ABSTRACT

The aim of this article is to discuss and assess the tension between ideas that underpin the revolution in military affairs (RMA) and the changing nature of post-Cold [War](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) conflict with specific reference to the nature of low-intensity conflict (LIC). The United States' (US) view of an RMA is used as a point of departure as it forms part of the mainstream thinking on the debate. It is argued that the conventional and inter-state war paradigm in the current RMA-debate seems largely irrelevant to the nature of LIC, which is the most probable type of conflict strong powers will face in future. The terror attacks on the US on 11 September 2001 reinforced this critique of the RMA vision and indicated the rise of asymmetric strategies. Hence this article discusses the tension between RMA-thinking and the nature of LIC, also considering the impact of September 11. It addresses the preparation for certain scenarios, existing national values, operational thinking and the use of military instruments.

1. INTRODUCTION

The success of the United States (US) military during the 1991 Gulf War and the performance of American high-technology [weapons](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r), as well as Respectively academic assistant and lecturer in the Faculty of Military [Science](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r), University of Stellenbosch. This article was written before the 2003 war in Iraq. the pace of innovation in computers and sensors have convinced many military analysts that the US is on the verge of a revolution in military affairs (RMA). (1) The US Department of Defence has, however, not embraced all the drastic changes proposed by some RMA-advocates to bring about revolutionary change. Therefore, change within the US military will most probably remain evolutionary in kind. (2) The optimism surrounding the RMA-thesis in the US is focused on advances in precision munitions, data processing and other modern technologies judged to transform the nature of future war. (3) Although many countries partake in the debate on RMA-issues, the US military is the leader in this field and continues to define the direction of mainstream thinking. (4) The RMA-thesis has however been questioned in terms of feasibility and its relevance in dealing with future security challenges (even in Europe). (5) The conventional military focus of the RMA-debate in the face of the remaining prominence of low-intensity conflict (LIC) after the Cold War became an object of criticism. The current RMA-debate acknowledges LIC, but it does not elaborate upon it. (6) This negation is the result of current strategic thinking and preparation for future inter-state [wars](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) whilst national values and other societal variables play a role as well.

The first section of the article discusses the changing nature of conflict in the post-Cold War era and highlights the prominence of LIC, especially within the Third World. The following section deals with the lack of consensus among scholars and states on the meaning of the concept RMA, and what qualifies as an RMA. In conclusion, the influence of the terror attacks on 11 September 2001 is assessed with specific reference to the tension between the ideas of an RMA and the realities of LIC.

2. THE CHANGING NATURE OF POST-COLD WAR CONFLICT

According to Hippler, military conflicts can be ordered in a three tiered conflict spectrum. (7) The lowest level of conflict is the shortest in duration and has the lowest levels of force and input. The highest level of conflict is a strategic nuclear war. Total wars, such as the Second World War, are placed in the category of high-intensity conflict, while the Korean and Vietnam Wars are referred to as medium-intensity conflicts. The conflicts below the high and mid-level conventional wars are referred to as low-intensity conflicts. In this context, LIC is defined as "politico-military confrontation between contending states or groups below conventional war and above the routine peaceful competition among nations. It frequently involves protracted struggles of competing principles and ideologies (revolutionary wars)". (8)

During the Cold War (1946-1990), civil/intrastate wars were more predominant than interstate wars, considering that there were approximately 150 civil wars and only 50 interstate wars (9). Despite the fact that LIC was the most common form of warfare during the Cold War, conventional and nuclear military competition overshadowed it in terms of priorities that opposing powers accorded their security interests. During the Cold War, LIC and internal conflict usually Occurred as a result of pressures to remove colonial rule or the failure of post-independence governments to satisfy the needs and expectations of their populations. LIC in Third World countries often also became part of the Cold War rivalry as superpowers competed in proxy wars in these states. These conflicts were mainly about ideological allegiance as the US supported anti-Communist governments whilst China and the former Soviet Union supported governments that favoured Marxism. Snow argues that since the ending of the Cold War, and viewed from a Western perspective, the security environment is less insecure. This is primarily a result of the decline of threats emanating from general nuclear war. (10) Yet, from a Third World perspective conflicts are more likely to occur after the Cold War since security trends have changed considerably. In addition, more freedom exists to indulge in military adventures without the risk of escalation to the nuclear threshold or of intervention by other parties.

According to Snow, one of the most significant differences between the Cold War and post-Cold War international systems is that conventional warfare is a rare occurrence in the latter era. (11) The Gulf War of 1991 was one of the last major conventional wars. According to Thomas, because it is judged to become more prominent than conventional war, LIC is the most likely form of conflict that strong military powers will have to face. (12)

After the Cold War (1990-1999), interstate wars remained less prominent than civil/intrastate wars. (13) Also, since the Cold War, ethnic conflicts have increased. Since these wars often include genocide, they create a moral problem for the international community when the use of armed coercion for intervening is considered. (14) According to Schroer most conflicts after the Cold War will develop in the Third World with its socio-economic and political problems and proneness for instability,is) Of the 38 internal conflicts Snow identified in 1993, 13 were located in Africa while the rest occurred mainly in the Middle East and in the former Soviet republics. (16) Post-Cold War conflict is also characterised by the emergence of very unstable or failed states such as Somalia. (17) These failed states have become a locus of violent conflict in the international system.

Contemporary internal wars differ from those during the Cold War in the sense that they are less principled in political terms and even less focused on the attainment of ideological goals. (18) They are more vicious and uncontrolled, with little ideological-political restraint (such as a Maoist ideology) to unify people in a post-conflict future. Given these extremities, Snow refers to these conflicts as uncivil wars. These uncivil wars represent a particular type of armed conflict that contemporary military decision-makers have to contend with, considering that more conventional type wars are still pursued by powers in possession of such military means.

The Gulf War of 1991 has shown that information-based [armies](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) can quickly and decisively defeat industrial armies even if industrial armies have time to prepare their defences. (19) Weaker opponents of strong military powers may therefore avoid a direct conventional military confrontation and seek military options that are less conventional. (20) This represents a dilemma to defence decision-makers. RMA-proponents for one, tend to disregard these asymmetric alternatives in their efforts to promote an RMA-solution for dealing with future military conflicts. Hence the problem of an acceptable definition of an RMA is dealt with before considering the debate in greater depth.

3. DEFINING A REVOLUTION IN MILITARY AFFAIRS

A revolution is generally associated with an important change in an area of human activity. It is also the opposite of evolution, suggesting that a revolution is not a process of gradual development, but rather a drastic change in the nature of a system whether political, social or military. In the RMA-context, "revolution" refers to more than a mere process of constant change in military affairs: it means drastic changes in the organisation and utilisation of [armed forces](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r).

Before defining an RMA, the broader concept of military [revolutions](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) is described. The concept of a military revolution was initially invoked in Soviet publications in the 1970s and 1980s and took on a very clear technical understanding. (21) According to Murray, military revolutions (MR) produce such fundamental changes that they "recast the nature of society and the state as well as of military organization". (22) He refers to the French Revolution, among others, as an example of a MR. Gray points out that MRs produce broad and deep changes in the nature of war that take place as a result of distinctive RMAs, some of which are driven by [technological innovations](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r). These are referred to as military technical revolutions (MTR). Soviet theorists, for example, outlined the impact of nuclear weapons as a "revolution in military-technical affairs". (23) The concept MTR was first used by Soviet military thinkers who stressed the emergence of advanced non-nuclear military technologies, especially during the 1980s. (24) The concept was later adopted by US study groups who used it in subsequent defence reports in response to Soviet achievements. The MTR is the least contentious of the concepts and is currently closely associated with information technology, sensors, computing and telecommunications. (25)

3.1 Background to the RMA-debate

In order to understand the current RMA-debate and existing military capabilities, the background of post-Second World War developments has to be understood. In the late 1950s and 1960s Soviet military analysts predicted a nuclear "revolution in military affairs". (26) In the late 1960s the Russians started with widespread innovations in operational art and force structure, which included the development of large armoured formations and significant changes in their operational doctrine of Deep Operations in the European theatre The Russians rapidly developed and introduced nuclear weapons, missiles and radio electronic means on a massive scale They also improved other types of armament and [combat](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) equipment. This resulted in fundamental changes in the nature and methods of military actions and represented a clear "revolution in military affairs". These significant Soviet developments led to increasing US and North Atlantic Treaty Organisation (NATO) interest in the RMA and its innovations, in order to improve their own conventional military capabilities. (27)

3.2 Debate on the meaning of an RMA

According to Mets, the RMA is a "mental construct, an abstraction. It is a simplification of reality, largely intended to help explain the way that change comes about and to provide ... a common vocabulary to facilitate communication among scholars and decision-makers". (28) Gray further posits that strategic theorists and [historians](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) will not achieve consensus, on which phenomena qualify a true RMA. (29) Similarly, O'Hanlon argues that the so-called RMA is "an intriguing but complex concept, subject to multiple definitions". (30) One of the main reasons for these different opinions is the focus of the analysts. Before the 1990s, theorists and military historians mainly discussed the RMA on the basis of the past but in the mid-1990s, to the extent that force structure planning and programming became important, a future perspective entered the debate. (31) The RMA-debate therefore now tends to focus on discussions of how war will change in future rather than trying to define it. (32) There is also uncertainty on whether it is a stage in history or a vision that should be seized. (33) Even among those who advocate the RMA-concept, there are different opinions on its meaning. (34) There is also uncertainty about what is now different about the pace or significance of military progress in comparison with past decades.

According to Hundley, an RMA is a paradigmatic "shift in the nature and conduct of [military operations](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) ... which creates one or more new core competencies in some new dimension of warfare". It also "renders obsolete or irrelevant one or more core competencies of a dominant player". (35) Thus RMAs provide a significant and immediate military advantage to those who first apply it. For example, the development of Blitzkrieg rendered the large defensive forces of France irrelevant. If Hundley's definition of an RMA is accepted, such a revolution has not yet occurred. (36) Hypothetically, in his terms, an RMA will for instance occur if the US Air Force could stop the advance of a sizeable enemy armoured force in a regional conflict by means of air delivered munitions and without intervention by the US Army. It would be a true RMA since it renders irrelevant the core competency of tank/anti-tank warfare of a dominant player (the US Army). Consequently, according to Grant, the adoption of the weapon systems, organisational structures and operational concepts required to bring about an RMA for the US is likely to remain a gradual, evolutionary process. (37) The evolution of a new military-technical paradigm in the US armed forces will occur not only as a result of technical innovation, but more specifically also through the decisions of policy-makers at the doctrinal and organisational levels. (38)

Latham outlines an RMA as a radical transformation in prevailing military instruments, ideas and institutions of warfare beyond existing paradigms. (39) Freedman, as a proponent of a revolution in strategic affairs, argues that such a focus on the military downplays the political and social dimensions of change that always affect change within the military. (40) In justification, he accentuates the role of the revolution in business affairs as a non-military influence on military affairs, whilst further arguing that RMA-developments will be dependent on the technologies and products of the business sector and can therefore not be viewed in isolation. He furthermore describes the drastic changes in the international system since the Cold War as a revolution in political affairs and by doing so introduces the non-military factors that influence RMA-developments.

Krepinevich notes that at least one major technological development in weaponry has had a significant influence in every one of the ten major RMAs since 1300, as identified by him. (41) Although past RMAs were brought about by changes from within the armed forces, technology also played an important role RMAs were usually brought about through mutually supportive changes in technology, concepts and organisations. Yet, hypothetically, a radical increase in the effectiveness of forces can be induced without technological advancement through, for example, a change in the organisation and composition of the military. Gray supports this view and he describes an RMA as "a radical change in the character of warfare ... that may or may not be sparked by technological developments. (42) In the same sense O'Hanlon argues that guerrilla warfare, as applied by Mao for instance, created an RMA through non-technological means. (43) Bowdish supports the view that by definition an RMA can in some cases revolutionise only one military segment instead of the organisation as a whole. (44) This view considers MTRs as merely one of the factors that can promote a RMA.

Change in technology can however prove revolutionary even if it is not fully integrated through new doctrines and organisations. Nuclear

weapons had this impact even before a coherent doctrine for directing its use materialised. (45) All RMAs are therefore not always technology driven and may also occur when militaries deliberately conduct operations differently or change the organisation of forces to achieve strategic advantage. Those RMAs that are largely technology-driven are usually brought about by a combination of different technologies and have three components, namely technology, doctrine and organisation. (46) RMAs which are driven by technology do not always involve weapons technology. They may, for instance, entail developments in transportation, such as the use of railroads during the late 19th century, that provided strategic mobility for armies.

3.3 Alternative views of the RMA

Various states have different views about the possibility of a RMA; about the technologies that should be improved and exploited; and about the force structure that is deemed essential. The German view of the RMA (similar to US views) is that wars further into the 21st century will be dramatically different from those of today. Accordingly, it is also predicted that units will become smaller, faster and more manoeuvrable and that most operations will become joint operations. However, Europeans in general do not hold an integrated conception of the RMA in the way that the US does. (47)

There are also fewer advocates in Europe that favour re-orienting defence policy specifically for the purpose of exploiting the RMA. Although European countries such as the United Kingdom (UK) and France are acquiring significant RMA-related technologies, inadequacies during the Kosovo campaign left the impression that European powers still had limited RMA-capabilities and had not committed them to work towards an RMA. Towards this end, NATO's Defence Capabilities Initiative (DCI) was established in 1998 to identify shortfalls in key areas of military capabilities and to provide a new mechanism to address it. (48) Through this initiative the European members of NATO identified five areas of shortfalls: deployability and mobility; sustainability and logistics; effective engagement; survivability of forces and infrastructure; and C21 systems (command and control, and intelligence). From these shortfalls NATO identified immediate and long-term projects to deal with shortcomings.

European states are very reliant upon US systems for attack operations. Should intervention by an European coalition take place, such a coalition would be severely handicapped if the US is not involved. The lack of adequate long-range and precision-strike assets will be particularly problematic. Although European states will never be able to equal the US in terms of RMA-capabilities in the near future, they do need a balanced mix of high technology and low technology systems to fulfil their role within NATO. (49)

According to Grant, European states view RMA-concepts as being too focused on scenarios of high intensity conflict that are unlikely to occur in the current international arena. (50) They are particularly concerned about the limitations of RMA-type capabilities in current conflicts and the asymmetric strategies such as terrorism, guerrilla warfare and urban combat used by sub-state groups. The European concern was reinforced by the failure of NATO air power to prevent Serbia from executing acts of ethnic cleansing in Kosovo. Serb forces merely dispersed among the local population and as a result NATO aircraft could not clearly identify targets. To an extent, this rendered RMA-type technologies and responses inadequate.

China is another country that seriously studied the implications of an RMA. It views an RMA as currently pursued by the US as a manageable process. From this perspective a military revolution is regarded as the stage when a multiple RMA-process has matured over a period of 15 to 30 years and has changed the established order. The success of the US in the 1991 Gulf War stunned the Chinese, especially considering that Iraq also used Soviet and Chinese equipment. (51) In reaction, China's plans for 2030 are to pursue a capability that will enable the "inferior to defeat the superior". Their RMA-ambitions are to adapt some of their military doctrines and concepts to the type of warfare the US conducted during the 1991 Gulf War. (52) The Chinese aims are to understand these concepts and operations, to apply them and to counter similar approaches against themselves. The country furthermore intends to improve its capabilities in precision guided munitions and information dominance. (53) Although the greater part of the People's Liberation Army (PLA) will remain low to medium technology forces, 12 to 18 of its approximate 100 divisions "are striving to become modernised, mobile forces ready to fight what Chinese planners call 'modern local war' under high tech conditions". The Chinese have started to develop the doctrine and tactics for joint operations using long-range precision weapons, night fighting equipment, surveillance systems as well as high mobility and firepower. Whether achieving these objectives will constitute an RMA is uncertain and debatable, as China faces several shortcomings in terms of jointness, logistical systems and force projection. (54)

The Chinese focus is more on US technology than on its operational doctrine. (55) This focus may not achieve an information-based RMA due to the restrictions on the free flow of information in China. If China achieves an RMA of sorts it will most probably result from combining conventional and unconventional warfare and supporting it with local Chinese military organisations such as militia units. (56) Chen Bojiang argues that building a high technology military component is important considering China's strength in protracted struggles. (57) He argues that China must also prepare for short, limited wars and make effective use of the attacking capabilities that high technology forces provide.

To summarise, in the US there is relative consensus that an RMA is a "rapid and radical increase in the effectiveness of military units that alter the nature of warfare and changes the strategic environment". (58) It is acknowledged that the driving forces of the contemporary RMA include the quality and quantity of information made available to military commanders by improvements in computers and other equipment that collect, analyse, store and transmit data. (59) RMA proponents also argue that there is a growing range of targets that are exposed to attack by "smart" weapons. (60) They argue that developments in, and the use of, information technology eroded the traditional protection provided by distance, terrain, size and weather. This erosion resulted in the vulnerability of targets previously deemed invulnerable to attack.

The core technologies associated with the RMA (of which most existed as early as the 1970s) are: precision-guidance; remote guidance and control; munitions improvements; target identification and acquisition; command, control and communications (C3); and electronic warfare. (61) According to Hundley, the current efforts to promote a RMA are usually referred to as a military technical revolution, combining technical advances in surveillance, C3 and intelligence, and precision munitions. (62) It also includes new operational concepts such as precision strike, dominant battlefield awareness, focused logistics and dominant manoeuvre. Such new operational concepts constitute ways to integrate new technologies into existing doctrine and tactics of military institutions or to add a new capability to existing ones.

3.4 The RMA and developing countries

Despite reservations about the ability of developing countries to acquire RMA-capabilities and develop their militaries along RMA-lines, they do in fact have more opportunities to exploit RMA-developments than is often acknowledged. According to Demchak, the low-income levels of developing states will not present insurmountable problems towards information-age modernisation. Developing countries will be able to afford RMA-type technologies such as advanced battlefield systems and covert network surveillance software Such technologies are becoming more affordable as defence industries offer generous deals to market first generation technologies to developing countries. (63) The cost of electronic chips is continuing to fall, which makes advanced systems more available and affordable. Even economic decline only seems to delay efforts of modernisation.

Countries like Botswana, Chile and Thailand have expressed the intention to modernise their militaries despite competing internal demands for social spending. RMA-capabilities are sought not to prepare for specific threats, but because small, professional militaries with information systems are becoming the norm in the [21.sup.st] century. A premium is placed on modernisation as a measure of potential effectiveness for future military challenges. Developing states will not be able to afford the complete array of technologies associated with information warfare, but they will be able to acquire relatively sparse network capabilities and progressively add functions as the funds, infrastructure and expertise become available. This process is to bestow disproportional strategic and operational advantages upon a developing country. (64)

4. THE US PURSUIT OF AN RMA

The vision of the RMA (in broad terms) is the ability to achieve "swift and unequivocal victory in war ... with scant risk to troops". (65) The logic behind the current US doctrine is no longer attrition, but the creation of paralysis through precision and through simultaneous attacks along the length, depth and breadth of the battlespace. (66) Since the objective is to achieve dominant battlespace knowledge, the capacity is required to process information about the whole operational environment in real time as to make precision-[violence](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) possible. (67) Through sensors and datafusion technologies the aim is to obtain a clear picture of the battlefield, including the location and status of own and enemy forces, and to miniraise the constraint of the "fog of war". Dominant battlespace knowledge will also allow more complex and simultaneous operations across more than one theatre. (68) It is assumed that battlespace knowledge will become the dominant factor on the battlefield and that it will displace the central role of shock action and mass firepower. (69) The RMA-vision holds that the battlefield could become virtually emptied of [soldiers](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r). (70) Remaining units will be small and dispersed, primarily assuming a scouting function, and stand-off strikes are expected to become the preferred method of attack.

The US pursues an RMA for several reasons. Firstly, US armed forces experienced a decline in force structure and budget without a corresponding decrease in missions and responsibilities. (71) The US military therefore concluded that preparations along RMA-principles could make it smaller yet more powerful. Secondly, the American public has limited tolerance for casualties in armed conflict and RMA-ideas focus on minimising casualties. US definitions of the RMA indicate that RMA-proponents have a relative faith in the ability of RMAs to provide decisive results. (72) This view of the RMA (within the US in particular) reveals much about the cultural and political assumptions of Western societies and the reasons behind the way in which an RMA is pursued. (73)

These assumptions include an unwillingness to accept conscription; an assertion of Western superiority; and the ideology of "machinism" which suggests that worth is defined in terms of machines. (74) The emphasis on machine warfare downplays the role of infantry. These assumptions are more determining of RMA-thinking than the objective assessment of military options. According to Black, the emphasis on the RMA is also "an expression of the modern secular technological belief-system" of the West. (75) These assumptions are intertwined with theories of modernisation which rest on the adoption of technological systems and constitute a powerful psychological factor to fill the need to "be ahead". Efforts to promote an RMA meet the US need to believe in the possibility of high-intensity conflict and total or decisive victory. In addition, an RMA can also serve to achieve the aims of both isolationists and advocates of collective security. RMA-capabilities will enable a state to conduct precision air attacks during conflict or to fulfil its international responsibilities without jeopardising the interests of isolationists who might fear heavy losses or drawn-out wars.

5. THE TENSION BETWEEN RMA-IDEAS AND LOW-INTENSITY CONFLICT

One of the most important factors shaping the mode of warfare used by states is the general social understanding of the nature of the threat environment in which forces are expected to operate. (76) Another important influence is the institutionalised perceptions of the nature of the enemy, his weapon systems, organisations and tactics. The US emphasises the improvement of its forces for future conventional war, in accordance with RMA-principles. It intends to use the current period of relative absence of conventional war or "interlude" to prepare itself for a conflict against a "serious 'peer competitor' for the future". (77) It is argued that a failure to effectively prepare for LIC will not be as detrimental as failing to prepare for large-scale war. This section addresses the nature and prominence of LIC as opposed to the preference to build RMA-capabilities for conventional war. It deals with the limitations and problems associated with such capabilities in the LIC environment.

Based on trends in warfare over the last five decades, the nature of wars with sub-state actors in LIC has generated a conflict environment that exposed the critical vulnerabilities of the West. In the past, Western armies were strong because of their reliance on technology. However, they were also too capital-intensive, relied too much on a slow logistic system, had slow systems of command, and had the wrong balance between forces and support troops. Their weapons also did not perform well in harsh conditions. It seems as though the current RMA-efforts merely reinforced these past trends and did not address the vulnerabilities that existed. (78)

By definition, RMAs are strategically significant: those that understand and exploit RMA-advantages enjoy strategic benefits, but the strategic advantages may be short-lived if a counter-strategy is found. (79) Just as an RMA means a transformation in the nature of conflict, it may also open new sources of vulnerability and modes of attack. (80) The nature of recent LICs exposes many shortcomings of RMA-ideas. For example, the LIC in Somalia (1993) exposed US vulnerabilities despite its RMA-type military capabilities. Yet, despite the existence of these counter-strategies used in LIC, the US still prefers to focus the RMA-debate on conventional war.

The current RMA-debate acknowledges the phenomenon of LIC, but does not address it properly relative to preferred methods of high technological warfare.81) The current views on the RMA and future wars do not consider future conflicts in regions such as sub-Sahara Africa, where LIC is the predominant form of current and the likely form of future conflict. The same applies to Europe (and its periphery), where conflict potential exists in regions such as the Balkans. LICs, especially internal wars, are more difficult to deal with and to control than those experienced during the Cold War. (82) In addition, the LIC environment may also become more volatile as sub-national groups in possession of advanced weaponry, increasingly challenge state authority. (83)

It is possible to extend RMA-type deterrence to allies and to limit the possibility of any future conventional opponent. The problem, however, lies with the type of adversaries and conflicts that cannot be deterred by RMA-type operations such as non-conventional urban combat in Third World countries. Although RMA-ideas offer a civilised way of warfare in which civilians and non-[combatants](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r) are not targeted, and although the Western way of warfare encourages the discriminate use of weapons and low casualties, especially concerning own forces and civilians, the problem is that future adversaries may not share the same values and may not fight in the same way. (84)

According to Gray, the strategic problem for the US in this context is not that its information-led military capabilities cannot dominate any opponent in any battlespace, but rather that the political, social, ethical and cultural dimensions of strategy will inhibit the desired strategic effect. (85) In addition, the armed forces (government or non-state) in uncivil wars and hostile Third World countries are often more motivated, more willing to accept casualties than Western forces, more willing to run risks of escalation, and even more willing to consider the use of [weapons of mass destruction](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r). (86) According to O'Hanlon, infantry and urban type combat scenarios are the most likely forms of warfare that the US will face in the near future. On the one hand, some may argue that the US will have the choice whether to become involved in such theatres. On the other hand, the media images of human distress and human rights violations can pressure Western states not to remain passive. (87) Even if diplomacy and economic sanctions fail to change the plight of people in crisis, the familiar losses that accompany intervention can be outweighed by less calculable results from non-intervention.

Chin argues that the substitution of technology for manpower can overcome the sensitivity of casualties.88) For example, the use of long-range precision air strikes by Western governments is viewed as a cost-effective solution to security problems. At least it provides a military alternative during humanitarian conflict when a government's electorate demands action. The possession of this capability does, however, not guarantee easy solutions or success in war (as with other technologies in the past) and in particular not in LIC.

According to Freedman, wars conducted distant from civil society can be decisive, while wars close to civil society will depend on the relevant population's ability to withstand the stress of war. (89) The solution in dealing with LIC and internal conflict is to deter and control violence rather than to apply decisive force in order to defeat an adversary. (90) Most non-combatants and infrastructure are located in cities, which prevents Western states from using military force according to RMA-ideals. Cities complicate the manoeuvre of own forces and the targeting of opposing forces. (91) Considering that it is estimated that by the year 2025 the majority of the global population will live in 20 "mega-cities" each with a population of approximately 11 million, military intervention by the West in these urban settings will present many problems considering its preference for conventional war. (92) In future urban settings it will be extremely easy for ill-equipped forces to inflict casualties on even the best-equipped and trained forces. Despite the fact that urbanisation is a common development all over the globe, US forces prefer to fight in open terrain (93) The US Marines have, however, recognised this weakness and has started to focus on urban warfare The US also realised the limitations of its advanced military capabilities in LIC as its mission in Somalia and the NATO air campaign in Kosovo clearly indicated. (94) Urban warfare also produces an environment in which the use of conventional high technology is of limited value. (95)

It is argued that many features of RMA-capabilities are relevant to LIC, especially intelligence, surveillance and the selective use of artillery and air power. (96) The limitations of these capabilities were, however, clearly demonstrated by the failure of American electronic listening and surveillance systems to detect and find the Somali warlord Farah Aideed during Operation Restore Hope. (97) During this operation the US forces, using remote sensors, could only spot, target and destroy two of the 60 mortars that were firing in Mogadishu. (98) The limitations of these sensors are likely to inhibit their performance in the foreseeable future, no matter how advanced processing systems are.

During Operation Desert Storm (1991 Gulf War) the US also experienced several problems with RMA-type equipment. For example, infrared, electro-optical and laser systems (designation systems) were seriously degraded in terms of performance by weather, dust and smoke. High-resolution radar on aircraft experienced difficulties to distinguish trucks from tanks. Even though the US Air Force predicted in 1997 "that by 2025 they will be able to find, fix or track and target, in real time, anything of consequence that moves upon ... the Earth", this may only be the case with regard to easily detectable targets such as ships and tanks, on condition that they can be distinguished from civilian assets and dummies. (99)

6. THE IMPACT OF SEPTEMBER 11

The events of 11 September 2003 and their consequences had a significant impact on the relationship between US ideas of an RMA and the nature of LIC. Although US ideas on an RMA may not change, the September 11 incident challenged the set views of the US (and many of its allies) on conducting war with RMA-type military capabilities.

As early as June 2000, Grant argued that while countries such as the US are prepared for conventional threats with its RMA-vision, non-Western adversaries will increasingly resort to a variety of asymmetric operations. Shortly after September 11, Wolfowitz alluded to adversaries of the US realising that challenging US forces "head-on" is not an option. They therefore have to revert increasingly to the development of asymmetric strategic capabilities, such as terrorism (100) or guerrilla warfare, and their more sophisticated and ingenious use. (101) The September 11 attacks accentuated the emergence of terrorist organisations functioning through a global network, whose members are not clearly distinguishable from civilians in terms of where they perform, how they appear or how they operate.102) These networks have become difficult targets for countries bent on opposing them with conventional military means, whilst also to an extent rendering the latter irrelevant. Thus, according to Metz and Kievit, the emerging technologies associated with RMA-thinking will have less impact on LIC. (103) It is precisely this RMA-LIC gap that is fast becoming a central focus of the proponents opposing the RMA.

In this respect, Da Cunha contends that September 11 indicated the temporal nature of economic security and a robust conventional military. He also argues that "asymmetric warfare as a military-operational concept is on the ascendant, and the September 11 attacks will be a significant boost, with countries and terrorist groups seeking out a range of ways to conduct this kind of warfare". (104) The scale of destruction and he indiscriminate nature of the September 11 attacks have surpassed the existing limits on what is perceived to be permissible acts of terror.

It also exceeds past psychological barriers on the kind of attacks that can be conducted. (105) This shift reflects the new domain of networked and virtual terrorism that operate according to its own rules of war, target selection and what represents success. (106) These developments in asymmetric warfare, especially in terms of terror, therefore present a major challenge to current RMA-thinking and its inclination towards conventional warfare.

The September 11 attacks on New York and Washington arguably also destroyed the sense of "insularity" the US had from the outside world. (107) Naturally this created more insecurity among Americans and measures had to be taken to assure the American public that this insecurity will be addressed. The American public expected a military counter-attack with typical RMA-type capabilities such as precision-guided missiles, because it is judged to create a sense of security and "it makes them feel better". (108) September 11 also brought about a situation which pressurised the realist-inclined Bush administration to use its technologically advanced military element of national power. The US was therefore compelled to enter into a low-intensity counter-conflict in Afghanistan as mere air strikes would have been interpreted as futile retaliation without solving the problem of AI Qaeda in Afghanistan.

The operations in Afghanistan have therefore become part of an extended US-led campaign against terror. (109) Such a long campaign implicitly assumes that quick and decisive results cannot be expected in terms of preventing acts of terror. The US-led operation in Afghanistan is indeed an operation that was in contrast to its preferred mode of decisive warfare, (110) AI Qaeda networks in Afghanistan became the primary military target of the US because most of the September 11 planners were AI Qaeda members and many of its training camps were located in Afghanistan. (111) The US decided to support local Afghan forces during the early phases of the ground campaign against the Taliban instead of deploying a large contingent of US ground forces. The US did, however, later deploy special forces and specialised infantry components such as marines, airborne troops and mountain units.

In the aftermath of these operations, Bush remarked that the combination of "real time intelligence, local allied forces, Special Forces and precision air power" shattered the Taliban regime. (112) For example, at Mazar-I-Sharif the US conducted joint operations with aircraft in conjunction with special forces to perform precision-strike assaults on Taliban positions, but also relied on local low technologies and tactics to subdue the Taliban. Special forces used pack mules to transport their equipment and in conjunction with local fighters, used horses in cavalry style charges to attack Taliban positions after air strikes were called in. Whether this interesting combination of low and RMA-type technological means will become an approach throughout the US military remains uncertain. It does, however, point out that both high and low technological means can be used in combination. This integration raises the further question and possibility of separate preparation of RMA and LIC-type forces without jeopardising compatibility. The information and communication systems should, however, be in place to make co-operation possible.

When considering the "success" of the US-led campaign in Afghanistan, it must be borne in mind that the US faced an opponent that had no ballistic missiles, weapons of mass destruction, or even a conventional army of note. (113) The US armed forces could attack targets in Afghanistan with relative impunity. MacKinley describes the US-led coalition's approach to wage war against terrorism, as a Clausewitzian attempt to deal with a problem that is not military in nature. (114) This suggests that the US counter-strategy became overly focused on the use of conventional military means aimed at decisive [battles](https://go-gale-com.may.idm.oclc.org/ps/i.do?p=AONE&u=nuim&id=GALE%7CA109504766&v=2.1&it=r). This counter-strategy is depicted as being similar to the use of primarily military means by former colonial powers to curb insurgencies, while the causes of the dissatisfaction were in fact political and economic in nature.

Allies are important for success in war and therefore one of President George Bush's first priorities was to build a broad international coalition. (115) He campaigned extensively for international support to combat terror and the coalition eventually included China, Russia, Japan, Australia, New Zealand, Europe, India, Israel, Jordan, Kyrgyzstan, Pakistan, Saudi Arabia, Turkey, the UK and Uzbekistan. This coalition furthermore increased co-operation among states to combat terrorism. Countries such as Russia (116) and China can, however, be expected to take a tougher stance on Muslim fundamentalists in their own countries. Russia has a problem with Islamic separatists in Chechnya and China has a problem with Islamic separatists in the Xinjiang province. Although the Bush administration was not outspoken about Chechnya, it may turn to criticism if less acceptable force levels are used in these conflicts.

7. CONCLUSION

The aim of this article was to discuss and assess the tension between ideas that underpin the RMA and the nature of LIC. The US vision of an RMA was used as a theoretical point of departure as there appears to be more consensus on this topic in the US than in other states. Following this example, important actors, such as China, also pursue American type RMA-capabilities. Contemporary LIC and the September 11 attacks, however, reinforced the tension between RMA-ideas and the nature of LIC and exposed many shortcomings in the US-dominated RMA-thinking.

The emphasis that RMA-thinking places on future conventional inter-state war against a peer competitor is based on the risk of being unprepared for such a scenario, in contrast to the seemingly lesser risk of becoming involved in LIC. Intra-state wars are however predominant in the post-Cold War era and LIC is the most likely type of conflict states will face in the future. After the decisive victory of the US-led and information-based coalition forces in the 1991 Gulf War, weaker military forces will increasingly seek strategies that are less exclusive and conventional.

The emphasis on the RMA vision is an outflow of assumptions and values in Western societies (the US in particular), which include the following: a paradigm that war should be civilised and removed from non-combatants; theories of constant modernisation and the use of advanced weapon systems; an unwillingness to accept conscription; and avoiding casualties to civilians as well as own forces. Contemporary LIC is however characterised by uncivil wars (with little distinction between combatants and civilians) and a reliance on infantry-based operations that are more prone to casualties. Although information-based military capabilities can dominate most contemporary opponents, the aforesaid assumptions and values will increasingly compete with the utility of RMA military capabilities and their assumed strategic effect.

The optimism about swift and decisive wars through RMA-type military capabilities appears somewhat irrelevant to the protracted nature of LIC. Arguments are put forward that the US will have a choice in becoming involved in LIC, yet public opinion can pressurise governments to become involved in humanitarian conflicts. The US-led war against terror did ironically commit the US to a long-term campaign which suggests that operations, especially against terror networks, will not necessarily be quick and decisive.

The September 11 attacks serve as an example of a weak military entity reverting to asymmetric strategies in the face of a superior information-based US military. Challenging the US military directly with conventional means became less of an option since the 1991 Gulf War. This denial of battle emphasises the contrast between the conventional focus in the RMA-debate versus the non-conventional strategies, tactics and instruments applied by contending groups in LIC, also considering the impact of September 11 (see Table).

With regard to scenarios, US strategic planning focuses on future conventional wars with a peer competitor. Third World-type conflict scenarios are largely excluded from primary RMA-thinking. LIC scenarios, although recognised, are not addressed and the view is held that the state will have a choice as to involvement in such conflicts. The most likely future conflicts strong powers will face are LIC in the Third World, but perhaps also in parts of Eurasia. The humanitarian disasters associated with these conflicts can create public outcry and force government involvement. Western values express a preference for civilised war that is removed from non-combatants, but this clear distinction between combatants and non-combatants does not characterise post-Cold War LIC.

September 11 highlighted the fact that while decision-makers support preparations for a future war against a peer competitor, opponents are developing asymmetric and non-conventional strategies and tactics. In spite of the belief that the state will have a choice about becoming involved in LIC, September 11 clearly indicated that a government can be forced within a very brief period of time to respond militarily and operate in a Third World conflict theatre (such as Afghanistan) through public outcry. September 11 also highlighted the contrast between non-state actors using indiscriminate violence and strategic thinking by the state biased towards conducting future operations in isolation of non-combatants. Terror networks, however, do not present easy military targets and they make it particularly difficult to keep non-combatants isolated in locate and destroy operations.

Democratic societies such as the US try to avoid casualties, which places limitations on the duration of operations. The opponents in LIC are usually more willing to accept casualties. In an attempt to limit casualties to own forces the US, for example, supported and relied on local Afghan forces for conducting the ground campaign. Operations are intended to be short and decisive according to RMA-thinking, while in LIC, opponents try to make the conflict protracted. President Bush has made it clear that the war against terror would be a long campaign. A short decisive campaign is therefore precluded from the outset.

RMA proponents prefer combat in rural areas while most conflict areas on the LIC-spectrum are in urban areas, where the use of decisive force becomes difficult and prone to calamity. Afghanistan, although very mountainous, presents a few problems associated with military operations in cities. A further RMA-ideal is battlespace knowledge. The utility of remote sensing equipment which is a crucial part of the RMA-type military equipment becomes limited in urban environments. These systems (including precision strike platforms) therefore cannot guarantee absolute success in these operations. Terror networks will therefore be difficult to monitor and target where urban locations merge with the rural preferences.

The preference exists to use high technological systems such as aircraft for precision-strikes. Opponents in LIC are usually infantry forces with limited exposure and vulnerability to high technological weapons. The US-led campaign in Afghanistan has re-emphasised the reliance on air power, but also indicated a reliance on specialised infantry units instead of regular infantry units.

RMA-Ideas TEN- Nature of Low-Intensity

SION Conflict and

Uncivil Wars

Scenarios Prepare for future Most conflicts are LIC and are

conventional war also the most

against peer probable conflicts that will

competitor. draw in strong powers.

RMA ideas do not

address LIC

scenarios.

Largely exclude Third Most conflicts occur in the

World Scenarios. Third World.

State will have a Public outcry against

choice whether or not humanitarian disasters or

to get involved in LIC. genocide can force a

government to intervene in

LIC-scenarios.

Civilised war with Uncivil wars where the

combat and battles distinction between

removed from civilians and combatants

non-combatants. become blurred.

National Values Minimise casualties Opponents more willing to

to armed forces accept casualties and

and civilians may not share the same values

Operations Quick decisive wars/ Drawn-out conflicts. Decisive

operations. force is rarely the

solution in LIC.

Preference for open Most conflicts are in urban

rural areas and areas that are densely

open terrain. populated and where the use

of decisive force

cannot be applied.

Battlespace knowledge Urban areas limit the use of

through remote sensors. Absence of

sensors. clear and identifiable targets

Precision-strike from Sophisticated weapon systems

remote platforms. and platforms do not

guarantee success as modern

firepower did during the

colonial era.

Military Preference for high Reliance on infantry.

Instruments technology and the

use of vehicles or Limited exposure and

aircraft. Reluctance vulnerability to high

to rely on infantry. technological systems.

Impact of September 11

Scenarios Rise in asymmetric (non-conventional) threats,

strategies and tactics.

Coalition against terror entered a LIC campaign in

Afghanistan.

Afghanistan largely characterised as a Third World

state.

The US government was compelled by public pressure

to respond military to the September 11 attacks.

Indiscriminate terror attacks of 11 September against

both civilians and the military.

Terror networks are not easily distinguishable from

society.

National Values Local Afghan forces were supported by the US to fight

the ground campaign against the Taliban.

Operations War against terror will be a long campaign.

Afghanistan is largely a rural theatre, but very

mountainous.

Terror networks in cities will be difficult to

monitor with remote sensing.

Terror networks present difficult military targets.

Military Extensive use of air power.

Instruments

US mainly deploys specialised infantry units for

ground campaigns.

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