

Space Wars: A.D. 1990-A.D. 2030

Purview Editor's Note: In the fall of 2001, then-Maj. James R. Meisinger, an Army space operations officer, published an article in *Military Review's* military space issue. Projecting into the future by nine years and 29 years—the decades 2010 and 2030—Meisinger predicted the formation of a Space Force, U.S. Cyber Command and other capabilities now under discussion and development.

Meisinger's prescient article is an excellent companion to *Purview's* October 2018 commentaries on creating a new U.S. Space Command and separate Space Force. It is reprinted from *Military Review*, November-December 2001.

A highly skilled, knowledgeable and respected space practitioner, Col. Meisinger was commander of the 1st Space Brigade in the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command, and chief of the Space Division in the Headquarters Department of the Army Strategy, Plans and Policy directorate. He passed away in July 2017.

By Maj. James R. Meisinger

In the last half of the 20th century, the rate of technological progress went nonlinear. Political, economic and social change went from sporadic to constant, and a new era—the Transformation Age—was christened. However, the rift has widened between those who have prospered and those who have not. The world now faces a new definition of war. Wars will be shorter and have limited objectives, but they will be more violent. In the spirit of the new definition of warfare, I offer the following scenario.

A.D. 2030

I just got off the phone with my son, an anti-satellite platoon leader in the U.S. Space Corps. He called to tell me about recent action in the conflict in central Asia. To be quite honest, I found his account hard to follow. As I get older, it is harder for me to understand warfare.

When I was commissioned in the 1980s, the world was so much simpler. We knew who the enemy was, and we knew what to do if he crossed the line. Then someone erased the line.

As I reflect on my years of service, I see that I was a transition figure. My career began in combat arms during the Cold War, continued through the beginning of the U.S. Army's transformation, and ended in space command. I knew as much about space when I was a lieutenant as Billy Mitchell knew about airpower when he was a lieutenant in 1904.

It took warfighters over a quarter of a century and a world war to figure out the basic principles governing air warfare, and it took them almost the same length of time to understand space warfare. Here is how it happened.

A.D. 1990

During Operation Desert Storm in the Persian Gulf War, I often wondered exactly where I was. Company headquarters had a global positioning system (GPS) receiver somewhere in the mortar section, but only the mortar section fire direction center specialist knew

how to use it. He was the ultimate techno-weenie, and the commander always gave him any new toys to play with first.

Once, when I asked the specialist for a pinpoint location, he told me there would not be enough satellites overhead to get a location until later that evening. My exact location did not really matter. In the desert I could wave to adjacent units from anywhere in my platoon sector, and I could see farther than I could shoot with any of my organic weapons.

If I called for fire, I could be 500 meters off and still adjust onto the target quickly. The 1:100,000-scale map in my pocket had a contour line every 50 kilometers or so. Platoon graphics were about the size of my fingernail at that scale.

Once when visiting the battalion tactical operations center, I was surprised to see a small satellite radio antennae. The battalion signal officer (SIGO) and a noncommissioned officer (NCO) were huddled over it, trying to get it to work. The SIGO said it did not matter if it worked or not; they did not need satellite communications anyway—maybe a brigade or division did, but not a battalion.

I learned all about Scud launches and frequently participated in launch-reaction drills. I had no idea how warnings got to my company sector. I wondered how many seconds of warning I would get in the event of an actual launch. My company commander did not know either, but thought it was at least a few minutes.

During an intelligence briefing, the battalion S2 passed around some pictures of potential target areas. The pictures were stamped SECRET. The captain explained that these were satellite photographs and could not be shown to allies. He also said to refer to them as images rather than photographs and that no one could have copies.

A.D. 2010

As the director of Space Operations on the Central Command (CENTCOM) staff, I again found myself in the Middle East. I was visiting the commander of U.S. peacekeeping forces in the Israeli theater of operations.

I was there to ensure the general staff was getting all the space products and support it needed. The commanding general was glad to see me and wasted no time in telling me his concerns. He specifically asked me to look at the missile warning system and the computer network defenses.

The senior Space Forces officer, an Army lieutenant colonel (LTC), had been a Space Forces officer since being promoted to major. His cell consisted of one space operations (functional area (FA) 40) major, three space operations captains and four FA 40-series NCOs.

The captains were new to space, having been assessed as Space Forces officers under a new process borrowed from the acquisition corps. Space Forces operations had broadened so much that the Army was considering moving to the branch-detail concept to begin building space experts even earlier in their careers. I hoped branch-detail officers would be able to keep their muddy boots foundation.

The LTC briefed me on the situation. Positioning, navigation and timing (PNT) was not a problem. The GPS satellite constellation was still healthy, and the availability of other PNT assets added considerable redundancy. The receivers could process signals from multiple

systems and were small enough to be worn on one's wrist. Every key leader could determine at any moment his position within 20 meters. And, without having to synchronize his watch, he knew what time it was to the exact second.

Once diplomatic hurdles were cleared, fiber optic lines were to be installed, possibly within 24 months. Until then, the force was using the venerable mobile subscriber equipment system and the single-channel ground and airborne radio system for most of its communications.

Key officers were issued global-access voice/data cell phones. The phones were small and rugged, but Department of Defense (DOD) users could easily push the system to capacity with high-bandwidth demands. The space section was working communication disruption contingencies for the upcoming solar max. However, satellites were much tougher than they used to be, so it was low priority.

The Space Forces control officer then briefed me on the command's space control operations. He and his NCO did not usually participate in space control missions. They were the space forward observers responsible for calls for fire. From their workstations they could contact any space control operator and request a mission. U.S. Space Command (USSPACECOM) performed as the space fire direction center, clearing most fires or gaining clearance from the National Command Authorities and sending the mission to the firing unit.

The computer network operations (CNO) officer, who had a master's degree in computer science, was a natural at his job. He briefed the network's intelligence preparation of the battlefield and gave a full rundown of the defenses in place throughout the command. I thought he was a little too eager to mix it up with the enemy, as junior officers often are. I tried to impress on him the significance of a network "shot fired in anger" despite the fact that there were no bloodshed or graphic television images.

I was somewhat familiar with the array of offensive weapons, but I did not feel comfortable with my knowledge of CNO. Congress was on the verge of creating a new CNO unified command. CNO had grown from a small joint task force to a huge national effort, and the commander in chief (CINC) of space operations (CINCSPACE) was ready to spin it off.

The team's missile warning officer described the linkages between CENTCOM missile warning assets and command posts in theater. There were no hardwire linkages from the CENTCOM missile-warning element to task force headquarters, but broadcast messages, coupled with ground-based radar enhancements, were quite reliable. Each soldier in the theater carried a missile warning pager, which considerably shortened the warning time. The missile warning officer suspected the general's discomfort arose from some of the test results of the pager system. There were always a few soldiers who were not carrying their pagers, who forgot to turn them on, or whose pagers had dead batteries.

The final brief was from the noncommissioned officer in charge (NCOIC), who also headed the team's imagery production. Imagery production had changed dramatically in the last 10 years. The latest software automatically searched every imagery database in DOD and automatically tabulated the "collects" available for a specified time in the future. All the NCOIC need do was enter search criteria, and within a few seconds, thumbnails of every image—some only 10 minutes old—would appear. High-quality images could be printed in less than two minutes.

In an outbrief with the commanding general, I suggested that the pager-system problem could be one of leadership and training rather than being solely equipment related. I assured him that the CNO officer's enthusiasm for offensive operations had not hurt defensive preparations, which were up to doctrinal standard. He asked me to work with the CENTCOM staff to determine how to exercise computer-network defenses without disrupting real-world operations.

On the flight back to MacDill Air Force Base, I realized that I would probably never return to Southwest Asia. My thoughts drifted back to my days as a lieutenant during the Cold War. Things had turned out differently than I had expected. What would the world be like in another 20 years?

A.D. 2030

My son always listens politely to my stories of the Army's good old days. During those days, lieutenants carried laminated paper maps and magnetic compasses and talked on radios so heavy another soldier had to carry them. Today, he told me he would have appreciated such simple tools of war. He is on his second job in the U.S. Space Corps, which supports the U.S. Air Force in the "Space Littoral."

The United States had resisted the temptation to weaponize space until China surprised the world by employing a space-based laser against a terrorist missile headed toward Beijing. China's action broke the dike of public opinion, and the United States released the flood of its technological and industrial might to produce an amazing series of offensive and defensive weapons.

My son's first assignment had been to a microsat fleet control unit. The boring shift work made him long for the type of adventures I had always described. He wanted to see the effects of his actions with his own eyes instead of on a screen or holograph.

His career had gone well. He had applied to the elite 1st Space Composite Wing, which was composed of one squadron of space planes with space-to-space and space-to-ground capability, one squadron of weather controllers and one squadron of ground-to-space weapons. Active combat in space and from space was no longer unusual.

On his last operation, his unit had flown a transport plane to Antarctica. His platoon's mission: to conduct a space ambush against "Molniya" orbiting satellites while they were in low orbit over the South Pole. To succeed, his platoon had to temporarily cripple communications with mobile launch units spread across the Asian continent.

Every member of my son's platoon carries equipment with which to communicate worldwide by voice and data, to collect intelligence, to compute data and to maintain nearly perfect situational awareness (SA). All communications devices are completely secure and unjammable. However, top minds commanding top dollars are working hard to develop technology that could intercept and disrupt such messages. CINCCNO and CINCSPACE operate continuously, keeping regional CINCs informed but often after the fact.

I had spent my entire career chasing the "perfect SA" only to see it happen after I had retired. My son tries to explain how decisions are just as hard to make now despite the fact that commanders know the location of every friendly and most enemy units. Enemy intentions remain unknowable, even when it is possible to have a fairly accurate picture of unit locations

and movements, when it is possible to eavesdrop at will on enemy communications, and when it is possible to read enemy plans almost as soon as they are written. If the enemy reacted logically and there was no chaos, the mission would be easy. But humans are not logical, and battlefields always have friction.

My son also can tap directly into spaceborne reconnaissance assets and “sense” any part of the world in real time across the electromagnetic spectrum or by radar. Requesting and tasking are things of the past. If clouds block an area, the weather control squadron can fix it. Unfortunately, deception efforts have also become much more creative.

Although the missile versus missile defense arms race cost nearly a trillion dollars, the United States can now disable ballistic and cruise missiles at any time from seconds after launch to seconds before impact. A group of engineers at one of the country’s most prestigious institutes of technology is working on a space weapon that could electronically hijack a cruise missile in flight and redirect it. But there are no guarantees, and the cost of a single failure is dramatic.

The United States used a missile “defense in depth” with reconnaissance, warning and active defenses that included many different weapons systems. The principles of war still applied.