Agility in the Operational Environment—The Value of Army Science Advisors (51S) to Service and Combatant Commanders

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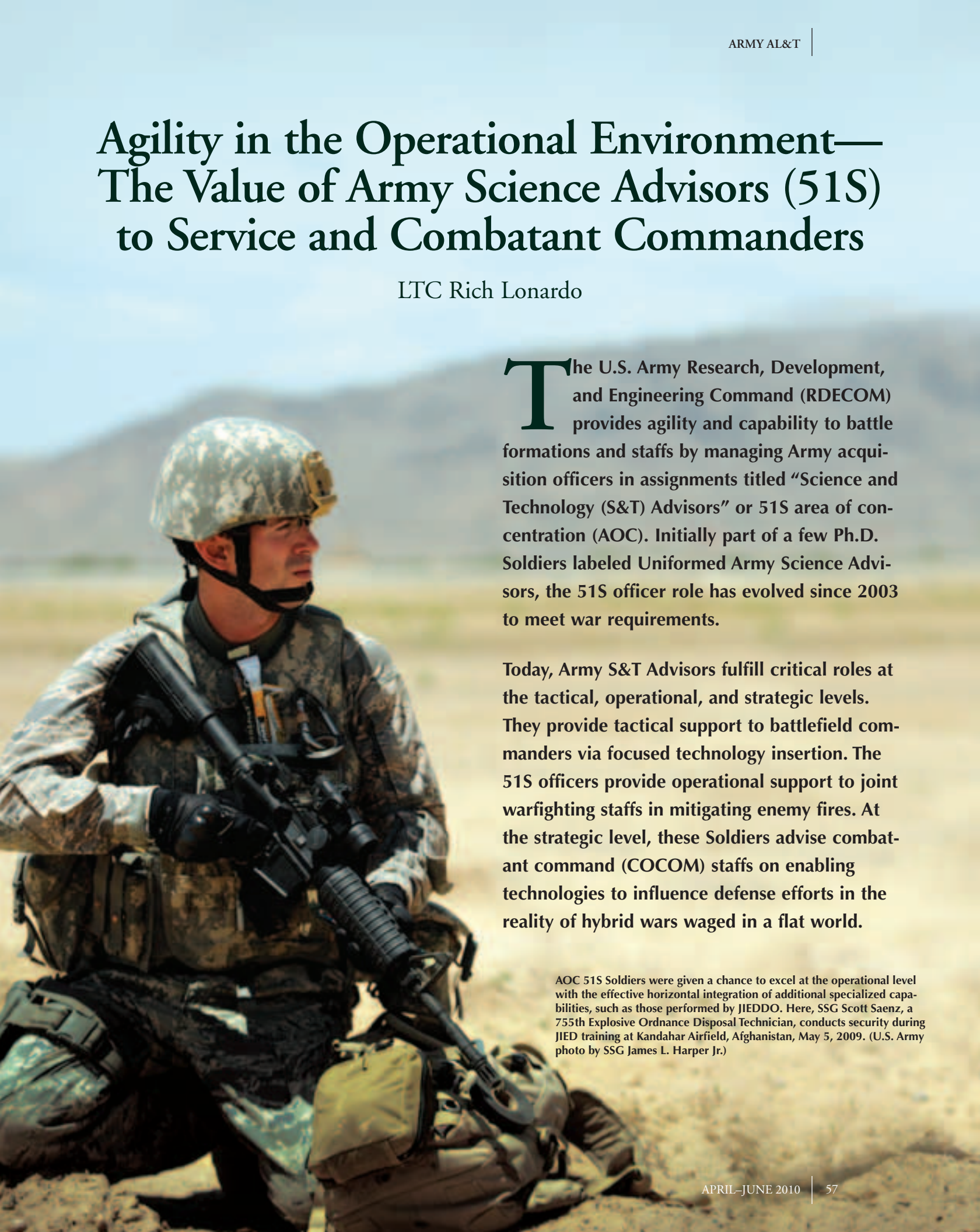

The U.S. Army Research, Development, and Engineering Command (RDECOM) provides agility and capability to battle formations and staffs by managing Army acquisition officers in assignments titled "Science and Technology (S&T) Advisors" or 51S area of concentration (AOC). Initially part of a few Ph.D. Soldiers labeled Uniformed Army Science Advisors, the 51S officer role has evolved since 2003 to meet war requirements.

Today, Army S&T Advisors fulfill critical roles at the tactical, operational, and strategic levels. They provide tactical support to battlefield commanders via focused technology insertion. The 51S officers provide operational support to joint warfighting staffs in mitigating enemy fires. At the strategic level, these Soldiers advise combatant command (COCOM) staffs on enabling technologies to influence defense efforts in the reality of hybrid wars waged in a flat world.

AOC 51S Soldiers were given a chance to excel at the operational level with the effective horizontal integration of additional specialized capabilities, such as those performed by JIEDDO. Here, SSG Scott Saenz, a 755th Explosive Ordnance Disposal Technician, conducts security during JIED training at Kandahar Airfield, Afghanistan, May 5, 2009. (U.S. Army photo by SSG James L. Harper Jr.)

Priority Mission #1—Maintaining Customer Confidence in the Tactical Fight

Science advisors are a small cog in the great materiel developer community of our Nation's military. This community includes unsung heroes both downrange and stateside. Examples include Force Modernization Officers, Rapid Equipping Force Soldiers, Contracting Officers (51C), or Program Management Soldiers (51A). The team also includes counterparts at the Army and joint staff levels, who work tirelessly to mitigate the disruptive effects of emerging needs on budgets and long-term warfighting power.

In my opinion, many 51S officers serve in roles close to the tactical fight. They have formal acquisition education and, thus, bear the moral responsibility to facilitate near-term, immediate technology support in a manner that ensures agile, yet responsible, life-cycle support. Maintaining operational availability of new technologies that a unit has wrapped its tactics around is a serious responsibility.

A great officer professional development discussion should include what I would collectively call the Tactical Wheeled Vehicle Add-on Armor program as a case study. As the first military assistant project manager (PM) for this effort, I witnessed the intrinsic value of 51S officers, such as LTC Dan Rusin, one of many volunteers operating downrange to firm up initial U.S. Army Research Laboratory prototypes in the operational environment. Because of that critical interface with the customer, the follow-on original equipment manufacturer management by the acquisition community and the U.S. Army Materiel Command was more rapidly focused. And many readers know how significant and challenging that program became. The Add-on Armor effort is by no means a perfect program, but it represents a significant milestone for our relationship with our customer; and 51S officers played a pivotal role in this program.

Operational Role in Mitigating Enemy Fires

In 2003, the enemy thrust a technology into the war with improvised explosive devices (IEDs). Consequently, the Joint IED Defeat Organization (JIEDDO) was borne, along with multiple intelligence and materiel support efforts to counter the threat. A review of Joint Manning Documents (JMDs) may not include these additional special staffs at the forces or corps levels; thus, the effective horizontal integration of such capabilities provided 51S officers a chance to excel at the operational level. In 2004, RDECOM leaders made a decision to embed a senior acquisition officer on the warfighting staff in Iraq to facilitate horizontal materiel integration, such as prioritized IED solutions.

In addition to 51S officers assigned to Field Assistance S&T (FAST) teams working at the division level and below, RDECOM provides another enduring commitment via the Science, Technology, and Acquisition Corps Advisor (STACA) officer to advise senior staffs in Iraq and Afghanistan. These experienced colonels organize the materiel developer response to mitigate enemy fires. Furthermore, these officers integrate rigor to the difficult process of vetting and merging urgent operational needs with long-term service component goals. I believe the value of these positions should merit consideration as additions to JMDs. Moreover, a highly integrated joint staff can effectively leverage the 51S officer to lead "materiel red-teaming cells" by more closely combining intelligence products and coalition versus enemy trends with planned technical materiel solution integrations. The goal: vector the enemy in directions the combatant commander desires.

Analysis of the SOUTHCOM response to the January 2010 Haiti earthquake disaster reveals additional potential roles for 51S officers in humanitarian relief operations. Here, a SOUTHCOM assessment team boards a C-130 Hercules aircraft en route to Haiti to support U.S. relief efforts. (Photo by TSgt Santita Mitchell, SOUTHCOM Public Affairs.)

Enabling Strategic Influence for Hybrid Wars in a Flat World

The reality of a connected world means a natural disaster in one hemisphere can coalesce into a strategic jihad message in another hemisphere by non-state actors. The geographic structure of COCOMs is well suited to address and respond to these threats as our national command authority deems appropriate. DOD assets often take the initial lead until other responses crystallize. In this scenario, 51S officers provide a critical link from the COCOM staff back to service programs of record (PORs) and provide insight on potential emerging needs that senior commanders will expect Soldiers to bring to the rescue. The 51S is challenged in thoughtfully connecting Joint Urgent Operational Needs Statements to approved Army capabilities and materiel solutions appropriate for a POR.

The U.S. Southern Command (SOUTHCOM) response to the January 2010 Haiti earthquake disaster is a relevant case study. The SOUTHCOM

commander immediately leveraged existing staff plans and appropriate services to ensure security, provide stability, and set the foundational underpinnings for enabling posterity for the Haitian people. A cursory review of the response might include conversations on the use of U.S. Army or U.S. Marine Corps (USMC) security forces, U.S. Air Force logistics, and U.S. Navy medical support to carry out vital roles as directed by the President.

Deeper analysis includes the perspective that 51S officers might add to the discussion. Prior to this earthquake, SOUTHCOM's Science Advisor had leveraged joint staff and Army resources to integrate promising emerging technologies in several relief experiments. Insight on tactics, techniques, and procedures was noted to enable COCOM stability operations. If the Army and RDECOM are linked to these events and value for a program is evident, positive outcomes are possible both for the Army and the COCOM.

An example may be the use of renewable energy to power a small video teleconferencing capability that Army medical teams might employ to leverage a larger remote network of medical care professionals to help in triage, diagnosis, and potential treatment. The power of the network includes reduced security and logistics needs in the operational environment or, in the Haiti case, the disaster site. Just as important is how the commander might transition this capability to others once military forces and their equipment redeploy. The 51S is challenged yet again to help other organizations consider government-off-the-shelf or commercial-off-the-shelf technologies that will help them provide "whole-of-government" enduring low-cost health nodes that non-DOD agencies can leverage over the long run, thus furthering the commander's goal of enabling prosperity.

Combatant commanders fight wars and the services provide trained and ready forces and equipment. Unless acquisition laws change drastically, the key factor to further develop and transition any promising technologies back to Army or service components falls on the shoulders of COCOM 51S officers. They run the trap lines and find the confluence of these joint needs with Army modernization opportunities expressed as new U.S. Army Training and Doctrine Command or Joint Forces Command experimentation efforts or documents, or vetted PM modernization strategies.

Such work benefits the services in future hybrid wars. Commanders include building partner capacity venues as part of their campaign plan. A technology that serves as an immediate need in nation building that might also offer reduced life-cycle costs in ongoing contingency operations via reduced troop consumption and less wear and tear on vehicle fleets and reset costs, is very significant.

For example, many of the technologies employed in Haiti for stability operations may also fit the emerging requirements that service leaders desire for reduced logistics and more efficient mass and energy autonomy of battle formations. This is a current focus area under discussion in the USMC and Army for brigades. Whether it be low-cost and energy-efficient unmanned aircraft systems for force protection, solar-powered water purification, or gray water management technologies, the COCOM 51S officers can advise the COCOM and joint staff on how to best horizontally integrate their needs into what the services envision for their programs. They can also provide the services with lessons learned from these joint experiments. The result of such collaboration can be undervalued because it is achieved in the least disruptive manner by leveraging experienced and networked 51S officers, working real-time in a flat world with their materiel developer counterparts.

Vision

The 51S has evolved from a select few military Ph.D. personnel in special assignments to experienced multifunctional Acquisition Corps officers serving as 51S from division and corps levels and joint warfighting staffs. FAST Soldiers provide agile technology integration in the operational environment. The results have tactical significance and tie us to our warfighters. The 51S officers serving as STACAs on corps staffs help mitigate enemy fires and provide operational opportunities to warfighting staffs. At the COCOM, they can enable combatant commanders' strategic goals. These critical Soldiers should be recognized for the return they offer us in maintaining warfighting capability now and in the future. Continued mentorship and application of supporting processes to enable their interaction with the greater materiel developer community would include appropriate certification, promotion, and command opportunities. Additionally, their insight might offer the foundational underpinnings for similar effort at the Office of the Secretary of Defense level that mimics this horizontal integration occurring in the Army, but appropriate for all services. The end result of good 51S work is efficient and anticipated combat power that provides commanders at all levels the most freedom of maneuver.

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