

# Burnside's Bridge and Lessons Learned for Program Management

*Joe Moschler* ■ *Jim Weitzner*





For all sad words of tongue and pen, the saddest are these, 'It might have been.'" This well-known line from the poem "Maud Muller" by John Greenleaf Whittier expresses the sentiment of each of us at some point in our lives. "What might have been," had we just taken a risk or made a different decision when an opportunity presented itself. Although we can-

not change the past, we can learn from the lessons of others. The challenge then is seeing how these lessons apply to our current situation.

Instances abound where individuals have become so focused on implementing a specific tactic, they forget the overarching strategy; or they become so enthralled with the elegance of a particular strategy, they lose the opportunity to achieve the ultimate objective. The January-February 2007 edition of the *Defense AT&L* included an article titled “Learning Program Management on the Battlefield at Gettysburg,” by Dr. Owen Gadeken, who used the “learning from experience” concept to apply the lessons learned from the Battle of Gettysburg to program management. Similarly, the intent of this article is to provide some lessons learned from another seminal battle during the American Civil War. In this case, we recount portions of the Battle of Antietam and attempt to show how these lessons apply to current-day acquisition.

### **Factors Contributing to the Failure to Achieve a Decisive Outcome at Antietam**

Some historians feel that the Union lost a golden opportunity at Antietam to bring the Civil War to a speedy conclusion with an overwhelming Union victory; after all, the Union Army had the advantage of having the Confederates’ battle plans and a vast superiority in numbers. However, events conspired to turn the battle results into essentially a draw. Although hindsight is 20/20, we cannot accurately predict all of the impacts of a changed input; therefore, instead of dwelling on “what might have been,” we will focus on what we can learn from the events that did transpire during the battle, particularly during the phase known as “Burnside’s Bridge.”

In September 1862, the Confederate Army of Northern Virginia, under the command of General Robert E. Lee, went on the offensive and invaded Maryland, advancing from the western part of the state eastward toward Washington, D.C. The Union Army of the Potomac, under General George B. McClellan, having the advantage of knowing the Confederate Army’s plans, was brought into a position to be able to block the Confederate advance near the town of Sharpsburg, Md., on Sept. 15, 1862. In the interim, before the ensuing battle on Sept. 17, the Confederate Army took advantage of the time to develop a defensive position, in part along Antietam Creek.

McClellan’s battle strategy called for a coordinated attack on the morning of Sept. 17 along the Confederate right and left flanks, which, if successful, would cause a depletion of the Confederate center due to reinforcement of the flanks, opening the way for a frontal push designed to completely engulf the Confederate forces. This strategy was not implemented, however, due in part to a failure to adequately communicate this strategy and also because of conflicting orders issued to McClellan’s subordinate generals. His subordinate commanders only received orders for the forces under their command, not the general orders describing the entire battle plan. The rolling terrain in the battlefield made it difficult for his com-

manders to monitor events outside their areas of operations. Furthermore, the location of McClellan’s headquarters—more than a mile to the rear of the battle—limited his ability to exercise control of his separate corps.

Thus, instead of being fought as a coordinated Union attack, the Battle of Antietam was fought as three separate phases, progressing geographically as well as chronologically, from the Confederate left to the Confederate right. In the morning, the battle was waged on the Confederate left in what is known as the Battle of the Cornfield. By midday, the focus had shifted to the Confederate center, also known as the Battle of the Sunken Road, or after the battle, Bloody Lane. During the afternoon, the battle was primarily waged along the Confederate right flank at and around a location now known as Burnside’s Bridge.

General Ambrose Burnside’s orders were to cross Rohrbach’s Bridge (now Burnside’s Bridge) over Antietam Creek and flank the Confederate right, which had assumed a defensive position on a bluff overlooking Antietam Creek and the bridge. It took several advances with heavy casualties in an attempt to cross the bridge before a local ford was found and the creek was successfully crossed, all while under fire. In all, between 6 and 7 hours were spent in getting the Union left into a flanking position. This flanking maneuver was proving successful and driving the Confederate right into a precarious position when Confederate reinforcements arrived from Harper’s Ferry and relieved the pressure. By the end of the day, the two armies remained essentially where they were when the day began, with a combined killed, wounded, and missing of about 25,000 men. On Sept. 18, both armies “licked their wounds” and, that night, the Confederate Army (Army of Northern Virginia) retreated back across the Potomac River with no pursuit by the Union forces.

What caused the 6- to 7-hour delay in getting the flanking maneuver on the Confederate right into place?

- It appears that Burnside became fixated with crossing the bridge as opposed to crossing the creek.
- A lack of adequate reconnaissance and intelligence resulted in failure to locate two nearby fords, which ultimately provided a viable option to crossing the bridge. This resulted in decisions being made without including valuable information—information that should have been made available—in Burnside’s battle strategy.
- A lack of a clear understanding by McClellan’s subordinates of the bigger picture caused the planned strategy not to be implemented.
- The lack of having a common vision for the battle was further complicated by a lack of effective and timely communication of orders.

Unlike World War II, in which initiative by GIs was often credited with helping turn the tide of battle, during the Civil War, battlefield initiative by subordinate officers in the Union Army was actively discouraged. This rigid hierarchical chain of command prevented initiative by lower-tiered officers. Because of

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the close proximity of Burnside to his brigade commanders, most of his brigadier generals were hesitant to take initiative or make command decisions without direct authorization. This effectively resulted in his brigade commanders' role being reduced to becoming conduits of communications and commands rather than dynamic decision makers adjusting to the ebb and flow of an ongoing battle.

### **Antietam Mistakes Repeated in Acquisition Programs**

Based on our analysis of these events during the Battle of Antietam, what lessons can we learn and, in turn, apply to program management today? Are they relevant to program management? Let us look at each factor individually and how it may apply to a program today.

### **Don't focus on a current issue to the detriment of the overall program.**

Similar to what occurred with Burnside and his dogmatic insistence on taking the bridge, program managers can become fixated and lose sight of what's important in their programs. This often is an insidious process, and program leadership may be unaware it is taking place. However, this is not always the case. For instance, a program manager may decide to reduce the program's training budget or the number of spares purchased because of an unexpected budget cut. More often than not, such actions will have far-reaching consequences that negatively affect the program. By focusing on the immediate need, the program manager may make a short-sighted decision leading to future problems. Take time to adequately explore the future consequences of decisions and their impact on the overall program goals. The authors concede that this may be a best-case scenario and that budget realities may dictate cuts with the knowledge of the downstream negative effects.

Another way that over-focusing may be manifested is when an organization becomes so engrossed in processes and procedures that the overall program goals are no longer deemed important. The Department of Defense has embraced and implemented many management techniques over the years to improve efficiencies and conserve resources. Total Quality

Management and Leadership, Lean Six Sigma, Management by Objectives, and ISO 9000/9001 are examples of programs implemented with varying levels of success. The point of this article is not to discuss the merits and pitfalls of these methodologies but to simply point out that how they are applied and used in an organization is critical. When the focus on the process becomes the priority of the organization, then the mission or program objective will suffer. The following example from a well-known National Aeronautics and Space Administration (NASA) program demonstrates how this may occur. Admittedly, this is not a Department of Defense program, but it serves as a relevant illustration for the purposes of this article.

On Feb. 1, 2003, the space shuttle *Columbia* was lost during re-entry into the earth's atmosphere. The Columbia Accident Investigation Board (CAIB) was convened to determine the cause of the disaster and document the lessons learned. One finding in the report was that over-reliance on management and quality programs played a role. For example, the NASA and United Space Alliance employees were mandated to use ISO-9000/9001 sampling processes to verify that each step of the maintenance processes was followed during space shuttle operations. Unfortunately, this approach assumed that ensuring the checklist steps were completed would, in turn, ensure a safe and quality product. As quoted in the CAIB report, "While the ISO-9000/9001 quality system is appropriate for many processes and organizations, it was not for the highly complex space shuttle operation, which required a more "hands on" approach."

### **Communicate the vision and stress what is important.**

The failure of McClellan to adequately communicate his overall battle strategy to his generals at the Battle of Antietam clearly impacted the battle's outcome. In acquisition, program leadership must be clear in stating their vision. They must emphasize what is important and not only say it, but make decisions to support their words. If leaders provide lip service to safety and quality but emphasize schedule and staying on budget, the workers in the organization will quickly realize what is important.

Using another NASA example to illustrate, the Apollo space program suffered a tragic accident in early 1967. While the Apollo 1 spacecraft was undergoing preparations for the first manned flight, astronauts Gus Grissom, Ed White, and Roger Chaffee were killed when a fire erupted in the cabin of the spacecraft. What led to this catastrophic failure? Many factors were blamed, but a significant one was the pressure to meet the launch schedule. NASA was pressing to launch a manned flight, despite many developmental problems and test failures. As author John Barbour writes in *Footprints on the Moon*, the agency started taking shortcuts and eliminating tests to preserve its schedule. The focus had become the “launch schedule” instead of developing and deploying a safe and quality-built space vehicle to reach the moon. Beyond the immeasurable cost of three lives, NASA spent 2 years and millions of additional dollars to recover and get back on course for a moon landing using a totally redesigned Apollo capsule.

### ***Acquire the information you need to make fact-based decisions.***

Program managers are usually not required to make decisions amidst of life-and-death events and thus should gather as much intelligence and data as possible to make a decision. Burnside’s failure to reconnoiter the area around the bridge over Antietam Creek for other suitable crossings drove him to focus on the bridge as the primary route across the creek. He did not take advantage of the possible options available to him. One technique or option for the program managers of today is to seek help from outside the program. This additional data may provide insights to assist in decision making. Don’t be afraid to ask for independent reviews to obtain objective feedback on your program. Seeking out critical looks at your program may sound like you are asking for trouble, but an assessment of your program by an objective, unbiased party is invaluable.

Such a review may cause delays to your program. But in some cases, it may help make the program successful. During the year 2000, there were two deadly crashes of the V-22 Tilt-rotor Osprey as the program was completing initial operational testing and preparing for its Milestone III decision to enter full-rate production. In the ensuing months, the aircraft was grounded, and a “Blue Ribbon Panel” was convened to take a critical look at the program. The panel was made up of a diverse group of experts from industry, academia, the military services, and NASA to help determine the way forward for the program. A comprehensive review of the program resulted in several redesigns to be implemented along with a vastly expanded flight test effort. The aircraft completed its operational test in 2005 and is now in operational service with the Marine Corps and the Air Force. Although the program had its growing pains, the V-22 is fielded and has served successfully in Iraq and Afghanistan, as well as flown humanitarian missions in Haiti. The V-22 example is a case wherein an “independent review” provided beneficial outcomes to the program and contributed to its success. Although this action was reactive rather than proactive, gather-

ing data to make successful decisions is essential both on the battlefield and in program management.

### ***The old adage of leadership—Communicate, Communicate, Communicate—applies.***

There is no such thing as too much communication in a project. Open, frequent communication is essential to your program. This means vertical communication (up and down the chain), horizontal communication (within the Integrated Product Teams [IPTs] or teams within the organization), and external communication (to agencies outside the organization). This lesson learned was evident from the Battle of Antietam. The limited communication of McClellan’s battle plans to his commanding generals before and during the battle hampered the Union’s efforts by disrupting the planned coordinated attacks on Lee’s forces.

### ***Empower your workforce to make decisions and encourage innovation.***

Be open to new ideas and encourage creativity in your organization. Respect their judgment and ideas for problem solving. This is something that leadership must champion and “walk the talk.” At Antietam, Burnside’s close physical proximity to his brigade commanders on the battlefield stifled their willingness to take the initiative on the battlefield and be leaders. But more importantly, his refusal to relinquish control and give them authority to act independently diminished his and their effectiveness on the battlefield. The lack of empowerment to his commanders exacerbated the slow movement of the troops across the creek and prevented his forces from being a significant factor against the Confederate Army.

## **Summary**

Hopefully, this article has provided some insights from past human experiences and events that can be applied to current challenges in acquisition. Otherwise, as the well-known quote by George Santayana states, “Those who cannot remember the past are condemned to repeat it.” We can all learn from the mistakes of others, as well as our own. If indeed we study these lessons and apply them appropriately, we will have a distinct advantage in tackling the challenges that are sure to lie ahead. We hope this article has provided some simple guidelines to employ as a way to avoid some common pitfalls in defense acquisition (and life in general).

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**Moschler** is a professor of systems acquisition at the DAU Mid-Atlantic Region. He teaches systems engineering and program management courses. Prior to joining the DAU faculty, Moschler worked for the U.S. Navy as both an aerospace and systems engineer. He served in the U.S. Air Force for 22 years in operational and acquisition assignments. **Weitzner** is a professor of acquisition management, also at the DAU Mid-Atlantic Region, teaching acquisition, standardization, and production, quality, and manufacturing courses. Prior to joining DAU, he was an instructor for standardization and quality courses at the U.S. Army Logistics Management College. The authors welcome comments and questions and can be contacted at [joe.moschler@dau.mil](mailto:joe.moschler@dau.mil) and [james.weitzner@dau.mil](mailto:james.weitzner@dau.mil).