste by a country:
  • Will lead to considerable project implementation delays with a negative impact on safety and security
  • May generate risk to the environment and to the public
• Export prohibition if national capacities exist: Conflict with Directive 2014/24/EU on public procurement
• Directive and Regulation not clear, national interpretations, even at regional level
• A parallel application of two analog legal texts do not bring any added value
• Uncertainty creates unacceptable major risks
Summary (2)

- Vocabulary leading to confusion and interpretation
- List of wastes (Decision 2014/955/EC):

<table>
<thead>
<tr>
<th>CODE</th>
<th>FRENCH</th>
<th>ENGLISH</th>
<th>GERMAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 04</td>
<td>Déchets d’explosifs</td>
<td>Waste explosives</td>
<td>Sprengstoffabfälle</td>
</tr>
<tr>
<td>16 04 01</td>
<td>Déchets de munitions</td>
<td>Waste ammunition</td>
<td>Munition</td>
</tr>
<tr>
<td>16 04 02</td>
<td>Déchets de feux d’artifice</td>
<td>Firework wastes</td>
<td>Feuerwerkskörper</td>
</tr>
<tr>
<td>16 04 03</td>
<td>Autres déchets d’explosifs</td>
<td>Other waste explosives</td>
<td>Andere Sprengstoffabfälle</td>
</tr>
</tbody>
</table>
• Impact study – French Senate – Draft law on the suppression of the parallel application of European legislation:
  • Toutefois, dans la mesure où le droit européen ne définit pas cette notion et dans le but d'assurer la préservation des intérêts environnementaux, il est proposé de:
    • limiter le champ de l'exclusion en ne visant que les seules munitions placées sous la responsabilité du ministère de la défense dont ce dernier n'a plus l'utilité et qu'il destine à la valorisation et/ou l'élimination
    • limiter le champ de l'exclusion du régime des déchets dans le temps, car au-delà des opérations de démilitarisation effectuées sur ces explosifs, consistant à les priver définitivement de leur usage militaire, le régime des déchets doit s'appliquer aux éléments issus de ces opérations si, le cas échéant, il en subsiste.
  • Concernant, la notion de démilitarisation, elle pourra être définie de la manière suivante, dans le futur décret : « toute opération notamment de désassemblage, de démontage, de découpe, de brûlage, visant à rendre les munitions placées sous la responsabilité du ministère de la défense impropre à l'emploi militaire pour lequel elles ont été conçues ».
  • Au terme de cette opération, les parties de munitions qui en sont issues ne bénéficieront plus du champ de la dérogation et retomberont ainsi dans le champ d'application de la directive déchets ; ces déchets pourront ainsi soit être valorisés via une filière idoine pour un usage autre que militaire, soit définitivement éliminés.

Internet link: https://www.senat.fr/leg/etudes-impact/pjl18-010-ei/pjl18-010-ei.html
Conclusion

• Today’s practice for ammunition demilitarization is:
  • Effective in terms of project management
  • Efficient in terms of controls
• Constant strive for improvement
• Parallel application of multiple Directives and Regulations:
  • Does not provide any added value
  • Is confusing and leaves room for interpretations
  • Creates major unacceptable risks
• Provide a more detailed description of ammunition
• Consider during the review cycle of the Directive and Regulation
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https://www.nspa.nato.int/en/organization/Logistics/WSES/ammunition.htm
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