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Peacekeeping and the Revolution in Military Affairs: A Question of Relevancy

by
Elinor Sloan

INTRODUCTION

Advances in information technology are driving a high-tech Revolution in Military Affairs (RMA). New military technologies are being harnessed and incorporated into new military doctrines and organizational concepts to such an extent that the ultimate result could be to transform the nature of modern warfare. Of the many dimensions the debate surrounding the RMA has taken over the past few years, one of the most important is the question of relevancy. How relevant is the RMA and its associated technologies and doctrines to the types of conflicts Canada and its allies are most likely to face in the foreseeable future?

Few would question that the RMA is well suited to high-intensity war against a modern, advanced conventional armed force. But this is only one contingency along the spectrum of possible conflict scenarios, and many would argue it is the least likely in the near to medium term. Many of the conflicts the Western world is likely to address will be low-intensity in nature and involve unconventional forces. In the future, the requirement is likely to be less for high-intensity warfare to reverse military aggression between states, and more for smaller scale contingencies – from humanitarian assistance to peacekeeping to peace enforcement and post-conflict peace implementation – in response to an intrastate conflict. Nor has the war on terrorism sidelined this requirement: the US-led coalition in Afghanistan has been responding to an unconventional adversary and is now heavily engaged in peace-building efforts.

This article looks at the RMA's applicability to peace support operations, examining the degree to which key RMA technologies and doctrines were or were not relevant, useful or effective during recent peacekeeping missions. Focusing especially on the international experience in the Balkans, it draws conclusions as to which areas of the RMA can best be considered as cross-suited to the demands of high-intensity warfare and conflict short of war. It finds that key RMA technologies and doctrines have a relatively high degree of relevance to peace support operations and that, generally speaking, if a nation prepares well for war it will also be well prepared for peace.

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Precision-Guided Munitions and Precision Force

Perhaps the best-known technological advance associated with the RMA is the development of precision-guided munitions. First developed in the latter stages of the Vietnam War, they have increased dramatically in terms of accuracy since about the mid-1980s, and even more so since the Gulf War. Precision munitions may be guided by lasers or by satellite, and they range from missiles to individual warheads to defences against enemy smart weapons.

The development of precision technology has led to two, closely related RMA doctrines. *Precision force* refers to the notion that military force can be used with greater speed, range, and accuracy to inflict damage of significantly greater magnitude than was previously the case, and that it can be done without causing substantial civilian casualties.[1] *Disengaged combat* refers to the concept that force can be applied from a distance with a sufficient degree of effectiveness that ground forces do not need to be introduced into combat until such time as the risks of intervention, in terms of friendly military casualties, have been significantly reduced.[2]

How useful were precision-guided munitions and their associated doctrines during recent peace support operations? At first glance they would seem to have proven very effective in the Balkans in the 1990s. After the Bosnian Serbs launched a mortar attack on the Sarajevo marketplace at the end of August 1995, NATO began OPERATION DELIBERATE FORCE designed to compel the Serb forces to withdraw their guns from around Sarajevo, shift the military balance in Bosnia toward the Bosnian Croat Federation, and induce the Bosnian Serbs to settle. During the two-week period from 30 August to 14 September 1995 NATO flew some 3,400 sorties, involving 750 attack missions against 56 ground targets, such as Bosnian Serb air defences, ammunition depots, artillery sites, and military communication facilities.[3] The precision weapons that NATO used included laser-guided bombs, *Maverick* missiles, and sea-launched *Tomahawk* cruise missiles. A British-French rapid reaction force, which had deployed to the region two months earlier, also launched artillery fire against Serb weapons sites.

Initial reports of air power effectiveness were highly favorable. John White, US Deputy Defense Secretary at the time, said that the strikes were more accurate than those conducted during the Gulf War, with 95 percent of all precision munitions hitting their targets.[4] The Pentagon was more sanguine in its assessment and eventually found that 60 percent of the identified targets were destroyed. Significantly, however, they were destroyed with no collateral damage.[5] A limiting factor was bad weather over Bosnia, which forced aircraft carrying laser-guided bombs to abort about half their bombing missions, and contributed to the Alliance's decision to launch satellite-guided cruise missiles.[6]

In the wake of the attacks, Serb forces not only withdrew their guns from around Sarajevo, but also agreed to participate in the peace negotiations which culminated in the November 1995 Dayton Peace Accord and subsequent Bosnian

Peace Agreement. Such events led to the conventional conclusion that air power, and specifically precision force, was responsible for bringing about the peace in Bosnia. However, a closer look quickly revealed that several other factors were also at work. Most notably, a simultaneous ground offensive by Croatia and the Bosnian Federation, begun some weeks before the air campaign, resulted in the Federation and the Serbian Republic holding a roughly equal division of Bosnia, making peace much more likely. In addition, the air strikes came at the end of three years of horrible, exhausting fighting, and crippling economic sanctions against Serbia. Prior to the bombing campaign, Bosnian Serb leaders had already agreed to let Serbian President Slobodan Milosevic represent them at peace negotiations. Thus, as one operator has noted, there were simply too many factors in the equation to discern the exact contribution of air power.[7] Nonetheless, it seems clear that air power played an important role in shifting the balance of power on the ground, and thus in creating one of the key contextual conditions for negotiating a peace agreement.

A more extensive case study is OPERATION ALLIED FORCE, launched by NATO in and around Kosovo on 24 March 1999. Here the Alliance had three objectives in mind: avert a humanitarian catastrophe as a result of Kosovar Albanians being prosecuted by Belgrade; damage Serbia's capacity to wage war against Kosovo; and force Milosevic to agree to a negotiated peace settlement on NATO's terms. During its 78-day air campaign, NATO aircraft conducted approximately 38,000 sorties, including some 23,300 strike missions against 7,600 targets, of which roughly 3,400 were mobile targets.[8] Approximately 35 percent of the munitions launched were precision-guided.[9] Assessment teams later confirmed roughly 60 percent of the target-hit claims made during OPERATION ALLIED FORCE.[10]

NATO used a wide array of precision systems during the campaign. Fighter aircraft from several allied countries, including Canada, conducted tactical air strikes using laser-guided bombs. America's B-2 stealth bombers dropped satellite-guided precision munitions from about 40,000 feet, while their B-52 bombers launched conventional air launched cruise missiles from standoff positions. NATO ships from the United States and Britain added to this array with Tomahawk cruise missiles. Because frequent cloud cover over Yugoslavia made it difficult for pilots to achieve and maintain a laser "lock" on targets, the use of satellite-guided systems, including the cruise missiles, proved particularly critical during the Kosovo operation.

The effectiveness of the air campaign was mixed. Most analysts would agree that the Alliance failed to achieve, at least during the air campaign itself, its humanitarian objective. Indeed, experts have argued that the mass expulsion and victimization of Kosovars was aggravated by NATO's exclusive reliance on air power. That said, in the months following the campaign NATO succeed in rescuing and resettling over a million refugees. The Alliance was also less effec-

tive than it had originally hoped and anticipated in degrading the military capability of the Yugoslav forces. Post-conflict damage assessments confirmed that NATO had destroyed 974 mobile targets, including 93 tanks, 153 armored personnel carriers, 389 artillery pieces, and 339 other military vehicles.[11] The head of the NATO assessment team stated that these figures "amounted to crippling losses for Serbia's regular forces."[12] But they looked much less impressive when compared to the total number of Serbian tanks and armored personnel carriers in Kosovo – 350 and 440 respectively – prior to the start of the campaign.

One reason behind the limited military effectiveness of air strikes was bad weather. Determined to keep civilian collateral damage to an absolute minimum, the Alliance developed rules of engagement that required visual identification of targets, and instructed its pilots to abort those missions that were impeded by cloud cover. As a result, in the first weeks of the campaign almost half of all air combat sorties were unable to attack their assigned targets. In addition, the heavily forested and hilly terrain – so different from what coalition forces faced during the Gulf War – made it difficult for sensor platforms to pinpoint troops and equipment. Following the air campaign it also became clear that sensors had difficulty distinguishing between real and decoy targets. One report stated that NATO had dropped 3,000 precision munitions that resulted in 500 hits on decoys, but destroyed only 50 Yugoslav tanks.[13] Meanwhile, the Serb practice of co-locating troops with the civilian population restricted NATO's freedom of maneuver, concerned as it was with limiting civilian casualties. Finally, the allies' concern for pilot safety was a limiting factor in military terms in that to ensure NATO aircraft remained out of range of Serbian air defences, allied leaders specified that pilots would not drop below 15,000 feet – much higher than the 10,000 feet required for tactical military effectiveness. By contrast, strategic air power was used very effectively to destroy virtually all of Serbia's oil-refining capacity, seriously disrupt its transportation arteries, and cut power to most of Belgrade.

The one area where the Alliance achieved its goal was in the broader political objective of forcing Milosevic to agree to a peace settlement. But even here the timing of the settlement, which was signed on 10 June 1999, indicates that although air power played a significant role, other important factors also came to bear. In late May the Kosovo Liberation Army launched ground offensives that forced Serbian units to concentrate and expose their armor and troops, thus making them fully vulnerable to NATO air power for the first time during the war. It is instructive that 80 percent of all Serbian armor losses occurred in the last two-and-a-half weeks of the bombing campaign. At the same time, NATO began to put out signals that it was considering a ground invasion. The effect may have been to convince Milosevic that even if he withstood the intensified air campaign, there was no way out of the conflict short of accepting NATO's terms for a peace settlement. Finally, during this period the Serbian leader faced growing diplomatic isolation as Russia began to work with NATO to find a peaceful res-

olution of the conflict. The sharp reduction in Russia's practical support for Serbia was no doubt a significant factor in Milosevic's decision to agree to a peace settlement.

In sum, precision force played a critical role in bringing about an end to hostilities in Bosnia and Kosovo, but in each of these cases it was important for air power to be combined with other initiatives. Moreover, both conflicts were at the higher-intensity end of the range of peace missions. One can expect the impact of coercive airpower to become less decisive as one moves back along the spectrum of conflict from Chapter VII peace enforcement to Chapter VI peacekeeping and humanitarian assistance operations.[14] Precision air power will also be less effective in less developed countries, such as in Africa where most civil wars occur, because armored forces susceptible to air attack are few and far between, and conflicts commonly involve roving militias that are difficult to influence through attacks on strategic targets.[15] In such situations it may be more important for an intervening force to be on the ground to negotiate with local commanders, civilian authorities, refugees, or warlords.

Even where a high-intensity response is the solution, the international community will face political and technological limitations to the use of precision force in a peace support situation. Political leaders will be concerned about limiting civilian and collateral damage. And sensors will continue to have a hard time seeing or tracking weapons and forces hidden within buildings and forests. These limiting factors came together in Bosnia where surveillance shortfalls and concerns about collateral damage prevented NATO aircraft from effectively countering Serb artillery, mortars and snipers firing on Sarajevo. It is true that efforts are being made to address these limitations. For example, the United States is experimenting with foliage-penetrating sensor technology, and Britain has identified the need for precision munitions in peace operations that go beyond "highly accurate" to "guaranteeing absolute precision," and therefore eliminating collateral damage.[16] But sensors ultimately face physical principles that simply cannot be overcome, such as being able to "see" inside metal containers. Since precision munitions can only be as accurate as the target information they are acting upon, it is important not to over-estimate the present and future value of precision force in responding to intrastate conflict. Rather, depending on the situation, such force is best seen as a useful tool of first choice for decision makers, which may need to be followed up with other initiatives.

Battlespace Awareness and Control

A second key area of technological advance associated with the RMA is in intelligence gathering, surveillance and reconnaissance (ISR) means, and in command, control, communications, computers and intelligence processing (C4I) capabilities. Advanced ISR is dramatically improving "battlespace awareness" – the age-old battlefield challenge of seeing over the next hill. Today sen-

sors in satellites and manned and unmanned aircraft offer commanders the possibility for real-time knowledge of the location of all enemy and friendly forces on the battlefield within an area of about 200 square kilometers. At the same time, advanced C4I promises significant improvements in "battlespace control" to the point that future commanders may be able to control events on the battlefield from one moment to the next. Working together, advanced ISR and C4I have the potential to significantly reduce what Clausewitz termed the "fog of war."

Many of the advanced ISR technologies associated with the RMA and pursued for high-intensity war are very relevant to peace support operations. Just as reliable intelligence is central to warfighting, "precise knowledge of how many refugees are moving where, how and under what conditions is critical for effective action."[17] During relief operations in Zaire in the mid-1990s, for example, aid-providers were especially in need of data on the number, location, and movement of displaced people.[18] Similarly, to do their jobs properly in Somalia, UN military commanders needed to be able to detect the movement of opposing forces and determine the locations of hidden arms stockpiles.[19]

At the higher end of the conflict spectrum, knowledge of the location of those forces a coalition is trying to target is essential. The "primary challenge in irregular operations is in *identifying* the enemy, not defeating it once it is found."[20] This places a premium on surveillance and intelligence gathering. The relatively high concern to limit allied and civilian casualties in a peace support mission further raises the importance of advanced sensing technologies. Such systems, for example, were "pressed to their limits" in the Kosovo operation by demands to gather more precise data to protect allied aircraft and ensure that damage and inflicted injury was limited to target areas.[21]

Even for the more traditional, interpositional form of peacekeeping one can envision an important role for the RMA's advanced surveillance technologies. A US Defense Science Board study found that emerging technologies would make possible new standoff approaches to missions that require the separation of combatants.[22] It is conceivable, for example, that future commanders will be able to separate forces with a "no man's land" populated by remote sensing devices and robotics, and enforced with long-range precision strike weapons. This would reduce peacekeeper casualties and improve the chances that a peacekeeping force will remain in theatre long enough for a political resolution of the conflict.[23]

Those advanced command and control capabilities pursued for war are also highly relevant to peace support operations. Both types of operation require real-time, integrated communications that link together all military formations. In humanitarian assistance missions enhanced information management technologies are critical to ensuring a coordinated relief effort.[24] In a traditional peacekeeping operation advanced C4I capabilities, combined with sensing technolo-

gies, could allow an intervening force to report to both parties on the deployment of forces on both sides of a ceasefire line in real-time, thereby diffusing tensions and assuring both parties of truce compliance.[25] In addition, analysts have argued that improved command, control, and communications capabilities are increasingly important for rapidly deploying ground forces that are expected to take on less traditional military tasks.[26] Finally, because both warfighting and peace support operations are increasingly characterized by many nations working together, measures designed to improve multilateral command and control will enhance effectiveness across the spectrum of operations.

Many of these ideas have been reflected in the practical experience of the Balkans over the past several years. In the lead up to the Bosnian Peace Agreement in 1995, negotiators used satellite reconnaissance data to provide detail which was unavailable on standard maps and that was crucial for finding a consensus on how and where to divide the land between the two entities.[27] Information technology also played a prominent, even decisive role in convincing the parties that, if signed, the accords would be administered fairly and without prejudice.[28] Since that time, advanced surveillance systems have been used to monitor implementation of the Dayton Accords. In the early stages, Joint Surveillance Target Attack Radar System (JSTARS) ground surveillance aircraft supervised the exchange of territory between Serbs and Muslims. JSTARS, as well as unmanned aerial vehicles and US Navy reconnaissance assets, were subsequently committed to long-term peace surveillance operations over Bosnia, monitoring troop movements, illegal arms shipments, arms storage areas, traffic, important government buildings, key bridges, and road intersections. Satellite technology was also instrumental in detecting and publicizing the existence of mass gravesites.

For command and control, the US Air Force deployed a joint situational awareness system to integrate information based on returns from JSTARS, unmanned aerial vehicles, and Airborne Warning and Control System (AWACS) aircraft. Providing real-time pictures of the battlefield, the system allows commanders to rapidly re-task surveillance platforms to focus on any new hot spots.[29]

A number of advanced surveillance technologies were also at work during the NATO operation in and around Kosovo. JSTARS aircraft located targets and monitored troop concentrations in all weather conditions. AWACS aircraft provided airspace surveillance and directed air-to-air fighters in their operations to provide protection to ground-strike fighters and bombers. Tactical unmanned aerial vehicles operated below cloud-level to provide crucial battlefield reconnaissance on such things as the location of Serbian troops hidden in bunkers or woods. They then sent these images directly back to combat aircraft loitering overhead.[30] Higher altitude unmanned aerial vehicles, which are equipped with synthetic aperture radar and can find targets through cloud cover, augmented the

JSTARS. Finally, more than 50 American and European satellites made up of between 15 and 20 different space system types were directly involved in NATO intelligence gathering and strike operations.

Despite this array of advanced sensor technology, NATO was not entirely successful in tracking events on the battlefield. When Serbian troops closed the border crossing points from Kosovo into Macedonia and Albania in early April 1999 NATO reconnaissance planes were unable to locate the tens of thousands of refugees that had been turned back.[31] Sensors also had difficulty locating Serb troops and equipment. One month into the operation, for example, NATO's commanders still seemed unsure exactly where in Kosovo the Serbs' 40,000 troops and 400 or so armored vehicles actually were.[32] Strikes on fake targets also indicate that the Serbs let NATO daytime reconnaissance flights see real targets and then replaced them at night, or that those analyzing sensor information interpreted it incorrectly.

NATO also faced challenges in the area of command and control. Because of the reaction time required to pass data from AWACS aircraft, to the command and control center in Italy, and then on to strike assets, the Alliance was unable to process information quickly enough to enable aircraft to strike mobile targets.[33] At the same time, NATO experienced interoperability problems in that allies using older C4I systems could not receive information from America's more technologically advanced systems, such as the secure communications systems with which US aircraft are equipped. As a result, US pilots had to rely on voice communications to ensure situational awareness among all allied aircraft. NATO after-action reports stress that these conversations were almost certainly monitored and acted upon by the Yugoslav forces.

Notwithstanding these difficulties, advanced ISR and C4I technologies associated with the RMA gained stature during the Kosovo operation as a result of their performance. America's JSTARS proved so valuable for their ability to track targets through cloud cover that US Air Force officials predict Congress will increase the number of aircraft buys.[34] The older AWACS aircraft demonstrated their worth as a platform capable of coordinating and tracking offensive and defensive air missions, searching for enemy aircraft, assuring safe separation of inbound and exiting aircraft, and directing refueling efforts – all with an extremely high (98 percent during the Kosovo operation) accuracy rate.[35] And at a time when keeping allied casualties to a minimum was uppermost in leaders' minds, unmanned aerial vehicles provided critical battlefield information that would otherwise have had to have been gathered by low flying (and therefore vulnerable to enemy fire) aircraft.

These facts lend credence to the view that advanced surveillance and command and control technologies associated with the RMA can play a key role in the success of peace support operations. Moreover, continued advances in ISR and C4I capabilities are likely to benefit warfighting and peace support missions

almost equally.[36] More sensitive heat and motion detectors, the ability to look more reliably through clouds and jungle, and the ability to define the battle down to small groups of soldiers, are all high-technology surveillance capabilities that are being pursued for more effective warfighting but are very relevant to peace missions. Similarly, trends in airpower technology indicate that certain command and control shortfalls, such as real-time communications allowing for strikes against mobile targets, are likely to be eventually overcome.[37]

Force Projection and Stealth

A key element of the RMA is increasing force projection capabilities. In part this comes from making ground forces lighter and more rapidly mobile, but it also involves technological advances that enable air force platforms to travel further, longer and to have more room for maneuver once they are in the battle area. The critical technological advance in this latter area is in low observable technologies or stealth.

The Kosovo operation reaffirmed the lesson of the Gulf War that the American F-117A stealth fighter is a highly effective platform for carrying out those missions where non-stealthy aircraft would be placed at undue risk of being hit by enemy anti-aircraft fire. This is the case despite the fact that a stealth fighter was shot down early in the operation. The real "surprise" of the Kosovo air campaign, however, was the proven accuracy and reliability of the B-2 stealth bomber. The US Air Force had long boasted that the B-2 gave it "global reach, global power," but this was the first time it had demonstrated such capability in a sustained operation.[38] Flying 31-hour round trips from Whitman Air Force Base, Missouri, the B-2s carried out 33 missions, hitting with 90 percent accuracy targets such as Serbia's integrated air defence system, command and control sites, runways, airfields, communications facilities, factories, bridges, and other elements of infrastructure.[39] In the aftermath of the war General Wesley Clark, Supreme Allied Commander Europe at the time, identified continued reliance on stealth aircraft as a key lesson of the Kosovo operation.

Others go further and argue that force projection should in future increasingly focus on stealthy, unmanned strategic platforms. NATO's experience in Kosovo demonstrated both that it is difficult to fight an air war from above the clouds, and that allied leaders may be hesitant to send manned aircraft below the clouds. Logically speaking, then, these trends are likely to drive air forces toward unmanned combat aerial vehicles. Along these lines, a recent National Defense University strategic assessment argues that the F-22 and Joint Strike Fighter may be the last low-flying tactical combat aircraft purchased by the United States.[40]

But while stealthy platforms may be useful and even central to the effective application of force in a higher-intensity peace support mission, it is difficult to discern a role for them in missions at the lower end of the conflict spectrum. Certainly interpositional peacekeeping missions with ceasefire lines that are

monitored by remote sensors and robotics and enforced with standoff munitions could benefit from the presence of unmanned combat aerial vehicles that can hover on station for many days at a time. Indeed, having a sensor and strike capability integrated into the same unmanned, stealthy platform could reduce tensions by increasing the credibility in the eyes of the parties that a violation of the zone of separation would be met with retribution.

Beyond this, however, there is much to be said for the human contacts that are at the root of effective peacekeeping and humanitarian assistance missions. "Close contact is the *sine qua non* of armies, and it gives them unequalled ability to come to grips with local conditions, distinguish between allies and enemies, and execute schemes to shape social and political developments."[41] Regardless of the technology available, the effectiveness of a monitoring and patrolling mission may be highly dependent on the establishment and maintenance of human intelligence networks. And when it comes to humanitarian missions, units conducting ethnic cleansing with small and medium weapons – which are easy to hide inside buildings and vehicles, and therefore remain essentially undetectable by sensors – could still operate effectively unless challenged by a ground force of comparable strength.[42] This being the case, it is useful to examine the relevance of RMA-related land force developments to peace support operations.

Smaller, More Rapidly Mobile and Flexible Ground Forces

One of the major changes associated with the RMA is a move toward more rapidly mobile and flexible ground forces that are still highly lethal and can operate in a "non-linear" environment. This change resonates well with the requirements of future peace support operations. Indeed, the smaller, more highly skilled, professional army units that would be called upon to fight any future high-intensity war are likely to be well suited to the complexity of tomorrow's peace missions. The associated organizational trend toward modularity and task tailored forces lends itself well to both peace operations and major theater war. However, smaller-scale contingencies place especially heavy demands on combat support (such as construction engineering) and combat service support (like logistics and medical) units. A focus entirely on warfighting would not likely address these requirements; modest force structure changes would be able to accommodate them.[43]

Equipment trends associated with the RMA's ground force doctrine are relevant to peace support operations. Smaller army platforms that still afford troops significant protection and – armed with precision munitions – remain highly lethal, resonate well with the nature of today's peace missions where peacekeepers are often greeted with narrow or non-existent roads and infrastructure, and a volatile and dangerous operating environment. America's Future Combat System of vehicles and Britain's Future Rapid Effect System are particularly relevant here. The tanks they are to replace, the *Abrams and Challenger 2* respectively,

have proven too unwieldy in places like Kosovo.[44] But a platform with the tank's capability is still needed: "In the end, armor provides the same protection against a rocket-propelled grenade, whether it is fired by regular forces in war or by irregular forces against peacekeepers."[45] The capture of UN peacekeepers by rebel forces in Sierra Leone demonstrated that military units, though deployed for peace operations, must be prepared for hostilities up to and including combat.[46] So, too, did the US experience in Somalia in 1993, and that of the United Nations in Bosnia in 1992 to 1995.

Whether a force is responding to a high-intensity war scenario or a peace support situation, political leaders will want it to be rapidly deployable to the battle area. Indeed, one of the key lessons of the Balkans is that those general-purpose forces most suited to peacekeeping must be rapidly deployable. During the Kosovo operation it took several weeks longer than expected to deploy Task Force Hawk to Albania because of the weight of the force. Experts have argued that technologies that can make intervention forces lighter will permit them to be deployed quickly to stop genocides or other low-level yet severe forms of violence.[47] Strategic sea and airlift assets, which are central to the effective prosecution of a high-intensity war, are also key to rapid deployability in a peace support context. In the aftermath of its 1999 operation in East Timor, Australia identified not only the need for rapidly deployable ground forces but also the imperative of strategic sea and air lift assets to respond to such situations.[48]

The RMA also calls for the increased use of transport and combat helicopters for mobility on the battlefield. Here, too, there is applicability to peace support operations, particularly with respect to transport helicopters since poor road conditions often make helicopters the only viable means of moving within the theatre. Following massive flooding in Mozambique in early 2000, the only means for the international community to transport supplies into the interior of the country was by transport helicopter.[49]

Based on the Kosovo experience, the utility of combat helicopters in a peace mission is less clear-cut. Soon after the air campaign began, General Clark requested the deployment of *Apache* combat helicopters because they were better suited than higher flying strike aircraft to degrading the Yugoslav ground forces. But the US political leadership hesitated to do so for fear that the low flying, slow moving helicopters would be vulnerable to automatic-weapon ground fire or short-range shoulder-fired missiles. In a campaign where the United States strove toward a "zero casualty" goal, such considerations played a key role in decision-making. Although President Clinton eventually ordered two dozen *Apaches* and their associated support personnel and equipment to Albania, in the end they were never used in combat.

The ultimate decision not to use combat helicopters in Kosovo, coupled with NATO's more general reluctance to commit ground forces to the operation, raises questions as to the role of the army in future peace support operations. As

noted above, ground forces are indispensable for certain kinds of peace mission, like traditional peacekeeping and humanitarian missions. They are also central to peace implementation efforts after a settlement has been reached. In contrast to the Kosovo experience, for example, Army tactical aviation was used extensively in Bosnia after the peace accord was signed to monitor whether the sides had removed their warfighting equipment from the zone of separation, and to threaten retribution if compliance was not immediately forthcoming.[50]

For the higher-intensity form of peace support mission, that is to say peace enforcement, the role of the army is less certain. The crux of the problem lies in the nexus of interests, risks, and the degree to which leaders are willing to sustain military casualties. Broadly speaking, high-intensity war responds to a threat to vital interests while peace support missions more often than not address core values – things that offend our conscience and fuel our outrage but do not, in the final analysis, threaten our livelihood or way of life. This low threat to national interests translates into a low tolerance for casualties on the part of publics and political leaders. But the fact that a mission may be responding to a threat to values does not reduce the risk to forces. Indeed, "peace operations are distinguished from open conflict not by the types of tactical operations undertaken but by their intent."[51] While the objective of the use of force in war is the reversal of aggression, its goal in a peace support operation is to halt hostilities as soon as possible as a precursor to bringing about peace. It follows that a peace enforcement mission can contain the same degree of risk to forces as does a warfighting mission, but in a situation that does not threaten vital interests. Since ground forces are, generally speaking, at greater risk of sustaining casualties than the other services, political leaders are likely to be hesitant to employ them in a peace enforcement operation.

Jointness and Littoral Warfare

A central doctrinal element of the RMA is a move toward increased jointness among the military services of individual countries, and combinedness among the armed forces of different countries. The RMA foresees an increasingly integrated battlefield with armies, navies, and air forces working ever more closely together. In such a setting precision air power might prepare the battlefield for ground forces, while airlift assets would get them there. Manned and unmanned surveillance aircraft and satellites could operate throughout the campaign, supporting all three services. Naval forces might provide off shore logistical support, sea lift, and precision strike capabilities against ground targets. It follows that increased jointness involves a move toward littoral warfare on the part of the Navy. The conceptual move toward naval power projection from the sea onto land necessarily requires naval forces to work in concert with ground forces, and possibly air forces as well.

Both jointness and littoral warfare are concepts that have direct relevance to peace support operations. Early on in the RMA debate US analysts made the

case that joint, precision strike forces that coordinated the fire of naval, air, and ground units would be useful in peace enforcement efforts. The case was also made that, both for combined arms operations and peace support missions, the US Navy would have to become more capable of operating close to shore.[52]

Recent peace enforcement operations in the Balkans and East Timor provided some confirmation of these trends and, by extension, of the relevance of these concepts to peace missions. During the Kosovo air campaign, a significant portion of the precision strikes were carried out by Tomahawk cruise missiles launched from US and British ships in the Adriatic littorals. Indeed, cloudy weather rendered the satellite-guided Tomahawk a critical asset in the Alliance's arsenal. This was similarly the case during the much shorter Bosnian mission four years earlier. In East Timor, the Royal Australian Navy's helicopter support of land forces deployed ashore also drew light on the valuable contribution that joint, littoral operations can make to the effective conduct of a peace enforcement mission.[53]

Beyond this, jointness was also exhibited in an air-land context in Kosovo. In the early stages of the mission military planners broadened the operational plan for the JSTARS from supporting only the air campaign to assisting Army ground and helicopter units. Had the Apaches been deployed to Kosovo, the two platforms would have worked closely together, with the surveillance aircraft orbiting prior to the attack helicopters launching in order to provide them with an updated view of Yugoslav forces. In addition, the Kosovo Liberation Army ground offensive in late May 1999, which increased air power effectiveness by forcing Serb units out into the open, demonstrated the importance of joint air-ground coordination.

CONCLUSION

Thus an analysis of recent international missions reveals a relatively high degree of relevance of key RMA technologies and doctrines to peace support operations. Precision force and precision-guided munitions can be useful in a peace enforcement mission, and may also have some application to an inter-positional peacekeeping mission. But the international community will often face political and technological constraints in their use. For this reason, standoff precision force is best seen as an important tool of first recourse in peace enforcement, and one that increases decision makers' options. Advanced surveillance and command and control technologies are very relevant to the entire range of peace support operations, whether it be humanitarian assistance, peacekeeping, peace enforcement, or peace implementation. Yet, although trends in technology indicate that today's command and control shortfalls will eventually be overcome, there will always be certain sensor limitations when it comes to intelligence, surveillance, and reconnaissance. Stealthy strategic platforms proved highly useful, even crucial, during the Kosovo peace enforcement operation.

However, they would have little or no application to other types of peace mission. The role of the army in future peace enforcement operations is unclear because of the high risk/low interest nexus inherent in these missions. That said ground forces remain central to the other forms of peace operation. Moreover, RMA measures to make armies smaller, lighter, more rapidly mobile, and deployable, and yet still highly lethal are directly in line with the ground force requirements of tomorrow's peace support missions. Finally, the RMA doctrines of jointness and littoral warfare often have direct application to peace operations.

In short, there are certain aspects of the RMA, such as stealthy bombers and precision strike, that have only limited relevance to peace support operations, or that will only be useful at the high-end of the spectrum of these missions. There are also elements central to peace support operations, such as combat service support units, that will be in insufficient supply if the focus is placed solely on force attributes for warfighting. But, generally speaking, the contrast that is often drawn between the high-tech, high-intensity requirements for war, and the low-tech, low-intensity means for peacekeeping is an artificial one. Better technology can help compensate for the political dependence on near casualty-free operations that is especially present when core interests are not at stake. The relatively high degree of relevance of RMA technologies and doctrines to peace support operations indicates that if a nation prepares well for war, it will also be well prepared for peace.

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