

CANADIAN ARMY
NON-LETHAL REQUIREMENTS



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Project Director
Non-Lethal Laser Dazzler Project (DMS 00001234)
Crowd Confrontation Systems Project (DMS 00000278)



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16-17 June 09

Soldier Systems TRM
Visioning Workshop




OUTLINE

- Non-Lethal Capability Deficiencies;
- Existing DND Capital Projects
- In-service Equipment;
- Research & Development;
- NATO Initiatives; and
- Non-Lethal Requirements - Conclusion




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NON-LETHAL CAPABILITY DEFICIENCIES




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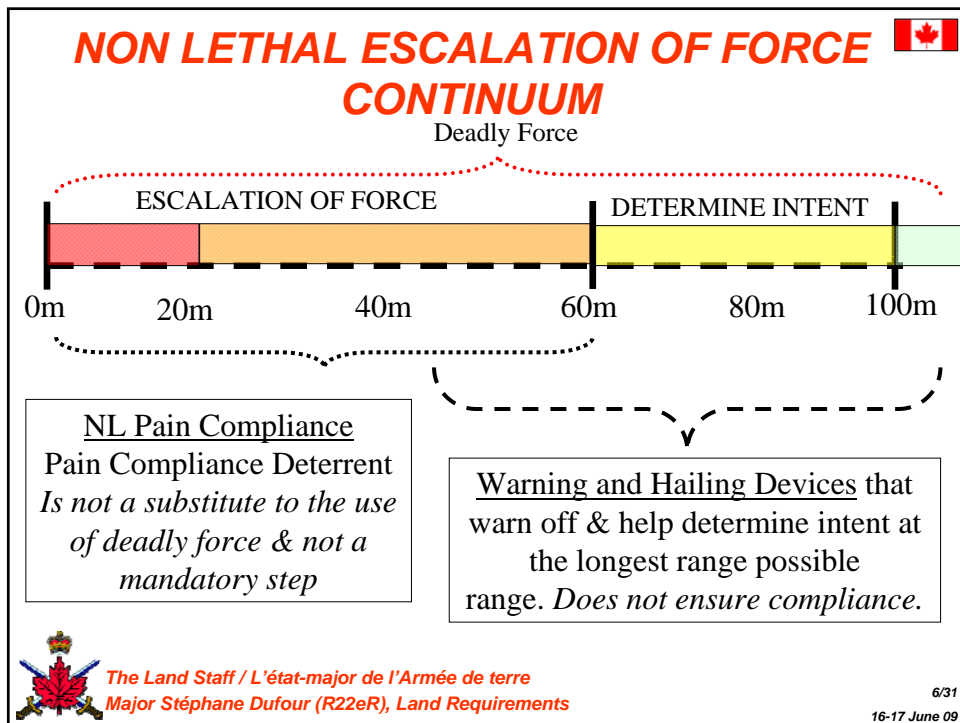
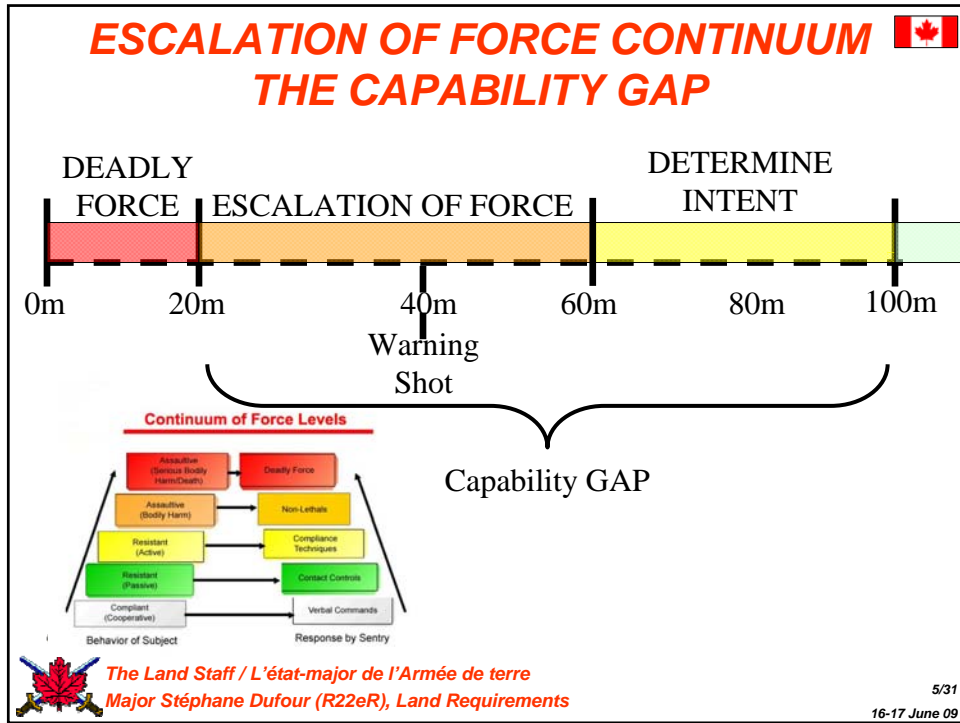
WHY NON-LETHAL EFFECTS?


- Military forces are more frequently deployed within population centres;
- 3D approach to operations leads to a more responsible approach to the use of force;
- Counter-insurgency operations are more frequent where combatants are not clearly identifiable;
- Need to discriminate between potential opponents and local population;
- Need to minimize undesired casualties, damages and fratricide; and
- Force needs to be applied proportionally with scalable effects.



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CAPABILITY REQUIRED

- The Army requires a Non-Lethal capability to warn, confirm intent, discriminate and ensure compliance from local populations of an undetermined combat status, within a range ensuring force protection and capability overmatch.
- Such a capability would enable the Army to manage escalation of forces events and ensure necessary steps are taken to ensure force protection while limiting non-combatant casualties.

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DND CAPITAL PROJECTS

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NON-LETHAL LASER DAZZLER (NLLD)

GLWD



R. Nicholls
(Insight Technologies)

- **IN DELIVERY**
- Provide a NL system to warn local population
- Device name: Visual Warning Technology
- 750 x VWT (OTS with tweaks)
- 21000 BEW Compatible LPL

VWT LPL




ReVision Eyeware




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NON-LETHAL ESCALATION OF FORCE PROJECT

- Procure a suite of non-lethal systems providing Land Forces with options other than deadly force in order to facilitate Escalation of Force (EoF) procedures.
- Focus on three critical issues:
 - Non-Lethal Launchers and Ammunition such as, but not limited to, blunt impact munitions and pepper spray (Shout and shoot gap);
 - Warning/ Hailing and Area Denial Devices such as loud hailers, visual warning devices and vehicle stopping systems to enhance Force Protection and vehicle check point operations; and
 - Revised Capability Doctrine, TTPs, ASSB & ILS as required.
 - Legal Review of Non Lethal Weapons.







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CANADIAN CROWD CONFRONTATION SYSTEMS PROJECT

DEFICIENCY

- **Lack the capability to resolve** a variety of likely confrontations with local populations;
- There is also a **lack of necessary capability to shape situations** or control events by means other than **deadly force**; and
- **Absence of intermediate, non-lethal means** of dealing with a crowd.

REQUIREMENT

- Deployed Army troops **must be properly equipped** in personal protection and Non-Lethal Capabilities;
- Need to **effectively and appropriately use force** in order to increase **force protection and limit collateral damage**; and
- Requirement based on the CF Crowd Confrontation Operations **Doctrine** was approved in **May 2003**.

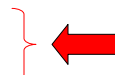


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CANADIAN ANTICIPATED CCO SITUATIONS

Relative Incidence of Situations Requiring Non-Lethal Weapons		
Situations	Likelihood	
Planned CCO Large	1	
Planned CCO Medium	4	
Planned CCO Small	5	
Total Planned Barrier CCO		10
Hostile Swarming Close	6	
Hostile Swarming Distant	6	
Ambiguous Swarming	8	
Possible Attacker Vehicle	10	
Possible Attacker Dismounted	10	
Desperate Crowd	7	
Search and Seizure	4	
Passive Blockade	4	
Total Reactive CCO		55
Total (Planned + Reactive) CCO		65
Expected Occurrence	%	Fraction
Percentage Occurrence of Planned CCO	15%	1/6
Percentage Occurrence of Reactive CCO	85%	5/6



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IN-SERVICE CF EQUIPMENT



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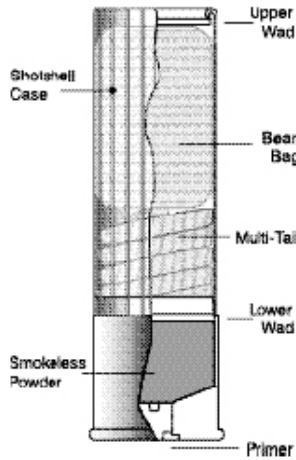
CROWD CONFRONTATION EQUIPMENT



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NLA – 12ga BEAN BAG ROUND



Characteristics

- Intended to be direct fired.
- Min safe effective range: 6m
- Max safe effective range: 23m



12 gauge, Drag Stabilized Rd

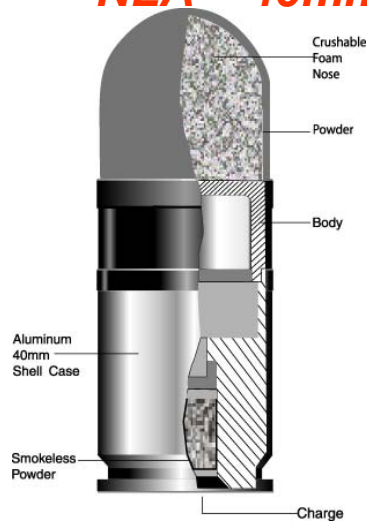


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NLA – 40mm SPONGE ROUND



Characteristics

- Fired from the M203A1 grenade launcher.
- Intended to be direct fired.
- Min safe effective range: 5m
- Max safe effective range: 37m



40mm, Exact Impact Sponge Rd

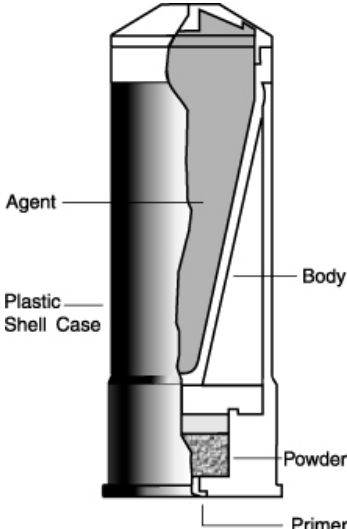


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NLA – 40mm FERRET CS ROUND



Agent

Plastic Shell Case

Body


Powder

Primer

40mm Ferret (CS) Rd

Characteristics

- “Barricade Breaker”. Can be fired through doors and thin walls to deliver a CS payload.
- Fired from the M203A1.
- Min safe effective range: 1m
- Max safe effective range: 45m



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NLA – DISTRACTION DEVICE



NICO – Distraction Devices

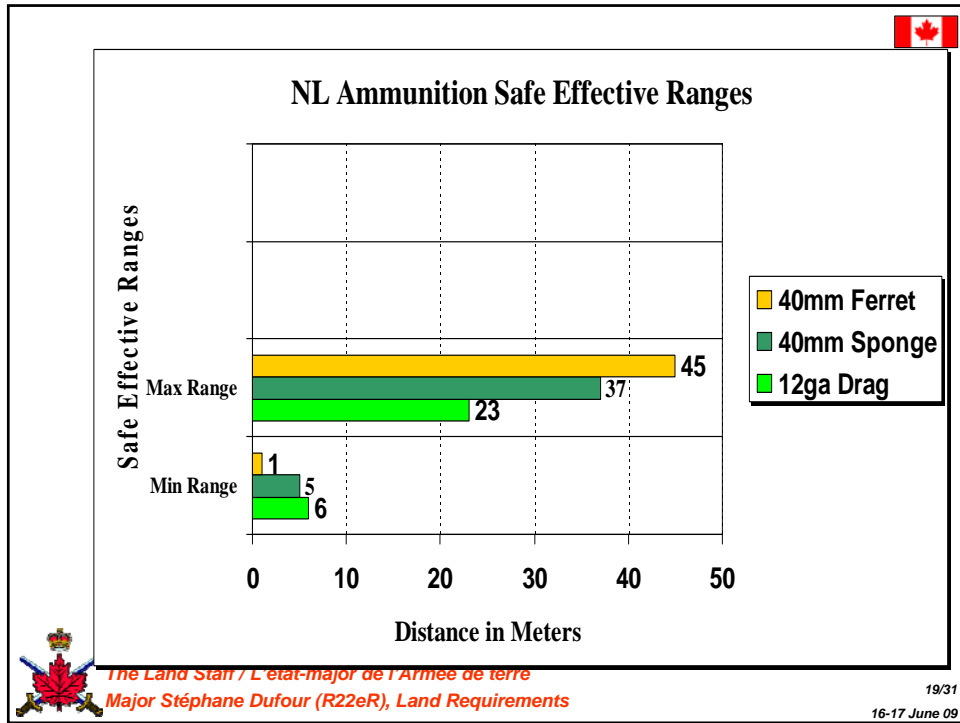
Characteristics

- Designed to incapacitate subjects for up to 3 seconds by delivering 9 consecutive “flashes” and “bangs”.
- Perfect tool to disperse a crowd, create a diversion and also incapacitate occupants within a room or a closed space.
- Once fired, the body cannot be reused or reloaded with an effect charge.



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RESEARCH & DEVELOPMENT

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CANADIAN NL OPERATIONAL RESEARCH

- *Optimum in-service NL launchers at Sect/PI level.*
- *Optimum in-service NL launchers at Coy level II.*
- *Optimum in-service NL launchers at PI/Coy level II.5 (using different MOEs than the above).*
- Optimum NL launchers at PI/Coy level III – Reactive CCO: In Progress.
- Optimum NL launchers at PI/Coy level IV – New Launchers: Planned.
- Optimum NL launchers at PI/Coy level V – Doctrine and TTP validation: Planned.




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CANADIAN NL RESEARCH & DEVELOPMENT

- Test Protocols for Measuring the Physical and Physiological Effects of NLW (NATO Cooperation):
 - Results will give us validated, reproducible test protocols; and
 - Data already collected can be used to influence capability requirement.
- Crowd Behaviour:
 - Aim is to assess and get validated models for crowd behaviours in various crowd confrontation situations;
- Behavioural Responses to NLW:
 - Aim is to obtain validated models for crowd and individual responses to NLW and NLW employment.
- Non-Lethal Technology Investigation:
 - Aim is to identify current, upcoming and future NL technologies that could be of interest for the Army and the CF.



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**CANADIAN UPCOMING NL R&D
& TECH WATCH**



- Testing of new, longer range (50m+) NL ammunition:
 - Extended range 12ga Bean Bag; and
 - Extended range 40mm Sponge Round.
- Testing of Extended Range Electronic Projectile rounds;
- Testing of Acoustic Devices; and
- Testing of Voice Translators.



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NATO INITIATIVES



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NATO TOPICAL GROUP 3 NON-LETHAL CAPABILITIES



- Area of Responsibility:
 - the NATO Army Armaments Group (NAAG) focal point for all Non-Lethal (NL) activities...
- Mission:
 - ...strive to significantly improve NATO and Partnership for Peace (PfP) NLC across the full spectrum of operational requirements, mission areas, and operating environments in order to achieve a better understanding and interoperability within NATO.
- Deliverables: STANAGs.



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NATO DEFENCE AGAINST TERRORISM 11 NON-LETHAL CAPABILITIES



- Canada chairs.
- Aim is to field NLC to ISAF troops within the next 18-36 Months.
- Supporting Nations:
 - Canada;
 - Belgium;
 - Denmark;
 - Netherlands;
 - Norway;
 - United Kingdom;
 - Russia;
 - United States (TBC).



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NON-LETHAL FUTURE REQUIREMENTS



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NON-LETHAL AMMUNITION

- Improved range (closer/longer);
- Improved accuracy;
- Scalable effects (close to long range with the same round);
- Reproducible, measured effects against an industry/scientific standard;
- Militarised ammunition reliability standards (usage/storage);
- Reversible effects; and
- Reliable, immediate effects on the target.



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WARNING AND HAILING

- Smaller, lighter, multi-function devices.
For example:
 - Dazzler+white light+IR light+strobe
 - Acoustic + real time 2 way translation
- Voice Translation: hands-free, true 2 way, immediate, 99.9% reliable.



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CONCLUSION

- The local population will not go away: serious need to invest in NL capabilities for the future;
- The use of separate NL launchers from the primary weapon carries unacceptable risks especially if force escalates rapidly;
- Longer ranges for NLA are required: 100m +;
- Simple to use: pick up and go;
- Interoperability is key;
- Scalable effects highly desirable;
- Increase cooperation between Law Enforcement, Industry, Academia & Military; and

National & International Issues.



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