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# SPACE

## A Missile Defense Enabler

The Army space community bins Soldiers and civilians into two categories: Space Professionals and Space Enablers. A Space Enabler is defined as “Army personnel assigned to positions whose primary career field is not space, but who perform unique tasks or functions or may require specialized skills to apply space capabilities.” As an FA40 working in the missile defense field, I fall into the Space Enabler category. As I thought about that label, I began to wonder “who is enabling whom?”

A quick review of the Ballistic Missile Defense System (BMDS) architecture tells a powerful story. The system receives its initial indications of a missile launch from space-based sensors. Once the missile breaks the horizon of the forward-based radars, that track data is transmitted to the fire control system via satellites, both commercial and MILSATCOM. The fire control system uses MILSATCOM links to move critical mission data between elements. The Global Positioning System constellation provides precision timing for all of the geographically-dispersed elements of the system. As the interceptor flies out, it uses star shots for navigation. The system communicates with the kill vehicle while it is in space, and the intercept occurs above the atmosphere. Additionally, the system must consider sun angles, the locations of resident space objects, and many of the sensors are multi-mission, supporting space situational awareness. It seems as though there is a lot of space involved in missile defense. In fact, without space assets, the Ballistic Missile Defense System does not work.

A great example of the nexus between space and missile defense is OPERATION BURNT FROST; the 2008 shoot down of a disabled National Reconnaissance Office satellite. As one of the lead planners for U.S. Strategic Command during this operation, my training as an FA40 was invaluable. BURNT FROST utilized a patchwork of missile defense and space sensors to execute the intercept using a modified U.S. Navy SM-3 missile. Understanding orbital mechanics, space weather and space sensor capabilities, along with my understanding of theater missile defense platforms and command and control greatly

improved my ability to coordinate complex issues across services, combatant commands and between the missile defense and space communities. This experience solidified my view that space and missile defense are complimentary, and that space is indeed a missile defense enabler.

### Path Ahead

Beyond my dislike of being called a space enabler, I do have an agenda. I believe it is an operational imperative that we institutionalize space training into the Ballistic Missile Defense System training curriculum. From my perspective as a brigade commander, I want my missile defense crews to understand the operational implications of space on the Ballistic Missile Defense System. Space weather matters, as it impacts communications and radar performance. The health of the Defense Support Program and Global Positioning System constellations matters on a number of levels. Understanding the capabilities and limitations of space systems, along with their requisite impacts on the Ballistic Missile Defense System performance is critical. Very little of this is currently taught to new operators. In my opinion, courses like the Interservice Space Fundamentals Course, Space 200, and other courses should become a required part of the Ballistic Missile Defense System training process.

From a broader perspective, we need to examine the utility of assigning FA40s to the 100th Missile Defense Brigade (GMD) and key missile defense planner billets, as well as having missile defenders serving in the 1st Space Brigade. This “cross-fertilization” also has advantages to Army National Guard life cycle management, as it would enable Soldiers to seamlessly transition between the 100th Missile Defense Brigade (GMD) and the 117th Space Battalion of the Colorado Army National Guard. I sometimes have to remind people that USASMDC stands for U.S. Army Space AND Missile Defense Command. There is a lot of synergy between the two communities; we need to take advantage of that, especially as resources become more and more constrained.