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MEMORANDUM FOR THE RECORD

SUBJECT: RMA Update

My purpose in this memo is to put on paper some thoughts about the hypothesis that the next two or three decades will see a revolution in military affairs. The last memo I wrote on this topic was in August of 93. A number of things have happened in the interim that deserve some comment.

There are now underway in the Department several activities that relate to the RMA. I will first discuss these activities and indicate some of their results. I will then discuss some of the implications of what has been learned so far. Finally, I will offer some thoughts about a question Bill Perry raised at the first meeting of the RMA Steering Group chaired by John Deutch. His question is what implication the RMA might have for allocation of DoD resources.

Current activities. RMA activities are being conducted by this office, within the Services, and by task forces organized to support the operation of the RMA Steering Group. This office is focused on improving our own assessments of the RMA and on stimulating the Services and others to search more actively for novel concepts of operation and organizational changes that might be appropriate 15 - 20 years from now. We are supporting several historical studies of periods of major change, looking especially at the 20's and 30's to understand how major military innovations are generated and carried out. Other efforts are focused on areas where our first (July 1992) assessment was weak. In particular, we are undertaking activities that will allow us to speculate more intelligently about the ways in which warfare may change in several warfare areas. We are also trying to improve our analysis of prospective competitors and participants in a military revolution in the next couple of decades.

We have also undertaken a series of three-day roundtable meetings, one with each of the Services. We have finished three of these and will have our last such meeting in June with the Navy at Annapolis. These roundtables provide an opportunity to discuss the hypothesis that a revolution in military affairs will take place and to hear from each of the Services how they are thinking about the future, whether they are pursuing particular innovations and changes in their concepts of operations, their forces, etc. We are also chairing one of the five task forces supporting the RMA Steering Group. Ours is focused on the issue of fostering innovation, that is,

what programs, activities, and changes can we make in the next few years that would foster innovation over the next couple of decades?

One thing these round tables show is the problem that people have with the use of the word "revolution" to describe processes that (however large the differences they make in the end) evolve over 20 years or so. But if you look at past periods of major change, for example the 20's and 30's, it is clear that these changes always take considerable time. What is revolutionary is not the pace of change but the character of the change and the degree of improvement in military capability obtained. While there is broad agreement that major changes in warfare will take place, what is lacking is a vision of the end state. This is in contrast to the 20's and 30's where by the early 20's some professional military people were articulating visions of the future. Fuller and Liddell Hart in England put forth fairly good notions of how the tank could be used to restore mobility and maneuver to the battlefield. The aviation people in the US (Billy Mitchell) and in Britain (Trenchard) were articulating plans for the strategic use of airpower. A little later in the 20's the US Army Air Corps people developed in more detail a strategy for using airpower in long range bombardment against strategic targets. In the Navy, naval aviators began to articulate and explore in wargames how carrier aviation could change the conduct of war at sea. There is nothing quite like that now. Some of our activities (especially the gaming in which we will involve people from the Services) are intended to generate more explicit visions of the future.

As I pointed out in my earlier memo there are some ideas around about how warfare might change but they are almost entirely derived from Russian writings. These writings emphasize the "reconnaissance strike complex", the dominant role of long range strike in many warfare areas, and information warfare as a newly important or dominant area of warfare.

Why are there no visions? Why is the main approach of our military organizations thus far evolutionary? I would suggest the following reasons:

- The continued decline in budgets and the consequent downsizing of the forces is not over and has occupied the attention of the top level of the military establishments. After WWI there was a very quick demobilization. By the early 20's, people refocused on these more revolutionary possibilities. It is not clear when the budget decline may bottom out but we may have to wait until that point for people to turn their attention to future prospects and the kind of changes that current and future technology might allow.
- The current Defense Guidance may have the effect of focusing people on current and relatively near term problems (2 MRCs). Until there is more of a consensus that within the next 20 - 30 years larger contingencies of a different character than the currently described MRCs are possible, it may not be easy to get attention to the longer term and the changing technological situation. The histories of the 20's show that some specification of threats and contingencies, even of a general sort, can be very important in focusing attention and producing innovative solutions. One of the reasons for the British failure during the interwar period was the multiplicity of tasks that potentially faced the British military services. In contrast, we and the Japanese saw each other as potential opponents in the Pacific and began to plan accordingly.

- Innovation may be especially difficult in the information aspects of warfare, including command and control -- precisely where the greatest technological opportunities may now lie. For one thing, these technologies do not seem to promise some distinctive new platform around which a revised doctrine and force structure can be built (as the airplane was in the 20's and 30's). The new technologies are more like the small electric motors that, when first available, were put in everything and influenced everything. The pervasiveness of the potential effects greatly complicates analysis of how to optimize our forces given these new technologies. Besides this intellectual challenge, there is a cultural one. In the past, "warfighters" have been the people who dominated military organizations, and were therefore in a position to choose new technologies, develop concepts of operations, and make the big changes. Specialists in the information aspect of warfare have served in a supporting role. If this aspect now becomes the dominant determinant in future war, these practitioners must reach the highest ranks in our military establishment, a change that will be more difficult in their case than it was for the more clearly "warfighting" aviators or submariners in the past.

Implications. The major implication I draw from the past few months is that we really are at the very beginning of a revolution in military affairs. Therefore the strategic issues that we raised in our first assessment are basically right. For the next few years, the central task is to increase the effort devoted to the search for innovative concepts of operation and the organizational changes that will exploit current and likely future technologies and systems. I remain convinced that, while we in OSD can assist in various ways, ultimately it is the Services and the military that have to both design and carry out the innovations. Therefore it is very important to involve them in activities that stimulate them to undertake this search.

Besides this search for the best ways for future forces to organize and operate, we need to try to understand the likely character of future warfare more broadly. The Russian writings raise such questions as: How do wars start? Is there a premium on preemption? How might wars end? Will wars be short or long? Is this to be a period of offensive or defensive dominance? We have not really addressed such questions very much, although people have considered the possibility of information warfare (disruption of national information systems) as a kind of prelude to the main engagement of forces.

This effort to understand future warfare can only proceed effectively if we do a better job in articulating a view of the future security environment, i.e., the particular range of contingencies and opponents that we think are plausible over the next two to three decades. In any case, I believe that definitely means going beyond the description that we have in the current guidance documents. It means also paying a lot more attention to the period beyond ten years from now. Since one characteristic of this future is a significant level of uncertainty, we ought to consider the use of scenario planning as it is done in some of the major business establishments. The idea is to sketch alternative scenarios for the future that encompass variations in the most significant variables and then to look for strategies that are robust in the face of those uncertainties.

We need to be more imaginative about the difficulties various opponents could pose for us in the future. There is a tendency to think that only another country more or less our own size in terms of population and GNP can cause us significant problems. But the case of Japan prior to WWII is instructive. Japan produced a navy that gave us a run for our money, despite having a GNP approximately 10% of ours in 1938. Because the Japanese diverted large resources to the navy and also were intelligent they were at the leading edge in utilizing airplanes and produced a formidable navy. In general, periods of revolutionary development afford an opportunity for medium and smaller size powers because if they are quick to learn how to exploit the available technologies they will be able to create major problems for much larger opponents.

In that connection one concern is that if we are in a period where the major countries do not push ahead to exploit technology for military purposes, then a "technological overhang" may develop. That is, technology accumulates and is there for anyone who is clever enough and ambitious enough to make military use of it. If something happens so that one or a few powers begin to make use of the available technology a very rapid mobilization race to exploit these technologies may begin. We need to think about mobilization in such circumstances as one of the future situations that we may find ourselves in.

More generally, we need to develop our thinking about a long term strategy for the US in relation to the prospect of an RMA. What are our goals? How do we plan to achieve them? Who are our allies? What are our relations with them? Some thoughts on this appear in the next section.

Perry's question. At the first meeting of the RMA Steering Group, Bill Perry talked about what he saw as a military technical revolution in the 70's and 80's. He mentioned that in the 70's the Carter Administration made a conscious choice in allocating resources among the four broad categories of force size, rate of procurement, readiness, and R&D. The choice was to maintain force size, reduce procurement, reduce readiness (resulting in a hollow force), but maintain R&D. The bet was that at some time in the future budgets would go up and the fruits of the R&D effort could be used to procure new lines of equipment that would lead to a very effective military. That bet paid off. But in the current period the choices among those four categories have been to reduce force size, limit procurement, maintain readiness, and maintain R&D. The question he raised was whether this was a good bet on the future, whether this was the broad strategy we should be following. He asked that he be informed of any insight into that question that comes out of work on the potential Revolution in Military Affairs.

Here are some thoughts which don't fully answer that question, but may suggest some directions in which one might go. In my judgment three elements form the broad context for US strategic choices. The first is the transition still going on from the geopolitical structure that existed during most of the cold war to a new structure of several major powers of which the US will very likely be the strongest. This transition is caused by the Chapter 11 of the Soviet Union on the one hand and, on the other, by the strong economic growth in Asia which will eventually produce a number of major powers there. If we take a 25 - 30 year time perspective, it is possible that China may emerge as having the largest GNP of any country, even though its per capita income will not approach that of the United States or other major Western powers. There may be

six or eight major powers, but the two that have the biggest chance of becoming major competitors are a revived Russia that partially reconstructs its empire, and China. In any case we will be dealing with a world for which we cannot easily forecast the natural coalitions and rivalries. We need to do considerable speculative work on what the major possibilities are.

The second major trend is the spread of technology, weaponry, and skills out in the world, which may create a number of regional powers. These powers will take some advantage of available technologies, using them in ways that change the character of power projection for the United States and in fact for all of the larger powers.

The third aspect is the prospect of a revolution in military affairs that may occur over the next 20 - 30 years, superimposed on a changed geopolitical situation. This remains a hypothesis or conjecture but one that seems plausible given the rapid pace of change in a number of technology areas. Since we are at the beginning of this revolutionary period we cannot foresee its character and outcome, therefore the planning context is very uncertain.

Some of our uncertainty about who the major competitors will be and how the character of war will change can be clarified by further thought and speculation, but we need to adapt our planning to an increased level of uncertainty. Our broad strategy seems likely to emphasize coalition building in order to share the responsibility and cost of defending against the activities of some of the major powers or against various more formidable regional powers. One problem is that the Europeans, who are natural partners, may over this same period encounter considerable economic difficulties; in any case with the exception of the French, they are now cutting their military budgets much more rapidly than we are. And Japan, our most likely and important ally in the Far East, may also have its difficulties. We will want to pursue revolutionary military improvements to maintain an adequate margin of capability both over the smaller regional powers and in the long term against potential major competitors.

Our strategic goal should be to delay the emergence of hostile and competent competitors. Partly this is a political matter of co-opting them, giving some of the major powers few incentives to arm against us. But effort should be devoted to thinking of ways of erecting "barriers to entry" against potential hostile competitors. We may want to plan to periodically demonstrate spectacular improvements of some sort in technology and weapons performance, in order to make the task of competing with us seem more difficult. How best to arrange all this is not clear but should receive considerable attention and thought. We will also want to deter the middle size regional powers and their ambitious leaders. Again, the keys may be impressing them with our capabilities and the changing nature of our capabilities. If we rest long with one formula for dealing with them they may find ways around that capability.

What then are the implications of this general situation for the issue that Perry raised? I would say that since we are currently in a rather favorable strategic position, with no immediate large scale threat, we have time to think things through. I would further reduce force size (and even readiness in some part of the force) if I had to in order to free up resources to focus on longer term goals and the intellectual problems the prospective RMA poses. We are limited in the pace and the degree to which we can downsize our forces because we don't want to impair the

organizational health of our major military establishments. We need to keep the training skills and methods that we have developed in one of the most significant advances of the past 20 years. Indeed our training methods and skills may be one of our core competencies that we want not only to maintain but to improve and invest in for the future. These skills may allow us to maintain an edge over other military establishments, but may also enable us to build up larger forces much more effectively and efficiently than other nations if we ever have to mobilize.

As I said I would focus more on long term goals than we are currently doing. We are not paying much attention to the potential emergence of really major competitors 20 - 30 years from now. The Defense Guidance focuses on two MRCs, near term and moderate sized opponents who do not use nuclear weapons or display any special technical capability. In looking at the longer term we need initially to clarify our ideas as far as we can as to opponents and likely contingencies. More importantly, the next 10 - 20 years ought to be seen as a period of experimentation with new concepts of operation and new organizational arrangements, searching for these and testing and experimenting with them. Some of this can probably be done through simulation but we will need to look at production of new equipment to fully explore what the technologies, weapons, and concepts and organizations can do. We also need in some way to develop a base for rapid expansion some time in the future should that be needed. The cost of these future efforts is not clear but appears initially to be quite small consisting of some special task forces and programs of wargaming.

In summary my guess is that if one thought a bit more in terms of these longer term objectives some slight modification of the priorities we are now following might seem wise. In any case the prospective revolution in military affairs provides both an opportunity and a challenge because other countries will try to exploit the technologies in ways that create unforeseen dangers and problems for us. The lesson of the 20's and 30's that is most compelling to me is that in the first few years of the war the countries or military establishments that do well are those who have made the appropriate effort to develop concepts of operation made the organizational changes, and did the training and doctrine development. Our challenge is to be the leader in this even more than in the development of technology or of new weapon systems. In fact the design of new systems needs to be tailored to the concepts of operation that are seen as being the most efficient and effective.

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