Norwegian People's Aid

*** NOTICE OF RE-RELEASE ***

Title of report:	**M85 - An analysis of reliability**
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The report *M85 – An analysis of reliability* was originally published in 2007 by Norwegian People's Aid in cooperation with the Norwegian Defence Research Establishment and C King Associates. It is being re-released because its insights are once again pertinent. The original text of the report — which informed the 2008 negotiations on the Convention on Cluster Munitions (CCM) — remains unchanged. Recent developments, however, make it essential to revisit the data, analysis, and conclusions this report contains.

Lithuania has withdrawn from the CCM and certain other European States are considering doing so. Such decisions appear to be driven less by analysis of contemporary warfare and technological developments than by rhetoric about the supposed utility of cluster munitions. Decision-makers should be highly skeptical of recent claims that "significant advancements" have been made in cluster munition technology since the adoption of the CCM in 2008 or that "enhanced safety mechanisms and self-destruct mechanisms" are now available that "minimize humanitarian concerns" associated with the use of cluster munitions.[1] Such assertions do not hold true.

The development of submunitions with self-destruct features represented a serious effort to overcome the problem of contamination with unexploded submunitions from cluster munitions. During the negotiations on the CCM, the M85 family of self-destruct submunitions was widely acknowledged as the best available technology with the lowest possible failure rate. The M85 report, however, demonstrated that they did not solve the problems that cluster munitions cause; they were part of the problem. Since 2008, some development and manufacture of new submunition types with new types of self-destruct mechanisms have indeed been documented (notably in Russia). But no new cluster munition is on the market or in development that meaningfully alters the key conclusions of the M85 report.

In re-releasing the M85 report, we seek to draw new attention to the following lessons learned:

- There is a substantial difference between submunition failure rates obtained during testing and those observed as a result of actual combat use.
- Submunitions are, *per se*, compromise technology: their small size drives unavoidable design trade-offs between effectiveness and reliability. Under operational conditions, therefore, they will always generate unacceptably high numbers of duds.
- While safety and self-destruct features can lower failure rates, their potential to do so is limited.
- Complex self-destruct mechanisms can also create more unpredictable submunitions that further complicate and endanger post-conflict clearance.

[1] See, e.g., Lithuania's Notification of withdrawal from the CCM, 6 September 2024.

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Norwegian People's Aid rejects claims that a submunition can be manufactured that can achieve a 1% failure rate in combat conditions. More importantly, even if a 1% rate were achievable in practice, this would still cause unacceptable levels of unexploded ordnance. Had all cluster munitions used over South Lebanon in 2006 had only a 1% failure rate, a legacy of roughly 40,000 duds would still have resulted.

It is a misrepresentation of field realities to respond to humanitarian concerns regarding cluster munitions by arguing that "all weapons have a failure rate and leave behind duds". The problem with cluster munitions is scale. The sheer number of submunitions involved radically alters the potential for duds. For example, if a unitary Army Tactical Missile System (ATACMS) missile and the cluster version of ATACMS that carries 950 M74 submunitions shared a hypothetical 10% failure rate, an attack using 500 of the unitary missiles would produce 50 duds, while an attack using 500 of the cluster missiles would produce 47,500 duds.

Furthermore, submunitions are typically smaller and more sensitive than unitary munitions. A child can easily pick up a small submunition lying on the surface, but not a large projectile buried in the earth. Combining the small size and large numbers of unexploded submunitions, that bring a high probability that they will be handled by humans, with sensitivity that is likely to result in detonation, means that the threat from unexploded submunitions is entirely disproportionate to that from unitary munitions.

Much of the current debate also overstates the battlefield value of cluster munitions. In reality, the perceived military utility of these weapons has been overtaken by newer technologies, while their humanitarian harm remains undeniable. It is acknowledged that faced with real security concerns, all ammunition has military utility. But States tempted to buy into arguments for a return to cluster munitions should invest instead in technologies that can shape the battlefield of the future — capabilities that can increase military effectiveness while also making it possible to reduce the impact on civilians and uphold international humanitarian law. Alternatives to cluster munitions are available that offer comparable or superior effects without leaving a lasting lethal footprint that endangers civilians, humanitarian relief operations, peacekeeping forces, and the user State's own forces. Alternatives include modern unitary high-explosive shells, guided unitary munitions, sensor-fuzed weapons, and other options.

Over the past three decades, Norwegian People's Aid has cleared submunitions left behind after cluster munition attacks in more than 20 countries and can attest that these weapons create long-lasting hazards that no State would wish to have on their territory. We strongly appeal to all States to refrain from rash action and instead continue to base policy on the field realities and on the CCM.

Cluster munitions are weapons of the past. Reintroducing them into European arsenals would not be militarily necessary. Nor would it be strategically sound. Eroding the principles of international humanitarian law that underpin the CCM is a self-defeating logic: short-term tactical benefit will be dwarfed by the resulting long-term civilian suffering and obstruction of recovery and development, undermine moral authority, and ultimately weaken the very security these decisions aim to strengthen.

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