Chesapeake Chapter
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April 2011

Feature Article

Some Thoughts on Winning

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Lieutenant General and later General George S. Patton, USA, is a familiar name and face to most Americans. What is not so familiar is the important role that systems engineering concepts played in his successful leadership of the Third U.S. Army during the historic 10 months in WWII that began soon after this picture was taken.

To explain this role, we must gain some perspective into the situation. Consider just how many men General Patton commanded on this moderately cool English summer day on June 14, 1944? The Normandy Invasion had just begun on June 6, and the Third US Army was preparing for its own deployment into combat against the German Army.

Figure 1. Flag Day Review June 14, 1944, at Peover Hall, Knutsford , UK

The answer from the official records of the period state that the 3rd Army reported a total strength of 253,352 military personnel. These were organized into fighting divisions and support groups and were further augmented by Army Air Corps Tactical Fighter units.

A systems engineer thinking about this huge enterprise would be expected to wonder: just how does Patton with a staff of approximately 20, organize, train, equip, deploy, support, and control the combat activities in an organization of that size? This is especially true for the U.S Army since the total size of the pre-war army was about 50% of the deployed total in the European theater in 1944-1945.

Where did Patton or his contemporaries learn to effectively create, govern and control such large organizations? It doesn't take a systems engineer to realize that scalability of existing process may not hold up when the numbers grow to this size. The answer was to quickly develop, apply and enforce processes that could enable the organization to perform all its functions in a very standardized and repeatable manner. Obviously, a large organization - military or otherwise - could not survive without clearly documented processes. There was some existing regulation framework from the Army that they had available to assist them however most of this was ad hoc and untested on such a large scale.

The life cycle of an army at war begins with training, and moves to mastering deployment, creating a logistics capability, maneuvering against the enemy, and providing operational support, services such as medical, signaling, graves registration, administration, public affairs and so on.

ISO 15288, the bedrock of current systems engineering practice, when

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mapped into the Third Army's written processes and higher-level Army policy would very likely appear to be completely anticipated. Everything the soldier needed was provided for and staff officers at all levels in the command worked long hours to make sure the system worked as was set down in writing. The Army way was to follow instructions. Obviously, in combat changes and exceptions were made but the interesting thing was that even this was controlled and exceptions led to better rules and figured in compiling many important life saving lessons learned.

Unlike many large corporations, soldiers in Patton's Army felt that higher headquarters knew what was going on and was on top of everything that mattered. One illustration of the power of process in providing a leadership function was Patton's edict that all personnel wear their uniform neckties and leggings at all times in forward combat areas except when in direct contact with the enemy. Fines were levied for violations and the system effectively ensured that ties were worn. A friend some years ago confirmed that he had been fined three times for not wearing his tie while serving under Patton as an Army Captain while engaged in combat actions in North Africa and later in Europe. His anger over this punishment was balanced by his respect for the "West Pointers at Headquarters" who seemed to be one step ahead of events and always seemed to have the combat troops supported and positioned well for action. If I caught the nuance correctly, he did not particularly like West Point graduates but sensed that as a group they were superior performers in staff and command duties. Another friend who served with the Third Army told me that he hated the rules but in time observed that among most soldiers they came to be taken seriously. This might be what we refer to today as a culture of compliance.
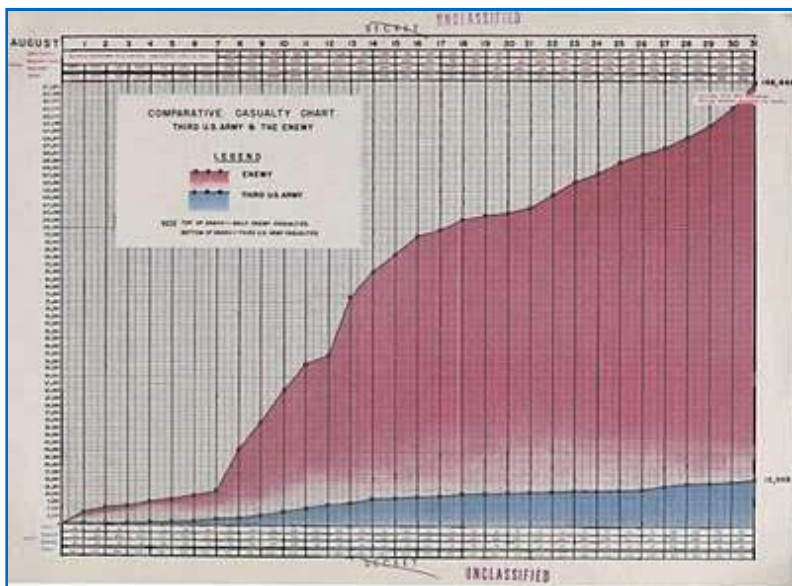

Figure 2. Cumulative Casualties for August 1944. (See Note 1) Click to see larger.

Everyone understood their job and was expected to perform with a minimum of complaint given that death and injury were present in every forward deployment. In Figure 2 are tabulated the casualties for the Third Army over a period of one month. This was a most important metric second only to defeating the enemy. Nothing fully prepared Patton or his staff officers for such responsibility except a period of training in the US prior to deploying to England. Army doctrine, regulations, and technology were inadequate in 1940, and now, four years later, he had made noticeable progress in creating a process driven organization.

Patton in his statements for public consumption called much of what he was doing discipline and surely much of the success of process driven

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organizations involves getting members to follow instructions. Unlike today, the average soldier was not well educated and many had limited ability to read or comprehend beyond what would be expected today of a sixth grade student. Patton's major achievement could be described as getting the officers to do all the systems engineering while he made sure that the men gained confidence in their organization and understood their jobs. There is nothing easy about learning to use weapons, perform tactical movements as a unit or keep everyone fed, sheltered and provided with medical care during combat.

The record is clear on how he approached this. He was unmercifully hard on his officers and demanded that they learn their duties quickly and thoroughly. He was impatient with anyone that slowed down the development of his systems approach and he was quick to reassign anyone who he felt was not committed to or capable of performing good service.

Did the term systems engineering exist in 1944? Not that I have been able to determine. Instead, most if not all the constituents of the art were present and being taught under names like operations research, efficiency studies, and strategic planning. An examination of period writings suggests that many activities that are described today as part of the systems engineering discipline were well understood and applied long before 1944 but were not combined under the comprehensive frameworks we enjoy today. Figure 3 is a report of material losses for August 1944. It is a commendable model for conveying meaningful data. A short inspection will reveal the evidence of closely contested battles between the heavy German Mark VI and US medium tanks. The German's Panzer Tanks (Mark VI in this chart) were not easily defeated and we paid dearly for our light armor and small caliber guns.
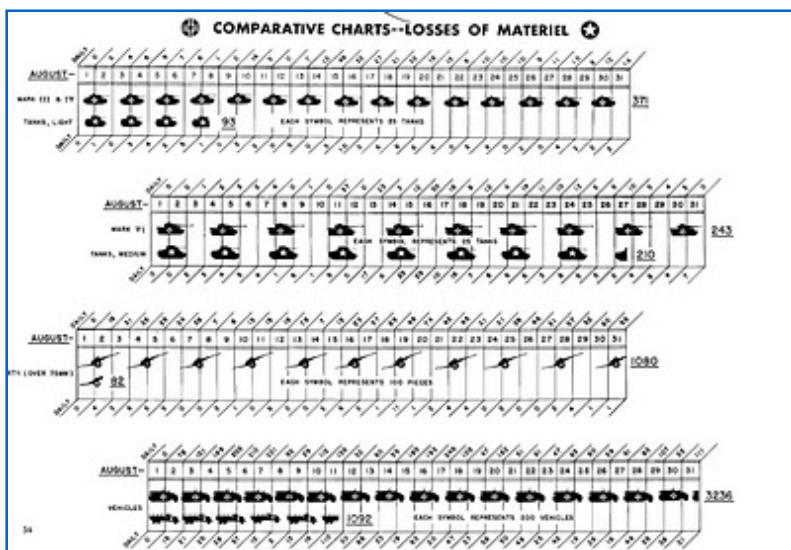

Figure 3. Total Material Losses by Day for August 1944. (See note 1) Click to see larger

How would today's systems engineers hold up to a similar challenge? It is unlikely that we will ever know. The probability of ever fielding such large mechanized forces is very likely a thing of the past. If such a large assembly of combat power were again to be assembled, however, there is no reason to believe that we would not do as well or better after we found a leader with the skills and dedication of General George S. Patton whose legacy and that of the Third Army is preserved in part in Figure 4.
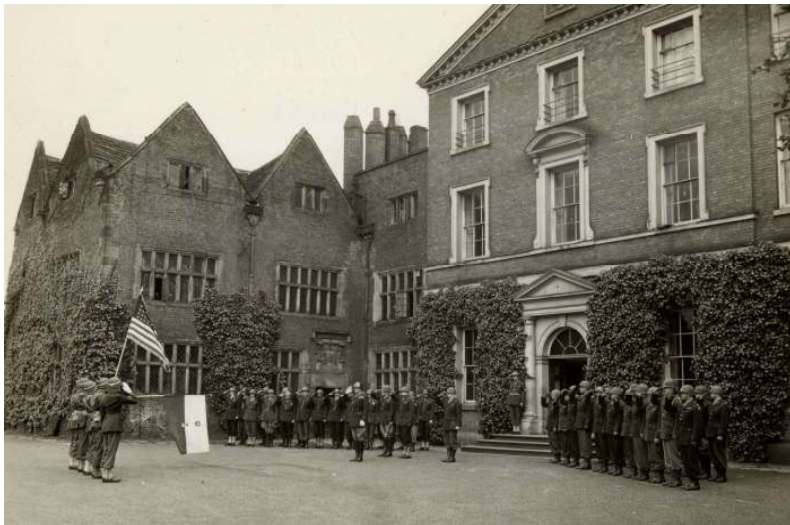
Figure 4. A panorama of The HQ staff of the Third US Army on June 14, 1944 - Patton Salutes the Flag (The flag bearer is my late father-in-law, Major John F. Maloney, USA, Ret.

Note 1: Taken from the After Action Report of the Third U.S. Army, 1 August 1944 – 9 May 1945, page 53. BACM Research/PaperlessArchives.com

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