The RMA?

What is its significance, and what impact will it have on conventional powers like Britain?

Not long after the oil fires of Kuwait were capped and the Allied troops of the Gulf War whisked from the scorched earth of the Middle East, did America declare its success in ‘the first information war.’ Numerous members of the American defense establishment agreed that this war had been fundamentally different from all those conflicts which preceded it due to the degree that ‘information dominance’ determined its outcome. Troops did, in fact, rely on an exciting variety of instruments for superior sensing and targeting, communication and coordination. Terms such as ‘dominant battle space awareness’ and ‘electronic battlefield templates’ seemed to warrant updating the lexicon of battle to include computers and communications in the mix with command and control warfare (C4I). It was during the afterglow of Desert storm that Americans first began brandishing the terms information warfare and ‘the’ Revolution in Military Affairs (RMA) with reckless abandon. Since that time, agreement has dissolved regarding the initial, eagerly proposed, transformation of warfare which numerous military and civilian observers claimed had occurred. Disagreements soon rang out regarding how, if at all, the character of warfare had changed. Few could even agree whether an RMA had indeed occurred.

‘The’ RMA is, by its own claim, a transcendent event—so radical and unprecedented as to cast all previous transformations of military affairs in to an inferior class—one which purports to be singular in its significance (hence ‘the’ rather than ‘a’ or ‘the current’ RMA). But what is the substance of ‘the’ RMA’s claims to greatness? What is so unique and exceptional about the current RMA to earn it this heady status? Those who speak of ‘the’ RMA are some of the
world’s highest ranking military officers and some of the foremost experts on military systems, information technology (IT), and strategic doctrine. What forms the basis of their argument the current RMA should be identified with such an unparalleled paradigmatic shift in the way modern militaries use technology? Is it possible for ‘the’ RMA to qualify as such an event? If so, what relevance does the RMA hold for nations other than the United States—and how critical an event is this for smaller nations not currently facing advanced strategic threats to their security? To tackle these issues, it is useful to begin with the progenitor of ‘the’ RMA and the specific character of what is known as ‘the’ RMA.

When Admiral William Owens of the Joint Chiefs of Staff wrote of ‘the’ RMA, he described essence, the synergistic effect of multiple, modern, technologically sophisticated systems: C4I (command, control, communications, computers, and intelligence), ISR capabilities (intelligence, surveillance and reconnaissance), as well as PGMs (precision guided munitions). His thesis is essentially that these systems, combined and used together by the military as a ‘system of systems’, revolutionize the character of warfare. Few of those writing on the RMA share much other than the rather generic view that “information is the resource, the target, and the weapon, all at the same time.” Still, it is possible to congeal much of the writing on the RMA into three main points. According to the claims of the RMA, this so-called transformation of warfare is accomplished through 1) dominant battle space awareness by means of sophisticated sensing technologies and real-time computerized networks for the communication of relevant images and data (which promise to reduce the fog of war dramatically) 2) capabilities for directing firepower for remarkably precise, almost surgical attacks, and 3) the capacity to disrupt C4I through electronic Information Warfare attacks. Despite the seeming elegance of these claims, Dr. Colin Gray of the University of Hull these ideas into perspective when he remarked,
“...[I]nformation has neither suddenly become important in war, nor has its importance suddenly been recognized...it is scarcely a brilliant insight to appreciate the importance of information for statecraft, defense planning, and war itself.” How, then, do these claims offer something unprecedented, or worthy of being called revolutionary?

Militaries of the past have been promised tools which reduce the fog of war, improve the accuracy, range and lethality of weapons, and allow combatants to disrupt the command control capabilities of forces by cutting their lines of communication. Each time qualitative or quantitative refinements were made, they were hailed as revolutionary. Strictly speaking, if we return to Kuhn's The Structure of Scientific Revolutions, the acid test used to determine if a change is truly revolutionary is the replacement of one paradigm with another. Using these terms, few changes previously hailed as such would qualify. Among these would be the switch from Homeric to stand-off combat, the expansion of the battlefield to include the ocean, and finally a third dimension with the advent of air power. Nuclear weapons certainly changed the strategic calculus for nations. Do the three components of Owens’ RMA described above qualify? The simple answer is no. But in war, as Clausewitz might be paraphrased, even the simplest of things are hard. When these three qualitative changes are combined, the synergy which results might very well qualify as revolutionary. How might this work?

To begin with, it will be useful to drop the offensive notion of 'the' RMA and refer to 'the current RMA'. Even if it is possible to demonstrate the replacement of one paradigm with another, as has occurred multiple times during the history of military affairs, we will note that none of these had the hubris to claim to be the end-all transformation to cap off a long history of transformations. There must be something about the coming of the millenium which afflicts political scientists and leads them to speak of such things as 'The End of History' and 'The'
RMA. Having elected to drop the pretensions of end-ism, it is appropriate to begin our analysis of what the current RMA offers in the way of novelty and significance.

Admiral Owens describes dominant battle space awareness as the dramatically improved capacity to view the theatre of conflict with such accuracy, range, and rapidity of feedback that the ‘fog of war’ is reduced, but not eliminated. “It is a profound thing when you can see the battlefield for the first time in history; many theoreticians, many doctrinal writers have talked about the fog of war, the certainty that there would be a friction that would prevent you from having a true knowledge of the battlefield. It will never be true, but within the next two to five years, if we have the vision, we are faced with the possibility of seeing a very large battlefield with great credibility. That is a battlefield the size of Iraq or North Korea, seeing it 24 hours a day, real time, all weather. If you can see a battlefield that way, with the knowledge of that battlefield, not just the information, and the enemy camp, you have dominant battlefield awareness and you win.” (Remarks on 21 May 1997 at the RIIA Conference “Revolution in Military Affairs?”) According to Owens, dominant battle space awareness allows military decision makers to know with certainty where the enemy’s centre of gravity lies, and thus enables them to strike at it using fewer forces to launch a targeted attack. Moreover, this clarity of vision creates a feedback loop which further allows forces to tailor successive attacks, as necessary, to complete the task. This is the first part of the synergy which relies on precision guided munitions to direct firepower across large distances with incredible accuracy. Networked communications facilitate both the sensing and the strike aspects of this system. The manner in which these three aspects interrelate and constitute a mutually reinforcing system offers a dramatic improvement in the qualitative character of warfare.
Information Warfare constitutes yet another system of systems. In fact, the IW terminology is often (erroneously) used interchangeably with RMA by those who are unaware of the distinctions between the two, or who see it as the ‘newest’ of the systems operating in the military sphere. Although IW is far from being a new concept, the increasing dependence of the modern military (particularly the US Military) on networked computers for C4I capabilities, as well as for ISR capabilities makes it both a tool and a target. In the traditional sense, militaries can use advanced technologies to enhance age-old methods for disrupting, denying, delaying, distorting, or destroying a foe’s command control capabilities for warfighting. To the equation new means of attack have been developed in the form of digital attacks which insert malicious code (viruses, logic bombs, Trojan horses, worms, etc.) into enemy systems for the same purposes. IW highlights the view previously described: that the strategic value of information has only increased with adoption of these technologies.

Further, ISR capabilities translate to a magnitude of order improvement in intelligence, surveillance and reconnaissance capabilities for those nations with access to the advanced sensory and communication systems. It is Owens’ hypothesis that C4I + ISR + IW = RMA. If this is true, we would expect a dramatic change in the character of warfare—but not surprisingly, this involves foes of diverse calibre and character as well as the sophisticated modern military which he envisions. Few if any nation other than the United States possesses RMA-league capabilities for warfighting. Does a contest between high and low tech combatants manage to yield results which still result in something which qualifies as warfare transformed? Perhaps. During the tension of nuclear deterrence it was possible to speak of warfare transformed since both the West and the USSR pitted nuclear arsenals in a stand-off competition of nerves. But is it not also possible to talk about the deterrence of America’s nuclear threats against a non-nuclear
Iraq during the Gulf War which resulted in the latter refraining from the use of chemical weapons? Is warfare transformed when only one of two parties possesses a ‘transformative’ technology? Quite possibly. Such has been the case in the past.

If only the US possesses RMA-calibre capabilities, has the character of warfare been transformed? Some would argue that it has been, if for no other reason than that adversaries are presented with challenges of an unprecedented, possibly insurmountable (for the time being) nature. A secondary reason may also augur well for those who hold this view. The asymmetric nature of attack presents unusual opportunities for the shrewd foe willing to exploit the weakness which the US claims as its strength: its dependence on networked computer systems for the conduct of C4I and ISR capabilities. Whether a foe chooses to use physical means such as bombs, or digital means such as viruses or code to cripple a critical command-control infrastructure, American dependence on these systems constitutes a significant liability. Until this vulnerability is sufficiently addressed, warfare may be transformed in so far as a nation or group without significant military forces may direct attacks at this strategic fulcrum in lieu of trying to match forces or weapons with the US. While the current RMA does not change warfare in ways which render it unrecognizable, it does modify the strategic calculus in these few, but important ways.

How significant is this current RMA? The American experience with the JSTAR system during the Gulf War and in Somalia provides a rather useful example of the RMA’s status quo. Touted as the system which would provide remote sensing, dominant battle space awareness, and the military’s most advanced C4I ISR link, JSTARS proved to be ‘a work in progress’—to mince words. It revealed itself to be a massive, flying target with no on-board countermeasures which provided little benefit to fielded forces other than the data deluge of information (note: not
‘intelligence’) which reached military forces indiscriminately, regardless of the necessity of the information for the particular operation or group’s specialized mission. What information was received was not routed or filtered, circumvented the rightful chain of command, and defeated all semblance of hierarchical organization. Moreover, information which could be seized from the torrent was without computerized workspace for storage or comparison with other data collected at an earlier time or date. If this were not enough, viruses and logic bombs plagued the sensor suite’s software, detected after the fact as having been introduced online, as part of the hardware, and in the factory-sealed shrink-wrapped packages of software purchased from the manufacturing agent. Communications frequently went off-line, and when JSTARS was used in Bosnia, troops were known to resort to cellular phone transmissions rather than fumble with the hopeless ComNet kits they were given. If JSTARS is the high-tech poster child for the current RMA as was originally advertised to Defense appropriations groups, then this RMA has a long struggle ahead if the promises of the ‘system of systems’ approach to warfare is to truly take form. As it stands, the ‘fog of war’ and the ‘friction’ which Owens describes as a fading apparition of wars past, appears to be more appropriate than ever to describe a battlefield plagued with computers which won’t behave let alone provide battle space quasi-omniscience.

What, then, is the relevance of the current RMA for countries like Britain which have chosen a more conservative approach to the RMA than that espoused by Admiral Owens? Chief among the concerns raised by those who otherwise feel this to be a prudent decision on Britain’s part is the hindrance this will mean for the interoperability of joint Anglo-American forces. In many ways this concern is exaggerated. If anything, the current RMA, according to its principles of precision guided attacks and dominant battle space awareness, will require fielding fewer forces. Further, the Britain is in the advantageous position of watching its ally invest substantial
resources to test and field technologies which may or may not be viable, and choosing from among those which pass muster. The advantage of making use of another country's sunk costs in R&D, as well as the capacity to simply leapfrog technologies rather than pay for the failures of one system in the hopes of the few precious successes, is a spoil which RMA pioneers cannot enjoy.

The view has been advocated that Britain remain a close working ally with the United States, and use American IW capabilities to complement its own smaller-scale military capabilities. This strategy hazards rather little and offers healthy returns. Perhaps most important, it positions Britain abreast of the advancements the current RMA has to offer, and presents ample opportunity for taking advantage of these systems, either through cooperation or acquisition—whatever the need might be. Further, increasing attention is being devoted to the Revolution in Political Affairs, represented in large part by the humanitarian and peace-keeping operations of which Britain is very much a part. Qualitative innovations, such as those described as contributing to dominant battle space awareness, will be particularly relevant for the conduct of these activities—even if Britain does not require these capabilities for the conduct of warfare. Whatever the case, the degree to which a conventional power such as Britain desires to invest in the current RMA will be determined by financial constraints, and by questions of the threats which she faces in the current and future environment.

Two specific issues argue for Britain to buy into the current RMA as much as she can afford. The interoperability issue serves as the first of two arguments. Second, but of no lesser importance, is the vulnerability, current and future, of Britain to IW attacks. The trend towards increasing dependence on networked computer systems for the conduct of peace time and wartime military and intelligence activities is irreversible. This trend will only continue into the
future; as such, it is critical that Britain's dependence not develop into a strategic vulnerability. Safeguarding against a contingency of this type will be a matter of developing defensive IW capabilities. Unlike other RMA areas where the Anglo-American relationship's corresponding security guarantees will mean protection for the British, there is little one country can do for another with regard to preventing or protecting against an IW attack. In this respect, systems must stand alone, and be fortified individually against intrusion and penetration of secured systems. If the British information infrastructure is crippled, there is little that an alliance relationship can do to mitigate these circumstances, or to prevent their occurrence in the first place. Whatever expenditures Britain considers making towards adopting current RMA technologies, it will be a prudent investment to allocate funds for defensive IW fortifications.