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Regional Missile Defense from a Global Perspective provides a fairly comprehensive snapshot of the current status of various missile defense programs throughout the world. This status, of course, is about to change, since the new US administration will almost certainly undertake an overhaul of the missile defense program. However, whatever direction this program takes in the next four or eight years, it will not be starting from a clean slate and any new development will have to take into account the decisions that already have been made by previous administrations as well as by US allies and adversaries. This makes the current volume a useful guide about the issues that any new course will have to deal with. The book is organized in three parts. The first two cover US policy and programs and regional dynamics; the third part presents a broader analysis of missile defense, including the cost associated with it.

The first three chapters, by Susan Koch, James Acton, and Amy Woolf, cover various aspects of the history of the US missile defense programs and policy going back to the 1980s. There is some inevitable overlap between the chapters, but collectively they capture all important elements of the evolution of the US views of the role of missile defense. They describe the missile defense enthu-

siasm of the Ronald Reagan years and the gradual change of mission, first to countering limited strikes and then to dealing with short- and theater-range missiles, that came with better understanding of technological limits of defense, shifting perceptions of the missile threat, and Russia's objections to the US missile defense program.

The George W. Bush administration used the brief period of rapprochement with Russia that followed the 9/11 terrorist attacks to withdraw from the Anti-Ballistic Missile (ABM) treaty with Russia. The United States then proceeded with deployment of missile defense, which appears to have found a way to satisfy its supporters and deflect most of the criticism of its opponents. It did this by fudging most critical technical issues. Interceptors of the national missile defense were deployed with minimal and largely inconclusive testing. The goal was to provide an early capability against a limited unsophisticated threat and replace it as soon as better technology becomes available.

Although the Bush administration's plan envisioned an integrated layered system that would combine national and theater defense as well as provide protection against short-range missiles, the focus of attention gradually shifted to theater defenses. To some extent, it reflected the fact that

theater systems, such as THAAD and Aegis, having to deal with shorter-range missiles did not face the same technological challenges that systems that are supposed to intercept intercontinental missiles had to confront. Another factor was the decision to build a missile defense site in Poland and to deploy radar in the Czech Republic. Even though these systems were supposed to be part of the national defense, in the controversy that surrounded their deployment, the United States presented the system as its contribution to the protection of Europe. The Barack Obama administration made that commitment even stronger by adopting what it called a European Phased Adaptive Approach. The primary mission of the new system was to protect US troops and allies from short- and intermediate-range missile threats. The national component of the defense system was frozen at the level achieved by the Bush administration, although it was understood that the network of sensors deployed around the world as part of the Phased Adaptive Approach implemented in different regions would contribute to the protection of the US homeland.

The main factor behind the shift toward theater defenses is that protection of the US territory against intercontinental ballistic missiles still remains an elusive goal. As George Lewis writes in his chapter, there remains a great deal of technical controversy about the performance of national missile defense interceptors, their test record, and the organization of the development process. There are larger conceptual issues as well. Demonstration of a capability to intercept an intercontinental-range missile is quite different from building an operationally effective system that will be “effective in actual use, where unanticipated circumstances and adversaries’ countermeasures must be expected” (p. 78). This is true for all missile defense systems, but the problem is especially acute in the case of national missile defense, which is supposed to provide protection to the entire country against a nuclear missile threat. Furthermore, it is impossible to test na-

tional missile defense in actual use, which means that its effectiveness will be essentially unknowable.

Questions about technical performance or operational effectiveness have rarely deterred missile defense advocates. As detailed in the chapter by Nancy Gallagher, US Congress has often played a critical role in supporting missile defense programs. It is almost certain that Congress will continue to be one of the drivers of missile defense expansion and it is quite possible that it will encourage the incoming administration to move toward strengthening the homeland protection component of the missile defense program.

The next section of the book describes various regional missile defense developments. Chapters about Russia by Vladimir Dvorkin and China by Christopher Twomey and Michael Chase figure prominently as these are the two countries that consider themselves directly affected by the US drive to build missile defenses. The authors agree that it is highly unlikely that missile defense could pose a serious threat to the strategic forces of these countries (which is, of course, the point constantly made by the United States). However, Chinese and Russian opposition to the US plans is real. To some extent these concerns are just a convenient way to justify strategic modernization programs, but they also seem to reflect unease about future directions of the program and its potential for expansion. To prevent expansion, Russia has been trying to secure an arrangement that would limit the scale of the US program. Although it is rather unlikely that the United States would agree to a second version of the ABM treaty, at some point it appeared that a degree of transparency and bilateral cooperation in development of missile defenses might be possible. Dvorkin describes a fairly elaborate proposal for cooperative work, although he admits that the post-Ukraine crisis in US-Russian relationships closed this option for a long time. Besides, the Russian leadership appears to have concluded that a dialogue on

missile defense with the United States is impossible; it concentrated on modernization of its strategic forces. For China, the prospect of cooperation with the United States was never there, so it had to rely on modernization of its strategic forces as its primary option. Twomey and Chase also describe China's own efforts to develop missile defense technologies, which seem to be focused on protecting its strategic assets, such as command and control centers.

Europe is another area that definitely deserves a place in any discussion of the current status of missile defense programs. The chapter by Gustav Lindstrom gives a very good overview of the recent developments, starting from the US decision to deploy elements of its missile defense system in Poland and the Czech Republic, made in 2007. Lindstrom correctly describes the key questions that were raised by that decision, starting from the fact that that decision was handled as a bilateral affair between the United States and a select number of European countries, rather than a North Atlantic Treaty Organization (NATO) project. NATO eventually came to support the US plan, but did so only reluctantly. Although the European Phased Adaptive Approach is described as a European defense, the mission of the US system, as defined in the 2010 Ballistic Missile Defense Review, is to "defend against regional missile threats to U.S. forces, while protecting allies and partners and enabling them to defend themselves" (p. 164). This implies that NATO would have to provide its own assets if its system is to protect Europe. But NATO does not have the capability to do so and its financial commitment to the missile defense program illustrates it very well: the combined cost of the NATO effort is estimated to be about one billion euros over more than ten years (p. 114), which is paltry in comparison to about eight billion dollars that the United States spends on missile defense each year. Lindstrom is rather optimistic about the prospects of European missile defense. He suggests that missile defense in Europe will remain "a key element for preserving collec-

tive security" on the continent (p. 118). But it should be noted that the entire European program remains heavily dependent on the United States. It would not be surprising if the next US administration dramatically downscales its European project in favor of building an additional national missile defense site on its own territory. It is highly unlikely that NATO would be able to fill the resulting void.

The dynamic of relationships between the United States and its allies and partners in other regions, namely, in the Gulf (covered in a chapter by Michael Elleman and Wafa Alsayed) and in Japan (Saadia Pekkanen), is quite different, primarily because of the willingness to share the cost of missile defense deployment (and, in the case of Japan, the cost of development as well). Elleman and Alsayed focus on the potential for cooperation between the Gulf states and consider a potential regional missile defense system that would combine assets of individual states. Pekkanen provides a detailed description of Japan's contribution to the missile defense development efforts and discusses political questions that are raised by Japan's active involvement in the development of the system.

South Asia is probably the only region where the United States is not directly involved in the missile defense development. As described in the South Asia chapter by Andrew Winner, India has made an effort to develop a system to protect its large cities; it will probably continue this effort and expand it to counter Chinese missiles. Pakistan appears to be doing some work on countermeasures. Winner concludes that missile defense has already become a factor in the region's security, potentially affecting long-term stability in South Asia.

The chapter on Israel, by Ariel Levite and Shlomo Brom, is perhaps the most optimistic assessment of the missile defense potential. The authors describe what they call a "remarkable success achieved by the Israeli missile defense pro-

gram, not only in tests and simulations but in combat” as well (p. 137). This characteristic is based largely on the analysis of the combat use of the Iron Dome system, which proved successful in intercepting short-range (up to seventy kilometers) rockets launched toward Israel from the Gaza strip. Of course, from the technical point of view the Iron Dome mission was completely different from that of the systems that are supposed to counter longer-range ballistic missiles and therefore its experience is not directly relevant to the overall assessment of missile defense effectiveness. But that experience does provide some valuable lessons for missile defense. Levite and Brom present a very good analysis of the difficult policy choices that emerge in a situation when the population expects that defense will protect them from an attack. They also consider the relationship between offense and defense and the effect that Iron Dome had on the dynamic of a conflict. The analysis suggests that the role of missile defense can be quite complicated and not necessarily positive.

Even if one accepts that the Iron Dome demonstrated a “stellar performance” (p. 154), some caution in this assessment is probably warranted. Aside from the fact that the system had to deal only with short-range rockets, it was able to tolerate a certain degree of failure. The data show that about 10 percent of the rockets that the Iron Dome attempted to intercept succeeded in getting through (p. 144). This may be an acceptable failure rate for an intercept of a small conventionally armed rocket, but it would not be considered acceptable for a system countering nuclear missiles. Levite and Brom admit that the current discussions in Israel tend to avoid this question and “relegate [it] to the margins, whenever possible, usually hiding behind a discussion of the conventional and rocket threat” (p. 157). The authors suggest that the reason is that Israel does not discuss “nonconventional threats” to avoid legitimizing them, but it is also possible that the reason is that

this discussion would raise serious questions about missile defense effectiveness (p. 156).

This brings us to the final part of the volume, which opens with a chapter, authored by Brad Roberts, that describes the broad strategic view of the missile defense role in today’s circumstances. Roberts concludes that missile defense in itself is neither a dead end nor a game changer, but rather one of the key elements of a comprehensive approach to regional security. He sees missile defense providing strategic value in various crisis situations. For example, missile defense can help the United States to control escalation of a conflict; to protect allies; and, if it comes to a regional adversary contemplating an attack on the United States, to significantly reduce if not eliminate “the vulnerability of the U.S. homeland to one or a few shots” (p. 252).

This analysis, however, does not seem to fully account for a number of factors that would be especially relevant in the case when the adversary can pose a minimally credible threat of a nuclear missile strike against the United States or its allies. There is a significant asymmetry between the risk calculations of the two sides—in most scenarios the adversary can achieve its goals even if his chance of carrying a successful attack is very small. The defense, on the other hand, would have to have an absolute certainty in its ability to intercept the missile if it is to discount the threat as not credible. Given that the effectiveness of missile defense is essentially unknowable, that certainty would be impossible to achieve. An imperfect defense could probably play a role in certain scenarios, but all it could do is to make the adversary’s already small chance of success somewhat smaller. In a conflict, this is unlikely to change the strategic calculation of either side, making missile defense essentially irrelevant.

Missile defense may well prove useful in reducing the level of damage in a conflict when used against conventionally armed missiles and especially when it protects military assets. These

cases do not require the degree of certainty about defense performance that would be necessary in protecting populations from a nuclear attack. But its strategic value may be more comparable to that of air defense.

It can be argued, of course, that even if the strategic value of missile defense is limited, it still provides a useful military capability (just as air defense does). This argument, however, should account for the significant cost of the missile defense undertaking. The financial costs are considered in the last chapter of the volume, authored by Dov Zakheim. These costs are indeed substantial, but at about 206 billion dollars spent on the program through 2014 (in FY2014 dollars, p. 270), it is not the most expensive US defense program. Zakheim provides a breakdown of these figures and argues that the opportunity cost, understood as diversion of funds from other defense programs, is “neither less nor more important” than with other defense systems (p. 277).

There are, of course, other opportunity costs incurred by the development of missile defense. Even though it is doubtful that the US missile defense program is the primary driver of the strategic modernization programs in Russia and China, it is certainly a factor that makes these programs more ambitious than they would have been otherwise. On the regional level, the relative ease of missile defense deployment can divert attention from decisions that may provide longer-lasting solutions of security issues. For example, it is possible that without missile defense, the United States and its allies in the region would have worked harder to negotiate constraints on the North Korean ballistic missile program.

Most important, the experience of the past missile defense programs, which go back to the 1960s, strongly suggests that the enthusiasm about possibilities offered by defense quickly wanes as soon as missile defense systems confront an actual missile threat. It is quite likely that when a country like North Korea gets to a point of

developing a robust missile program, the role of missile defense will be reevaluated and it will lose the prominence that it has today. The next administration, supported by the Republican Congress, will probably expand the existing program, especially its homeland defense component, but in the end the United States is likely to find itself bearing all financial and strategic costs of the missile defense development but having no benefits that it seems to offer.

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