The Politics of Military Technology: War Without (Our) Blood

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The conflicts being played out in Iraq and Afghanistan both pit regular armed forces of Coalition nations against irregular insurgent forces. Such conflicts have traditionally required large numbers of ground soldiers. In the twenty-first century though, technology is more important than the number of boots on the ground.

The reason is the West's low tolerance for casualties in its own armed forces. Every soldier killed is a newspaper story, and the monthly tallies are pored over by the media. Even the US cannot politically sustain hundreds of dead per month. Continuing a war that kills 58,000 Americans, as happened in Vietnam, would be unthinkable now, even though it is low by historical standards.

The insurgents have no chance in pitched battles, even on the smallest scale. Precision weapons and good communications mean that the Coalition can call up devastating firepower at will. But the insurgents realise that killing even small numbers of Coalition troops might undermine the West's political will to continue. Equally, the Coalition forces know that keeping their casualties to a minimum is an absolute priority, as no other factor is likely to force them out. So it is the improvement in defensive technology that is most significant in ensuring that they can continue operations.

One example is new body armour such as Interceptor, a modular armour ensemble which uses new composites to give better protection at lighter weight than ever before. In previous wars soldiers had been permitted some latitude in whether or not to wear it, but the rules are now strictly enforced. It may be hot and uncomfortable, but the armour has saved many lives. It is still evolving, with additional coverage and hard armour inserts to match areas where most injuries are reported.

Secondly, the approach to battlefield medicine has progressed. Forward Surgical Teams are now deployed right up with the combat troops to ensure that medical attention can be given in the initial 'Golden Hour' when lives can be saved. The proportion of those injured who die is now 10%, compared to around 24% as recently as the 1991 Gulf War.

Insurgents now rely heavily on roadside bombs known as Improvised Explosive Devices, as other forms of attack tend to be ineffective. The US has responded by fielding increasingly armoured vehicles. In 2004 there were many unprotected Hummer "Jeeps" in Iraq; these were quickly fitted with various upgrades. When bolt-on armour proved unsatisfactory, a crash program was instituted to field Mine Resistant Ambush Protected vehicles (MRAPs). The multi-billion dollar MRAP program has provided thousands of armoured trucks with high, boat-shaped hulls which are resistant to all but the heaviest blasts.

Technology is also replacing the traditional machine-gunner standing in a vehicle hatch protected by a gun shield. The trend now is for Remotely Operated Weapon Stations, with a crewman operating weapons on an external turret using a video ink.

The same principle of keeping human soldiers out of harm's way has applied increasingly to bomb disposal. Rather

than approaching in person, engineers tackle it by remote control using a robot. More than 30,000 bomb disposals have been carried out using Talon robots alone. Taking this one step further, there are currently trials with armed ground robots operated remotely. The soldier himself can be kilometres away from the scene of the action. The US Army's new Future Combat System initiative envisages a whole series of robotic vehicles to supplement manned tanks and personnel carriers.

Keeping a safe distance and maximising firepower has also led to the unprecedented use of aircraft in the current counter-insurgency operations. Even in 2008, airstrikes have been carried out inside Baghdad itself. In 2006, the USAF flew less than 300 sorties which involved releasing munitions, but in 2007 it was over a thousand.

Modern airpower is now largely a matter of precision weapons. Whilst laser-guided bombs proved their value in Vietnam, they have always been an expensive commodity. US pilots refer to 'dropping a BMW' when they release a laser-guided bomb, as they cost around $100k each. In recent conflicts there are a large number of much cheaper precision munitions which use the satellite global positioning system for guidance.

Emphasis is also shifting to smaller weapons with greater accuracy. Where once a 2,000 lb bomb was used, in urban areas doctrine may demand the use a 20 lb Hellfire missile. However, target identification is still critical. There have been many recent instances where the target building or vehicle has been hit with great precision but its identity has been mistaken and there have been civilian casualties.

One of the key tools for locating and identifying insurgents are the unmanned aircraft or drones. These can remain on station for much longer than manned aircraft, in some cases forty hours or more, scanning the earth with unblinking lenses. They are operated by relays of pilots thousands of miles away. The US unmanned aircraft fleet stood at 167 in 2002, but the number is now increasing at over 2,000 a year.

Increasingly these unmanned reconnaissance aircraft are used to attack targets they identify. In particular Predator drones have become the preferred method of attacking insurgents in the rugged Afghan-Pakistan border area. A hundred and twelve such strikes were carried out in 2007 and the number is rising. The Predator only carries a single missile, and is now being supplemented by the larger Predator-B or Reaper, which can carry four missiles and two GPS-guided bombs.

If the current trends continue, we can expect Coalition troops to be kept further from danger than ever before. Warfare will become ever more remote, with combat power being provided by various robotic systems, crewed remotely. In many cases these systems will do their patrolling largely autonomously, with the human operator only required when a potential target is spotted.

This is warfare very much geared to the CNN Factor. Whilst Generals may see casualties as being an unavoidable aspect of war, the public and the politicians do not. And, as the technology progresses, human casualties may become rarer and rarer – among soldiers, at least.

It will take a similar amount of political pressure for the thrust of technology to be moved towards minimising civilian casualties. As the battlefields fill with swarms of unmanned craft, it will be increasingly possible to ensure that a target is positively, even individually, identified before the trigger is pulled. Smaller weapons (such as "micro munitions" already on the drawing board) could virtually eliminate "collateral damage."

Military technology continues to be driven by political aims. At present, the demand is for wars in which our soldiers do not get killed, and this demand is increasingly being met. Insurgencies are being fought not so much by massed manpower as by technology – though for the present significant numbers of troops are still needed.

In the decades to come, the demand may shift to another priority and the technology will be developed to meet it. We should be careful what we wish for.

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