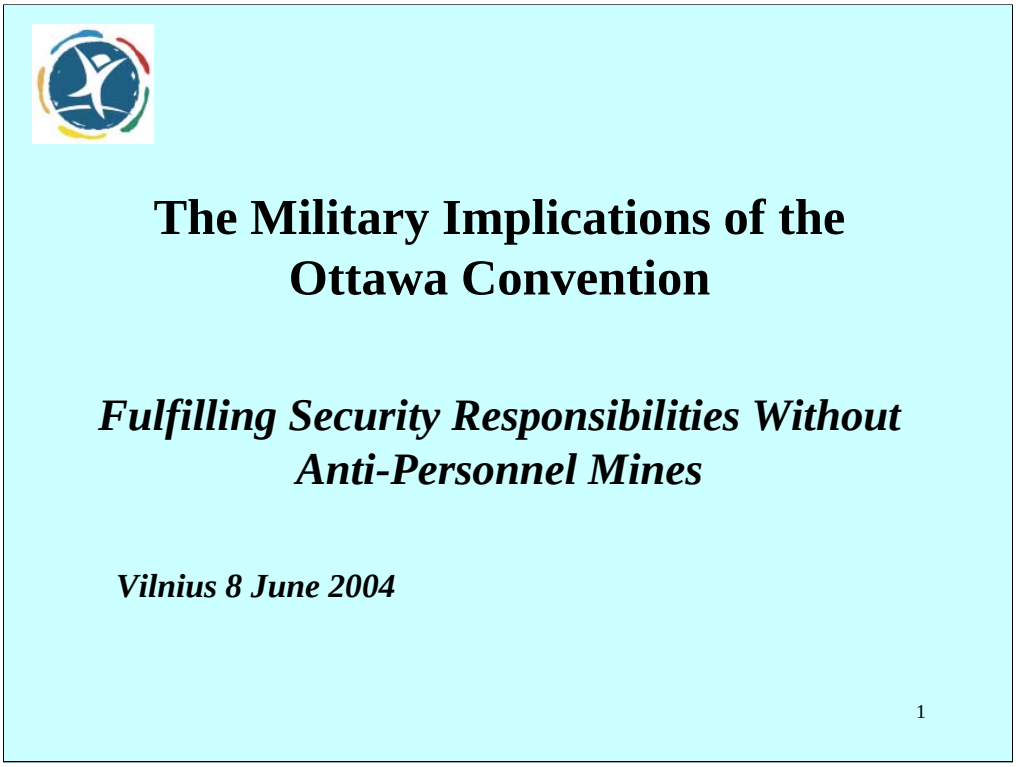
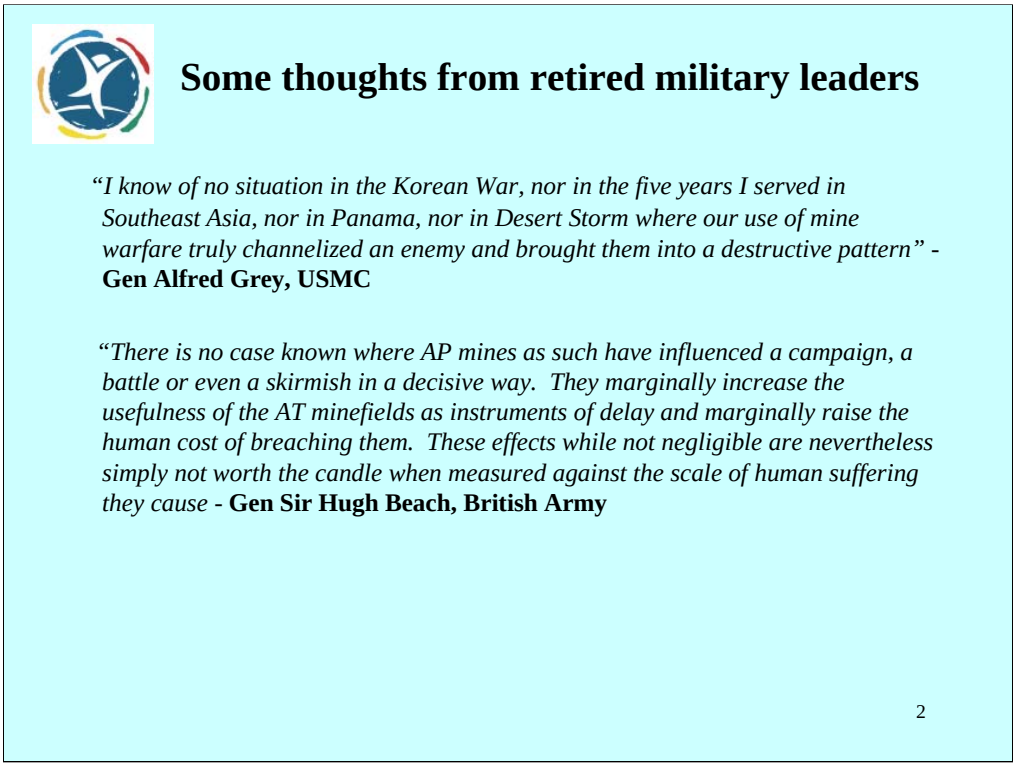


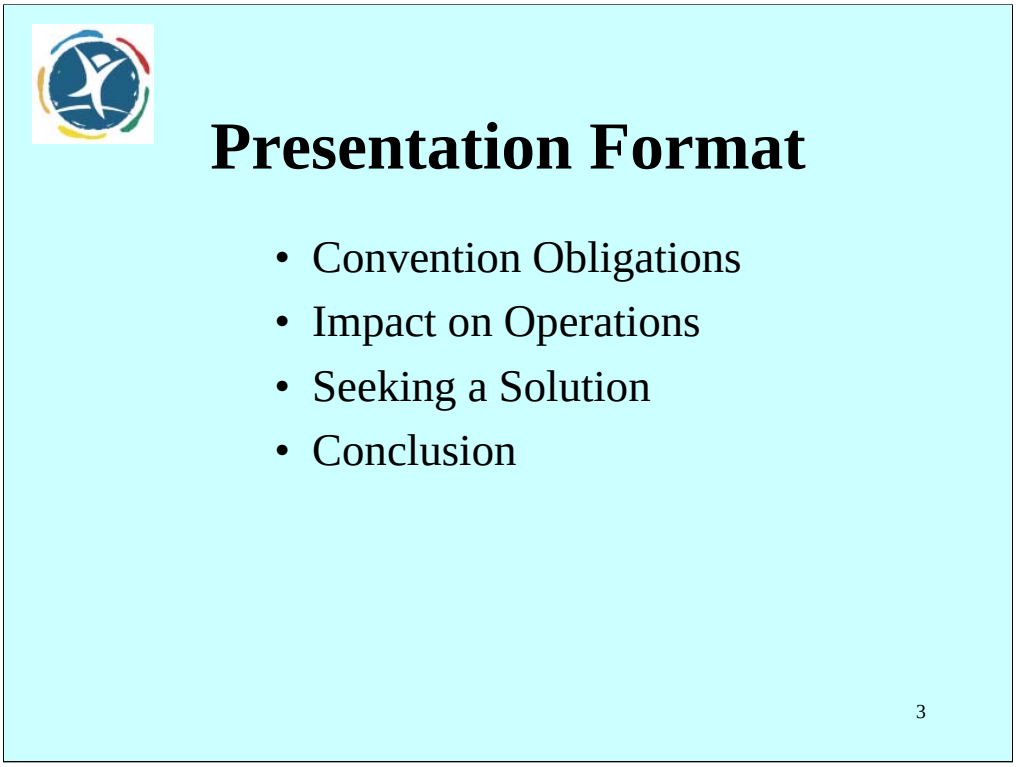
The advertised title of this presentation is "Adapting military doctrine, studies on alternatives". While I am going to talk about that I thought it would be appropriate to also add in what armies must do to be Ottawa Convention compliant. As a consequence I have entitled the presentation – The Military Implications of the Ottawa Convention" or "Fulfilling Security Responsibilities without anti-personnel mines".



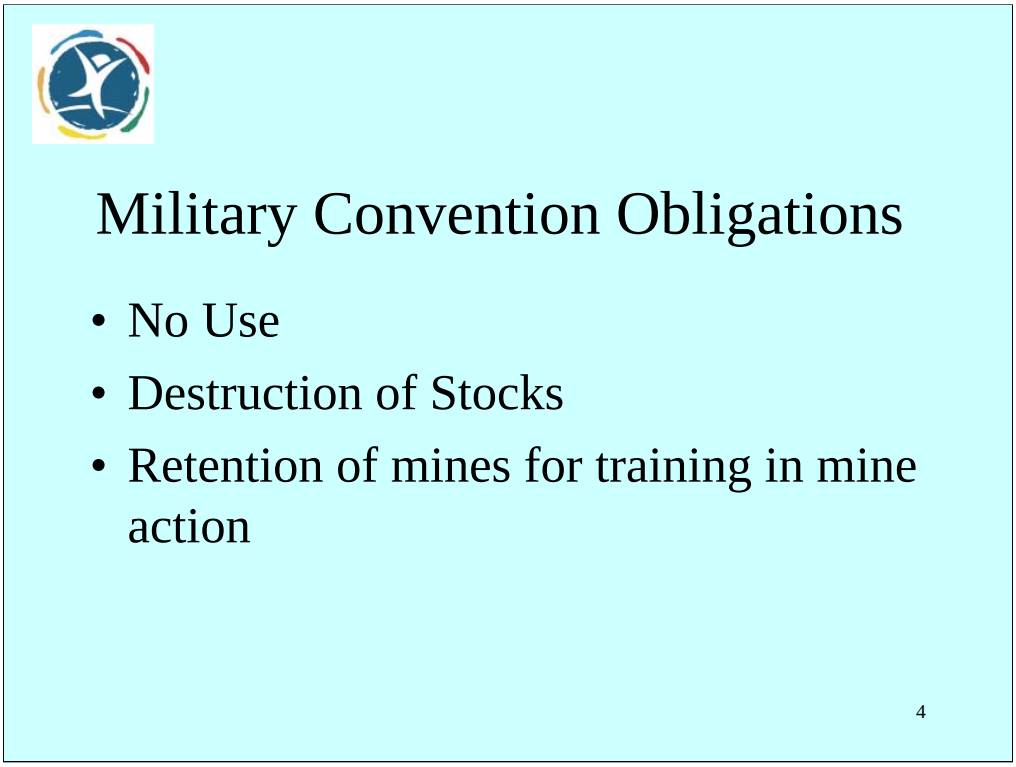
As a lead in to the topic I thought it might be useful to draw on the experiences of a couple of senior military officers who have expressed strong opinions on the usefulness of AP mines.

Read

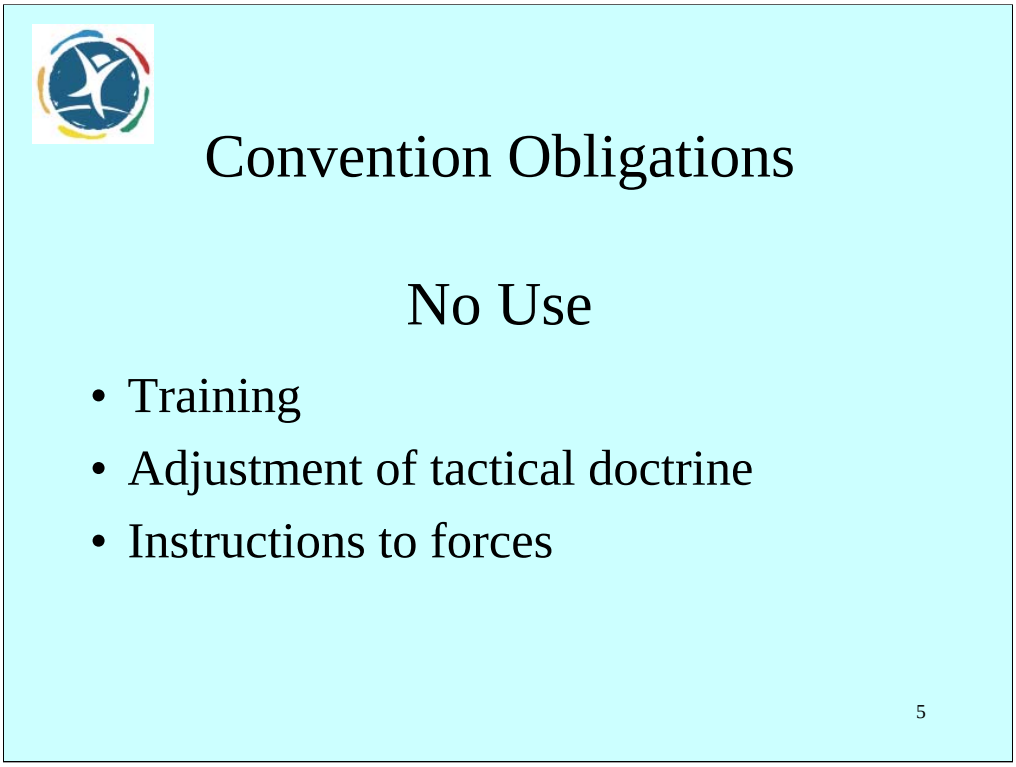
Note that this last comment is key - these mines, even if they were to be militarily useful, are simply not worth the human cost



The presentation will follow this format.



From a military perspective, the Convention commits the army of any country not to use this weapon and to destroy its stock. It does permit some mines to be retained for specific purposes.



Upon acceptance of the Ottawa Convention, military forces are prohibited from using the types of anti-personnel mines that are banned by this Convention. It should be noted that the mines that are banned are those anti-personnel mines that are victim activated. Command detonated or "soldier in the loop" systems are not prohibited. Examples of this are the US Claymore and the Russian MON series of directional weapons. Holders of the weapon must remove and destroy the trip wire mechanism, the whole weapon does not have to be destroyed. Note also that anti-tank or anti-vehicle mines are not prohibited.

This "non-use" has an impact on training both at the individual and collective training level.

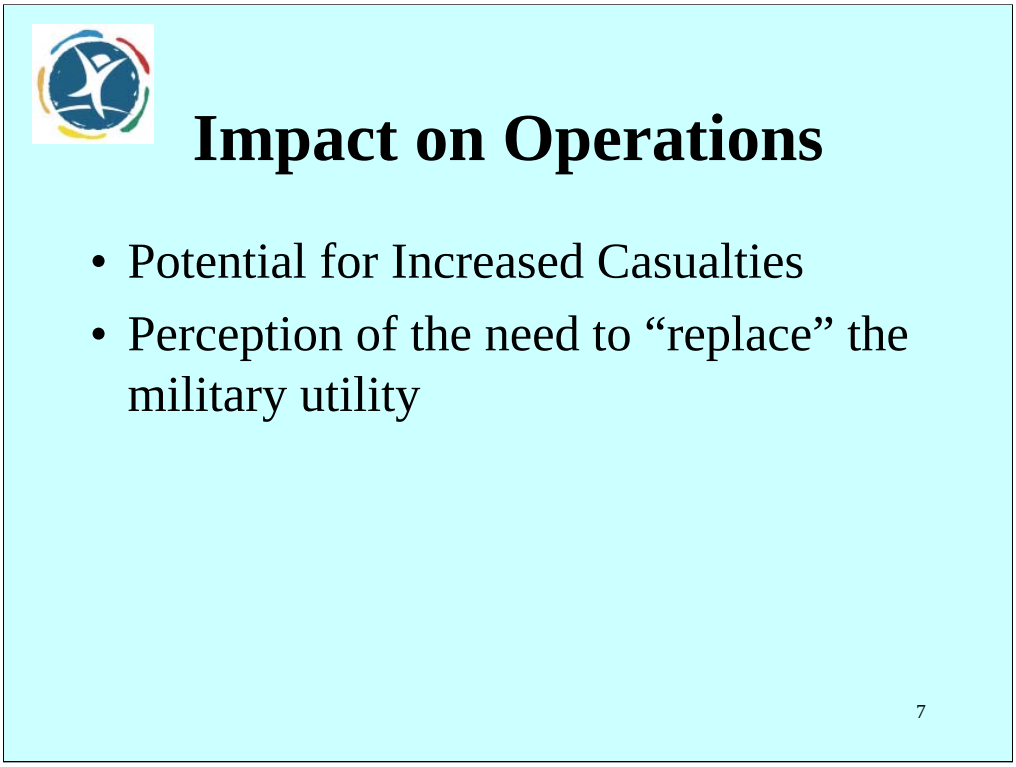
Individual training for using or laying anti-personnel mines is immediately impacted and must be stopped. Individual training of demining and breaching operations should be revised and improved.

Collective training including field exercises, tactical exercises without troops and command post exercises must not plan or lay minefields that use anti-personnel mines. Training in planning and laying of anti-tank minefields would continue.

Special instructions to field units and formations and to training establishments also must be issued. In Canada this was done initially by a letter from the Chief of the Defence Staff and included direction on operations including operations with other countries not parties to the convention.

The Convention obliges State Parties to destroy their stocks of anti-personnel mines as soon as **possible but not later than four years after the treaty enters into force. In most instances this activity has been completed by the military forces of that country, at least when the method chosen has been open detonation. In other cases because of environmental regulations or large quantities, other destruction methods have been chosen, often carried out by commercial demilitarisation methods.**

Article 3 of the convention states "the retention or transfer of a number of anti-personnel mines for the development of and training in <u>mine detection, mine clearance, or mine destruction techniques</u> is permitted. The amount of such mines shall not exceed the minimum number absolutely necessary for the above-mentioned purposes." The numbers should be only those required for this purpose – the common interpretation is "hundreds or thousands not tens of thousands. As an example Canada retained the right to keep up to 2000 of these mines.

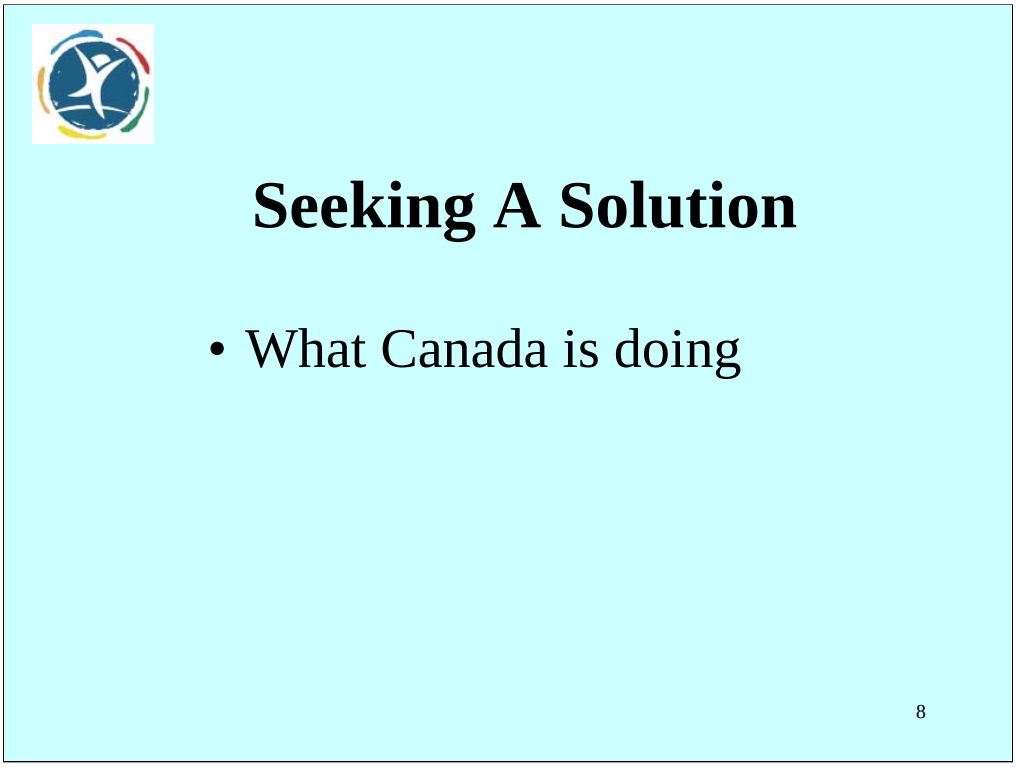


Studies by military and non-governmental organizations, have shown that removing anti-personnel landmines from the inventory, without replacing the utility, could cause an increase in military casualties. Other studies indicate that there is a requirement to compensate for the military utility provided by AP mines through some sort of alternative including changes to military doctrine and tactics.

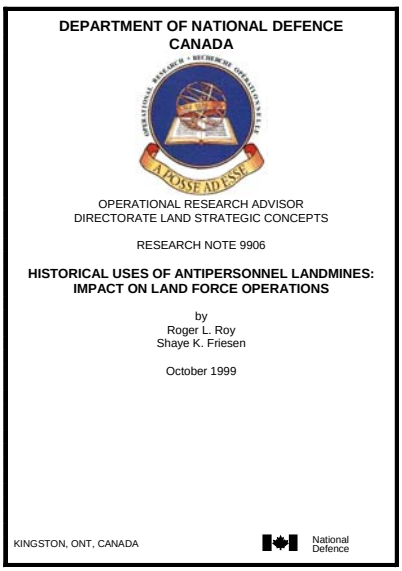
The real question is do we need to replace this utility or as some argue, has it already been replaced? Indeed some are starting to advance the idea that these weapons were most useful in World War 2 and possibly Korea, and that simple improvements to military equipment since that time has already replaced the utility.

The studies that have been undertaken following the 1996 ICRC Friend or Foe study, showed that AP mines do have some utility BUT it is not high. These weapons cause casualties to civilians far in excess of what their military utility might legitimately justify.

I would ask the question, if the perceived utility is so high, why is that there is almost no work in this area by the militaries of the 142 States Parties to the Convention ? In fact why does it not fit within the priorities of military R and D or procurement of Ottawa Convention countries? Is it because replacing them is not seen as a real operational requirement, have AP mines gone the way of the horse and the sword?



Canada has conducted two studies with a view to both determining the effect the loss of AP mines has on the battlefield and searching for a means to replace the loss of military utility.



DEPARTMENT OF NATIONAL DEFENCE
CANADA

OPERATIONAL RESEARCH ADVISOR
DIRECTORATE LAND STRATEGIC CONCEPTS

RESEARCH NOTE 9906

HISTORICAL USES OF ANTIPERSONNEL LANDMINES: IMPACT ON LAND FORCE OPERATIONS

by
Roger L. Roy
Shaye K. Friesen

October 1999

KINGSTON, ONT, CANADA

National Defence

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The first study was a historical perspective on the use of AP mines which overall concluded that mines have never determined the outcome of a conflict.

These next two slides show some of the findings.

Historical Use – Selected Findings

A systematic combination of other lethal weapons was equally, if not more, efficient and could be suitably used in place of AP mines.

The use of manoeuvre and firepower could overwhelm AP mines.

AP mines may not have been war-winning weapons and did not singly influence decisive battles.

10

A systematic combination of other lethal weapons (i.e. tanks, air power, artillery, mortars, and machine guns) was equally, if not more, efficient and could be suitably used in place of AP mines.

The use of manoeuvre or a superior concentration of force and firepower could overwhelm AP mines.

AP mines may not have been war-winning weapons and did not singly influence decisive battles. It was extremely rare that a tactical situation arose where AP mines alone were the single killing agent. The same could be said for any other weapon. AP mines did however render movement at the lower levels difficult (especially when used in combination with AT mines) and did influence the pace of operations.

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11

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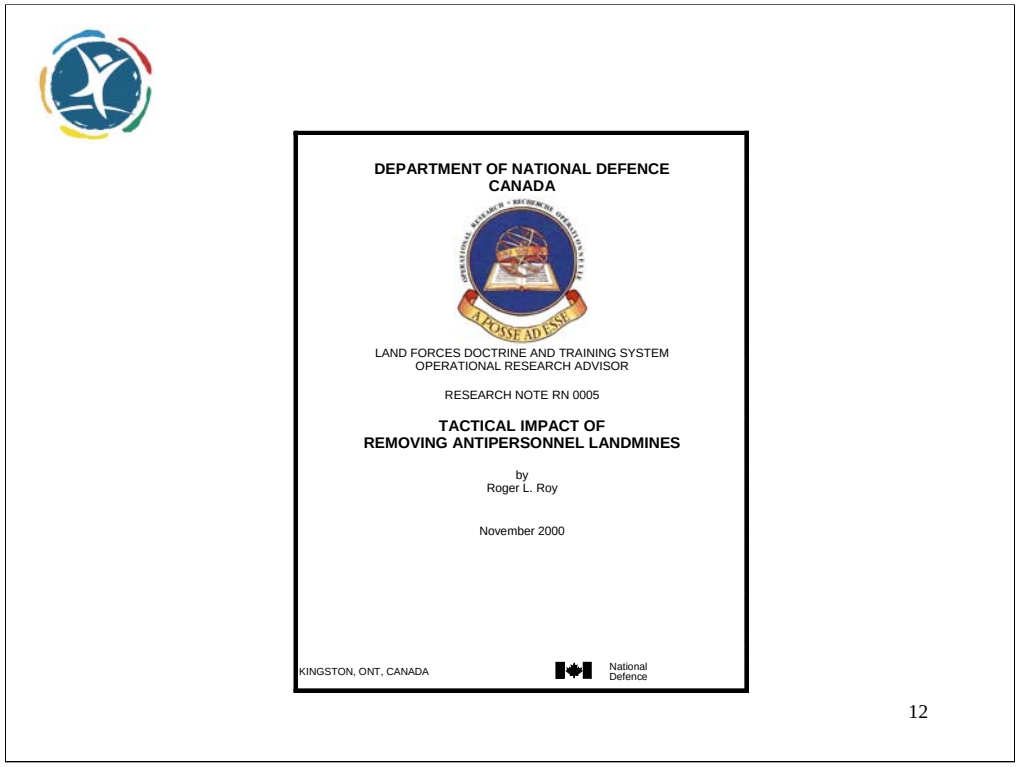
AP mines did however render movement at the lower levels difficult (especially when used in combination with AT mines) and did influence the pace of operations.

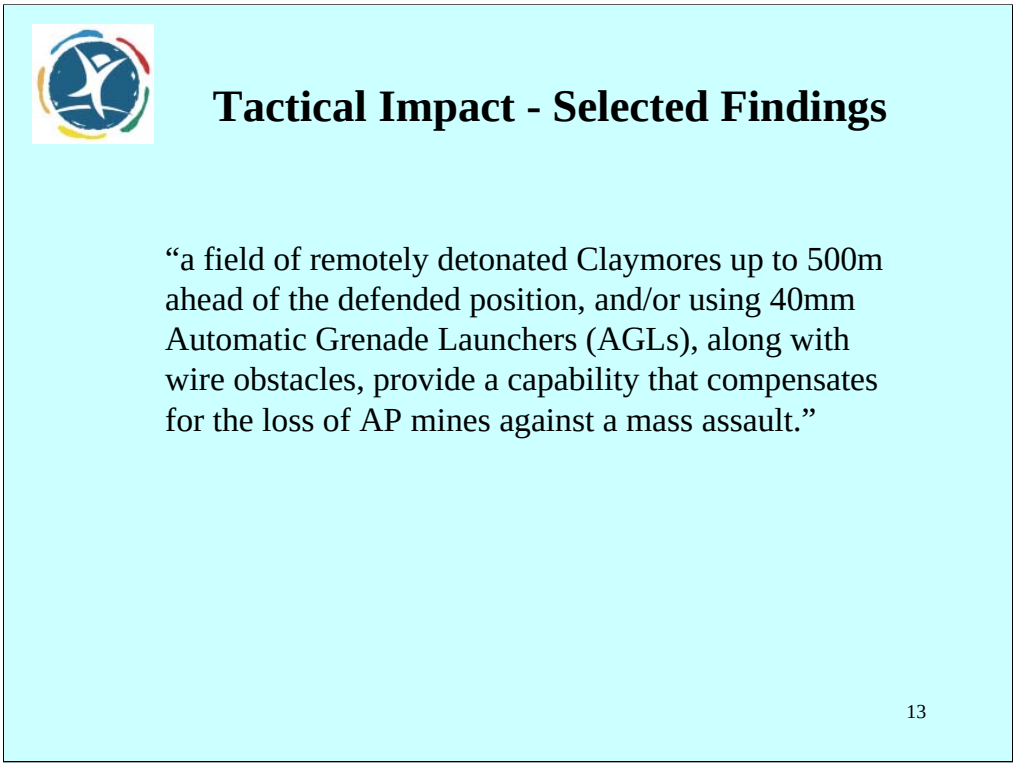
In mid-to high intensity conflicts, where organized forces fought conventionally, AP mines found in barrier, static and protective obstacles proved relatively inconsequential if a sufficiently determined or concerted effort was made to overcome them.



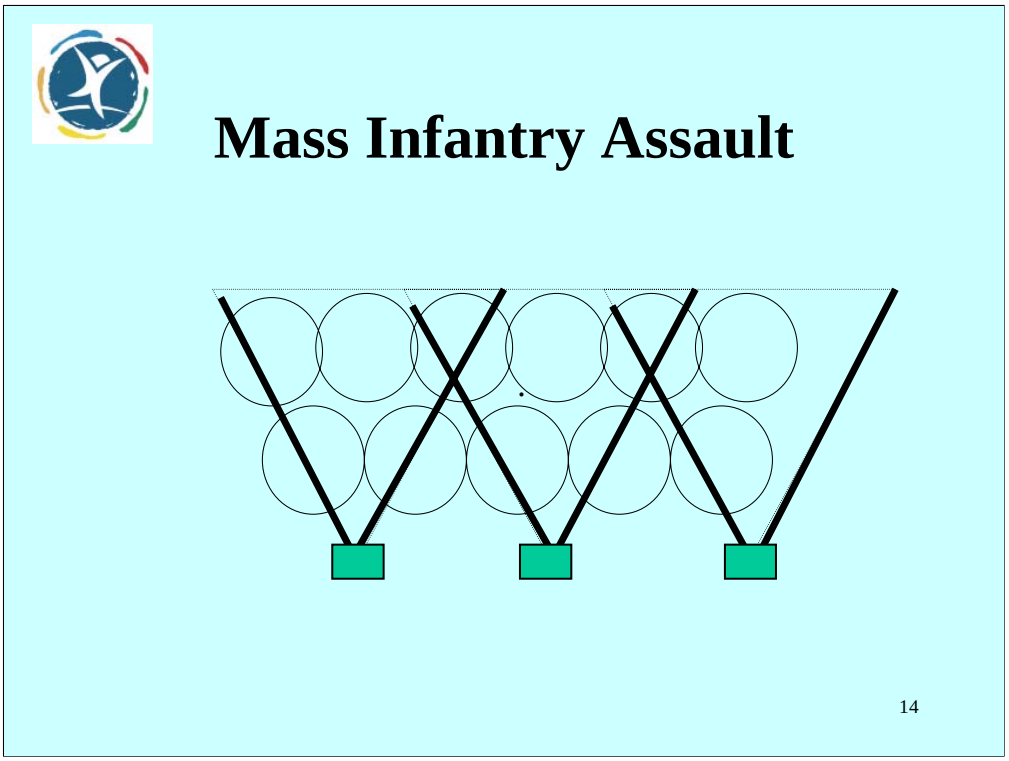
The second study was an operational research war-game looking at a defensive scenario, with mines, without mines and lastly, again without AP mines, but with changes to tactics and use of weaponry.

The setting was a dismounted platoon defending against a battalion dismounted attack. In the operational research war game the defence was successful with the use of AP mines primarily because the delay imposed allowed the defender to engage and destroy the enemy. The defence was not successful without AP mines because the enemy was not slowed sufficiently to engage him and no attempt was made to replicate the military utility of AP mines.

In the third scenario, that is only use of weapons permitted by the Convention, the defence was successful with the use of Claymore or MON type mines in the command detonated mode along with the use of an automatic grenade launcher.



The specific finding was "a field of remotely detonated Claymores up to 500m ahead of the defended position, and/or using 40mm Automatic Grenade Launchers (AGLs), along with wire obstacles, provide a capability that compensates for the loss of AP mines against a mass assault."



The defence was successful partly because of the use of command detonated claymore munitions deployed in a unique way and from the replacement of a platoon mortar with an automatic grenade launcher. The study also indicated that research into a non-wire system for command detonation of the Claymore should be undertaken.

This slide illustrates an AP minefield of M16A2 mines. The circles represents the danger area. Placing a lesser number of MON or Claymore mines in the command detonated mode, shown by the tip of the triangle, would have the same effect but be Convention compliant.

Cost Comparison

MINE	SPACING (# of mines)	COST PER ROW	(TOTAL COST) 1 Row	3 Rows	6 Rows
C3A1/A2 (ELSIE)	6 meters (66/row)	$2244	$2244	$6732	$13464
	2 meters (199/row)	$6766	$6766	$20298	$40596
M16A1	6 meters (no wire) (66/row)	$4290	$4290	$12780	$25560
M16A2	30 meters w/trip wire (13/row)	$845	$845	$2535	$5070
M18A1 Claymore	40 meters (10 Total)	$312 (each)			$3120

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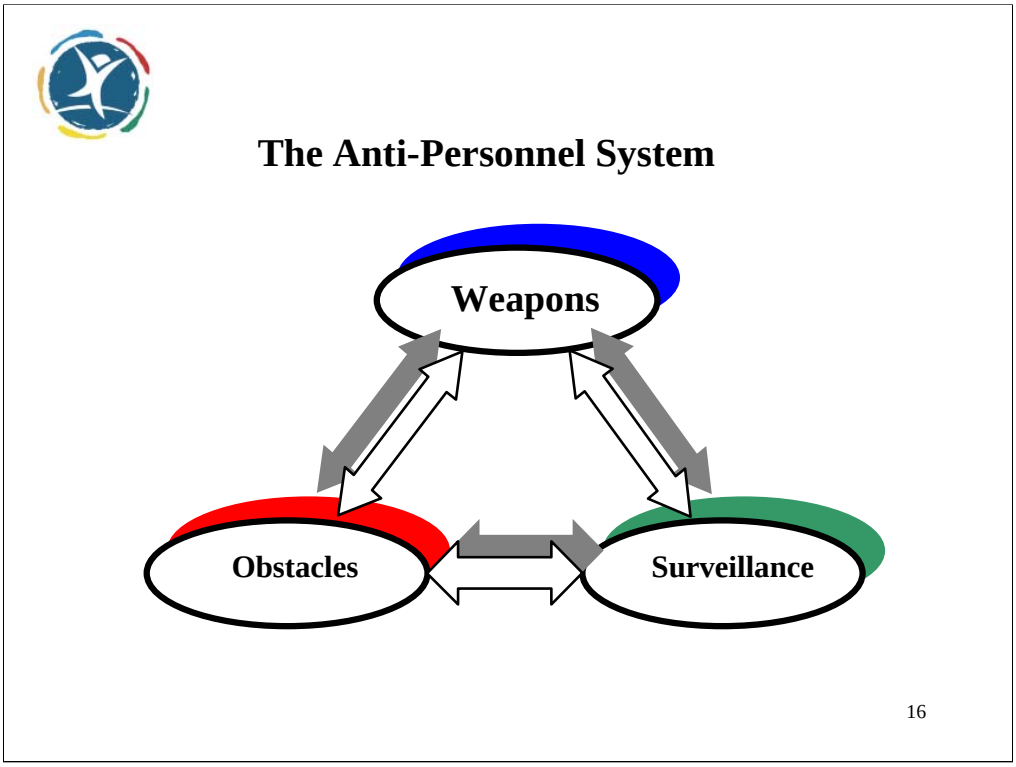
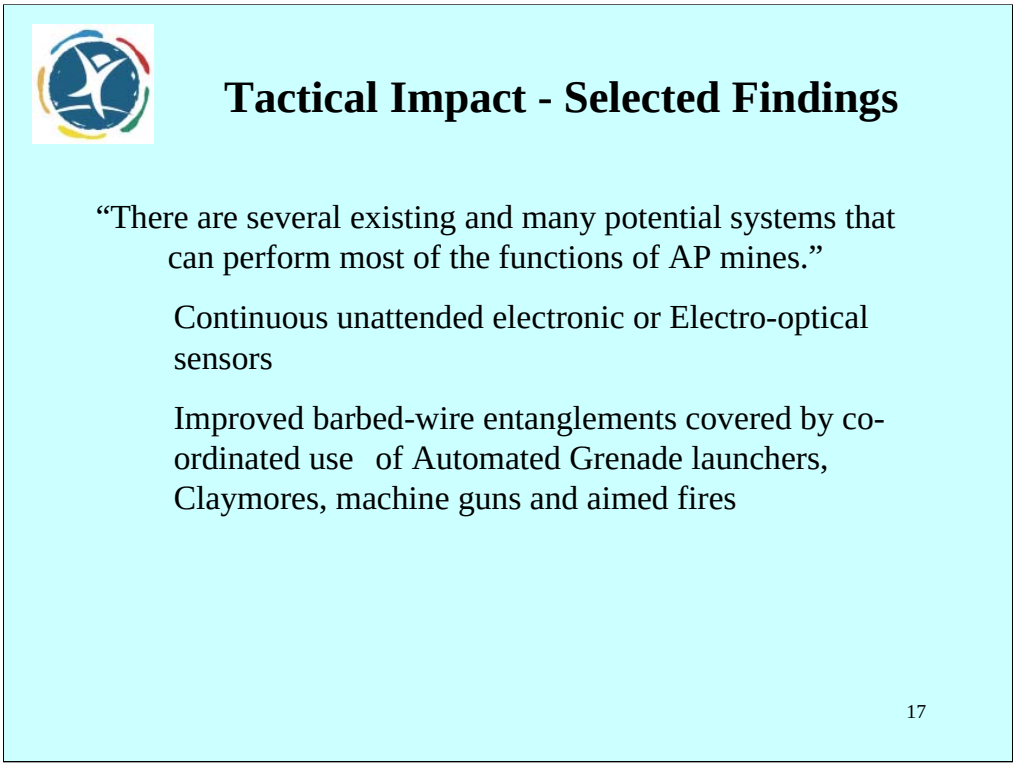
At a cost of about $300 per Claymore, the cost of Claymore munitions would be less than the cost of traditional AP mines and achieve a greater military result. Set up is easier and faster than having to dig, bury and mark a lot of mines.



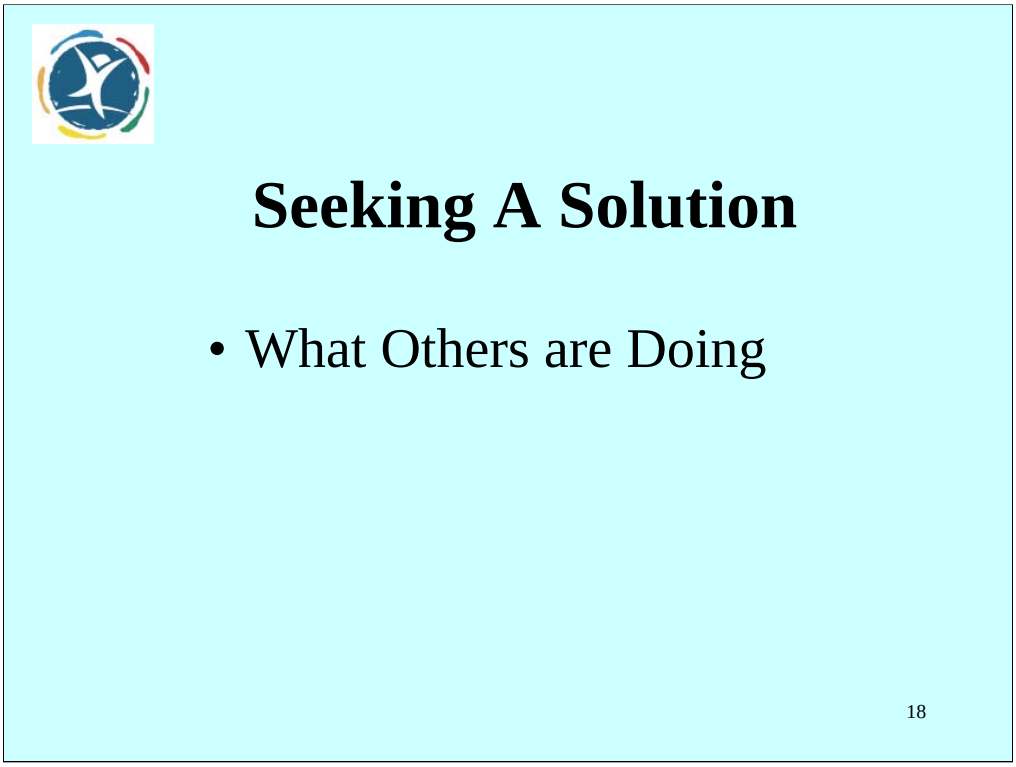
The study also found that it would be necessary to look at the balance between surveillance systems, obstacles and weapons. This would require that the antipersonnel capability be examined as an integrated system and no longer as separate systems



The study also found that there were several existing and many potential systems that can perform most of the functions of AP mines.

Continuous unattended electronic or Electro-optical sensors can improve the detection from hidden approaches and data links can trigger immediate response by long-range direct and indirect fire weapons, achieving both greater effectiveness and far fewer indiscriminate casualties than AP mines.

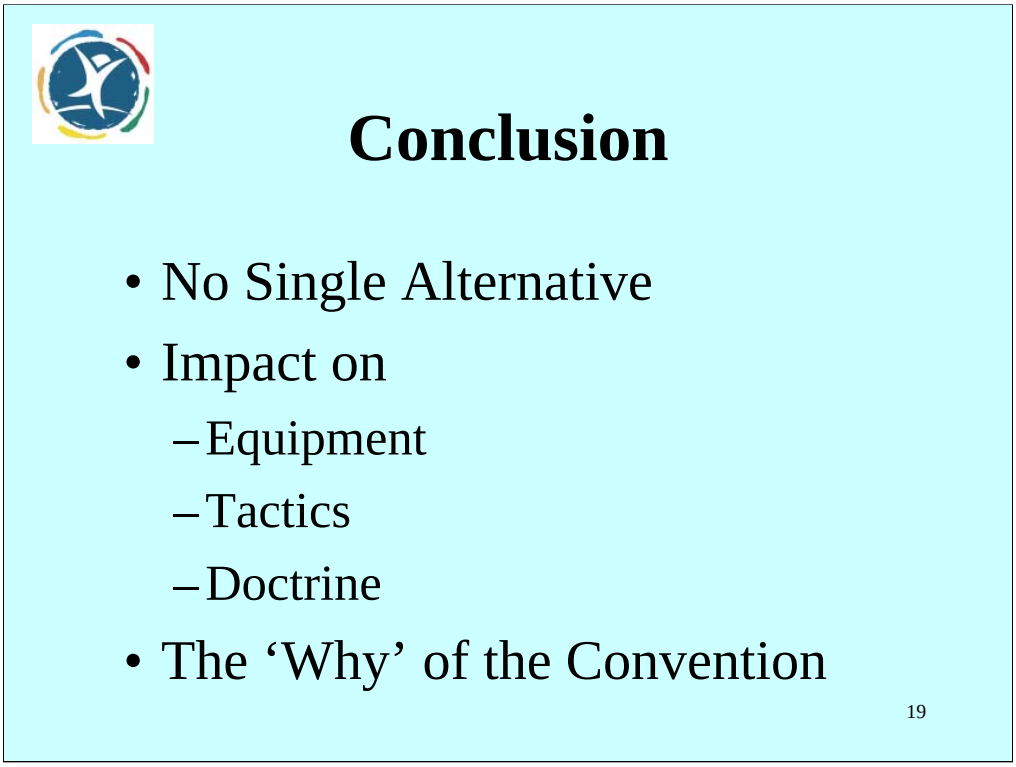
Improved barbed-wire entanglements covered by co-ordinated use of Automated Grenade launchers, Claymores, machine guns and aimed fires can provide close protection, exert an equivalent deterrence effect on enemy troops and help delay hand-breaching by dismounted troops. However, there is the possibility of greater ammunition consumption levels, increased unit footprint, and greater manpower and logistics requirements that result from these AP mine alternatives.



Many nations are theoretically searching for alternatives to AP mines. These searches range from some weapons development work in the United States and France to the sort of study that Canada has done. As an example, NATO recently completed a study on the impact of the removal of AP mines. There is no apparent priority being placed on replacing AP mines in any of the 142 States Parties.

All but two of the NATO nations have signed the Convention. Only the US and Latvia have not. One NATO nation, Poland has signed but not ratified the Convention.

Canada participated in the NATO study, the results of which included a listing of member states alternative studies and proposals. It should be noted that the weapons looked at were not restricted to lethal weapons and most solutions were only conceptual.



Studies have shown that there are times when AP mines add to the effectiveness of military operations. What is becoming increasingly obvious is that there is no such thing as "one" alternative. If in fact an alternate is needed, a composite solution, including changes to doctrine and tactics, different methods of employment of current weapon systems and the development of new weapons and equipment appears to be the way ahead.

In this presentation I have attempted to show the obligations of an army that is bound by the Ottawa Convention, some results of historical examinations of the relative utility of these mines, and that the usefulness of AP mines can be replaced by minor changes to tactics and doctrine so that an army can achieve the same level of effectiveness. Many armies already possess the weaponry to achieve this.

Finally we need to remember that the Ottawa Convention was enacted for humanitarian reasons, the very limited advantage gained in the use of AP mines is clearly too little to warrant the high numbers of innocents terrorized by this weapon. Responsible armies do not permit their soldiers to kill indiscriminately. These types of mines are indiscriminate killers and the limited military utility of the mine is in no way worth the humanitarian cost.