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ENDNOTES

Life-cycle Management of Ammunition: Safety, Security, and Sustainability of Conventional Ammunition Stockpiles by Carapic, Deschambault, Holtom, and King [from page 5]

1. Any national ammunition stockpile consists of a range of ‘function-specific stockpiles’. There are many types of individual ammunition and explosive stockpiles within a country, that are under the control of separate organizations (e.g., such as the police, military (both active and reserve), border guards, ammunition production company holdings) and make up a state’s national ammunition stockpile. These include: a) operational ammunition and explosives; b) war reserve ammunition and explosives, c) training ammunition and explosives; d) experimental ammunition and explosives (if a producing nation); e) production ammunition (if a producing nation); and ammunition and explosives awaiting disposal (unsafe or surplus stocks). See UNODA (2015), mod. 1.30, para. 8.
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3. UNGA (United Nations General Assembly). 2008. Resolution 63/182. A/63/182 of 28 July.
4. Publication of the Handbook was made possible thanks to financial support from the Governments of Germany, Switzerland, and the United States. Specifically, we wish to extend our gratitude to the Conventional Arms Control division (OR10) of the German Federal Foreign Office, the Human Security Division of the Swiss Federal Department for Foreign Affairs, and the Office of Weapons Removal and Abatement in the US State Department’s Bureau of Political-Military Affairs (PM/WRA).
5. The BiH case study was made possible through the support of PM/WRA.
6. See Carapic, Jovana and Paul Holtom. 2018. *Life-cycle Management of Ammunition: Lessons from Bosnia and Herzegovina*. Briefing Paper. Geneva: Small Arms Survey; Carapic, Jovana, Eric J. Deschambault, Paul Holtom, and Benjamin King. *A Practical Guide to Life-cycle Management of Ammunition*. Geneva: Small Arms Survey.
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14. NATO, 2007, p. 34.
15. Carapic et al (2018), p. 41.
16. Carapic, Jovana, Prasenjit Chaudhuri, and Pierre Gobinet. 2016. *Sustainable Stockpile Management in Bosnia and Herzegovina: The Role of EUFOR Mobile Training Team for Weapons and Ammunition Management*. Working Paper No. 24. Geneva: Small Arms Survey. October, pp. 41-43; Switzerland. 2017. ‘Chair’s Summary.’ International Workshop on the Safe and Secure Management of Ammunition, 8–9 December 2016. Geneva: Government of Switzerland. Unpublished document. 14 February, pp. 3, 5; UNGA (United Nations General Assembly). 2017. Resolution 72/55. Adopted on 12 December 2017. A/RES/72/55 of 4 December, para 1.
17. UNODA, 2015, mod. 01.10, para. 6.1.
18. Life-cycle processes include the management of decisions, risk, and opportunities, as well as coordination and information. See Haskins, Cecilia, ed. 2006. *Systems Engineering Handbook: A Guide for System Life Cycle Processes and Activities*. Version 3. San Diego: International Council on Systems Engineering. June sec. 5.1.
19. Enabling processes are used to direct, control, and support LCMA and include the management of resources, the environment, and quality control. See Haskins (2006), sec. 6.1.
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32. UNODA, 2015, mod. 01.10, para. 4.
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35. UNODA, 2015, mod. 02.10, paras. 6-13.
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Increasing Efforts in SSMA: What Does it Take? by Hofmann, Paunila and Prizeman [from page 15]

1. This article does not necessarily reflect the views of the United Nations Organization.
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7. For the case of the explosion of an ammunition storage area in Gërdec, Albania, in 2008, see for instance Carapic Jovana and Gobinet Pierre (2014), *Taking Stock of Excess Stockpiles: UEMS in South-east Europe* (Geneva: SAS), p. 3.
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10. At the international level, for instance, the 2001 UN Firearms Protocol, the 2003 Protocol V to the Convention on Certain Conventional Weapons or the 2013 Arms Trade Treaty. At the regional level could be mentioned the 1997 Inter-American Convention Against the Illicit Manufacturing and Trafficking in Firearms, Ammunition, Explosives and Other Related Materials, the 2003 Document on Stockpiles of Conventional Ammunition of the Organization for Security and Co-operation in Europe, the 2006 Convention on SALW, their ammunition and other related materials of the Economic Community of West African States or the 2013 CARICOM Crime and Security Strategy.
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12. UNIDIR (2018), *Reporting on Conventional Arms Trade*. Synthesis Handbook (Geneva: UNIDIR), p. 21.
13. For instance, the UN Firearms Protocol considers complete round, and components (including cartridge cases, primers or propellant powder) as being part of ammunition. Others however, including the ECOWAS Convention on SALW, their Ammunition and Other Related Material, do not include parts and components, but cover munitions that are not fired or expelled from a small arm or light weapon. See Saferworld (n.d.), *Ammunition and the ATT: Options for and implications of its inclusion* (Geneva: UNIDIR), p. 3.
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19. See for instance United Nations Office for Disarmament Affairs (n.d.), *The United Nations Office for Disarmament Affairs and the Sustainable Development Goals*, p. 1; Geneva International Centre for Humanitarian Demining and United Nations Development Programme (2017), *Leaving No One Behind: Mine Action and the Sustainable Development Goals* (Geneva: GICHD), pp. 38-39;

UNGA (2016), New Urban Agenda, UN Doc. A/RES/71/256, para 103.

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Shattered Lives and Bodies: Recovery of Survivors of Improvised Explosive Devices and Explosive Remnants of War in Northeast Syria by MSF [from page 24]

1. Names have been changed.

How Iraq Is Changing What We Do: Measuring Clearance in Urban Environments by Lodhammar [from page 30]

1. Stabilization definitions vary but generally it is understood to be a combination of military, humanitarian, political and economic activities that together bring stability to areas affected by violent conflict. In Iraq, the word stabilization is most often associated with the Funding Facility for Stabilization, managed by the United Nations Development Programme in collaboration with the Government of Iraq.
1. Decisions of the Higher Committee for Mine Action (HCMA) Meeting № 2 of 2017 held on Wednesday 29 November 2017.
2. IEDs used as substitutes for conventional landmines in a 'belt' configuration to defend a combatant position during a conflict meet the International Humanitarian Law (IHL) definition of landmine.
3. Note: The IMAS Review Board has agreed to develop an IMAS on Improvised Explosive Device Disposal (IEDD). The need to clarify a standard of clearance where 'depth' is not a suitable measurement is being considered.
4. Based on unconfirmed reports.
5. Economic theories differ as to 'how much' for 'how many' and 'how soon' when setting objectives and guidelines for societal welfare and distribution of individual benefits. In his essay *What Utilitarianism Is*, John Stuart Mill defined utility as "the Greatest Happiness Principle, (which) holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to promote the reverse of happiness." In his theory of efficient economic allocation, Vilfredo Pareto argued that no one individual should be made better off while making at least one individual worse off. Other economists have suggested that "Pareto improvements" consider offsetting compensation for those disadvantaged by one government improvement that favors others so as to maintain a "Pareto efficient outcome" also considered the basic theorem of welfare economics.
6. Just as IMAS should include guidance on a standard for clearance in a 3-dimensional environment, so, too, should IMAS include a standard for threat assessment to ensure that organizations are properly considering risks.

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3. Kubis, Cable CZX-086, 8 July 2018, UNAMI, Baghdad, Subject: The importance of mine action for Iraq's recovery.
4. Marcaillou, Agnès Statement, IEDD standards, All Donor Forum and Open House, 19 April 2018, UNMAS HQ, New York.
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Sepon Supports UXO Clearance in Laos by Aneka and Valent [from page 40]

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2. Under the Mineral Exploration and Production Agreement between the Government of Lao PDR and LXML signed in 1993.
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4. "Seeking safer roads around Sepon mine." MMG. 12 October 2010. <http://bit.ly/2DFQnhO>. Accessed 6 June 2018.
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7. "MMG LXML Sepon partners with the Australian Government to improve agriculture productivity." MMG. 27 July 2017. <https://bit.ly/2Jxzs7Y>. Accessed 4 June 2018.
8. Transient electromagnetics, (also time-domain electromagnetics or TDEM), is a geophysical exploration technique in which electric and magnetic fields are induced by transient pulses of electric current and the subsequent decay response measured.
9. UXO Lao Detection Trial Test Report. GICHD. July 2015 <http://bit.ly/2u6jr2w>. Accessed 6 June 2018.
10. LXML has achieved 0 UXO-related incidents or injuries that would require medical treatment, including any minor injuries such as bruises and minor cuts.

References

1. MMG Limited (MMG) is a global metals producer based in Melbourne, Australia. MMG is listed on the Hong Kong Stock Exchange (HKGEx:1208) with a secondary listing on the Australian Stock Exchange (ASX:MMG). Sepon is an open-pit copper mining operation in Laos. The name of the company in Laos is Lane Xang Minerals Limited (LXML), of which MMG owns 90% and the Lao Government 10%. More info at www.mmg.com.
2. National Regulatory Authority (NRA) is a public institution of the Lao Government. It is responsible for regulation and coordination of all UXO operators in the country working on the impact of unexploded bombs, artillery shells, grenades, landmines and like ordnance.
3. The overarching aims of the NRA are to enable all people in Lao PDR to live free from the threat of UXO, help promote national development, and see UXO victims fully integrated into society and ensure their needs are comprehensively met. More info at www.nra.gov.la.
4. UXO Lao (Lao National Unexploded Ordnance Programme) was established by the Lao Government with the support of NUDP, UNICEF and other stakeholders in 1996. UXO Lao is working in the nine most impacted provinces nationwide, clearing land for agriculture and community purposed as well as other development activities. More info at www.uxolao.org.
5. Cooperative Orthotic Prosthetic Enterprise (COPE) was established by the Lao Ministry of Health in 1997 to ensure that people with physical disabilities have local, affordable access to a quality, nationally-managed rehabilitation service. More info at www.copelaos.org.

THE HYBRID THERMAL LANCE: A PROMISING NEW TECHNIQUE FOR THE DESTRUCTION OF LANDMINES AND UXO BY DEFLAGRATION BY PRATT AND TORBET [FROM PAGE 46]

1. McNally, Craig and Risser, Hans (2017) "Humanitarian Mine Action and IEDs," *Journal of Conventional Weapons Destruction*: Vol. 21: Iss. 3, Article 10; Rhodes, Guy (2017) "Improvised Explosive Devices and the International Mine Action Standards," *Journal of Conventional Weapons Destruction*: Vol. 21: Iss. 3, Article 3
2. Patel, Divyakant (2009) "Proper Usage of Torch Systems for In-Situ Landmine Neutralization by Burning for Humanitarian Demining," *The Journal of ERW and Mine Action*: Vol. 13: Iss. 1, Article 43
3. In some areas there are generally no issues with thermite importing and licensing; however, thermite becomes difficult to obtain once it is "weaponized" as an EOD tool.
4. Novozhilov, Joseph, Ishiko, Shimada, Wang, and Liu (2011) "Polymer Combustion as a Basis for Hybrid Propulsion: A Comprehensive Review and New Numerical Approaches," *Energies Journal*: Vol 4: ISSN 1779-1839; doi:10.3390
5. Phone interview with Douglas Pratt of Pratt Hobbies, Inc.
6. Wood was chosen mainly because the use of hazardous materials (explosives in particular) is strictly controlled on the Messiah College campus. Wood, while it does burn, degrades relatively slowly while burning, and thus makes for a good comparison of the ability of the HTL to degrade a combustible material.
7. These were homemade explosives recovered from the field.
8. The P3 Mk2 anti-tank mine contained approximately 5 kg of TNT.
9. The PG-2 contained a TNT/RDX based shaped charge
10. The TM-62M anti-tank mine contained approximately 7.5 kg of TNT.
11. The term "igniferous soak" refers to a safe waiting period following EOD action involving a burn. HALO's SOPs for any EOD burning mandate a 30-minute wait from the last signs of fire or smoke.
12. Such items are often mounted on stakes or trees above ground level. Placing an explosive donor charge in these instances, particularly in the vicinity of tripwires, is challenging. Although the use of EOD tools such as shaped charges can mitigate this to a degree.