THE CONCEPT OF MODULARITY AND FORCE MANAGEMENT

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Abstract

The current security and conflict environment and those projected for the future are ones that require the military to deal with constraints on the amount of power, limitations on available forces, financial constraints and limitations on strategic transport required for carrying capabilities in the theater. Under this set of observations on the requirements and constraints of the force, the military should develop a concept of modularity to allow relocating positions and capabilities from a base unit to another and to proportion such positions and capabilities to deploy them within a force assigned to be projected in a theater of operations. This force also must be interchangeable, have the ability to develop and resize to perform tasks and needs are changing.

Modularity is a critical component of the Army's Transformation and the interest concerning the design of modular structures is not a new one. It has been examined and, in some terms, even adopted by several modern Armies in order to meet the changing missions and needs in today's security and conflict environments and those of the envisioned future.

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The Army Strategic Planning Guidance, 2006-2023 (ASPG) repeatedly uses the term “modular” and describes it as a core aspect of the restructure of today’s United States Army. The ASPG suggests that “Modular, capabilities-based forces will better support Combatant Commander requirements by more effectively enabling the delivery of the right Army capabilities at the right place and time.”[1] In the same idea, the 2005 Army Modernization Plan highlights modular forces as a “bold and comprehensive initiative that is intended to provide Army units that are more relevant to the combatant commanders in today’s environment and possess greater versatility in fulfilling the demands of frequent deployments, a wide range of missions, and true joint interdependency.”[2]

Based on previous consideration, the Modularity could be defined as “a methodology of force design, which permits detaching functions and capabilities from a parent unit and tailoring such functions and capabilities for deployment within a force projection force in order to provide the commanders with a force that is interchangeable, expandable and tailorable to meet changing missions and needs.

The concept of modularity should be seen through the lens of three different sets of actors; the planners, the users, and the force developers or sustainers. Each of these communities focus on modularity through a different lens, with different metrics of success and with different challenges.

The Force Management community, the planers, has, perhaps, the greatest challenge with regard to modularity of any of the communities. The first of these significant challenges is in how to pay for the modular force, the second is in how to sustain its essential nature. The trade literature is literally rife with discussion about how the Army can manage to pay for ongoing operations, transformation and modularity all simultaneously. More specifically, as the Army is forced to wean itself from the use of budget, the difficulty will be in how to fund modularity in a relatively flat Army top-line budget.

One reality discovered during the current operations in Iraq and Afghanistan, is how much we learn about what we really need to fight only when we are actually in a fight. As units deploy, the discover new requirements, whether they be a need to counter IEDs or the fact that support units are fighting in ways not imagined previously and for which they are not resourced. These drive a series of actions, including the delivery, in theater, of material responding to Operational Needs Statements. Lessons learned from this in-theater fielding are used to refine modernization plans for follow-on or non-deploying forces.

In general, this type of modernization should have a smaller impact on training and organization than would the activities of a major re-fit, re-equip, re-organize cycle. Nevertheless it will have an impact. Further, it will cause additional 'variance from the norm' as deploying units receive equipment that is not made available to non-deploying units within each cycle.

A warfighter – a user, either receives the modular structures to command and control or exists within one of them. Regarding modularity the military experts suggests that the Army expects to gain improvements in three key capabilities by utilizing the modular force design.

The first is in the area of deployability, the modularity facilitating the packing and rapid deployment of the force. From the strict perspective of numbers of vehicles and people moved, the modular design refers to getting a military structure somewhere in a set amount of time, and the lift that will require, than it is about what that structure is capable of doing upon its arrival.

From a user's point of view, however, the integrated design of the basic structure is a clear aid to deployability. In deploying a current force, the first thing that has to occur is to organize the respective force in order to be able to carry out military actions. Attaching, detaching, marrying up units and integrating them are all distracters from, and contribute to the lengthening of, a deployment process. Given that, at least the basic structure (brigade/battalion)

should be mostly self contained to greatly ease the coordination tasks of deployment.

Close combat and close combat support units will not necessarily be deployed totally. Rather, they will be force packaged to provide the tailored support necessary for the specific design of the deploying combat force mix. Military experts' perspective seems to be that based on the modular design it will be able to deploy a smaller, more tailored, and therefore less lift-demanding force to achieve the same level of effort or capability.

The second area in which the Army expects to gain improvements is in the area of lethality. In this area it is hard, at times, to distinguish between increases in lethality that can be attributed to unit design and those that can be attributed to unit equipment.

Modularity is occurring hand-in-hand with modernization. According to some specialists the increase in lethality will be due to increased information, surveillance and reconnaissance capabilities and better linkages to joint fires. Other points of view claim that lethality is given by "strategic speed" that the Army is attempting to improve it by modularity and transformation. However, strategic Speed is largely irrelevant in irregular warfare. While the unit's lethality may be relevant in combat operations against enemy armored and infantry formations, some believe that this type of lethality is not a major consideration in stability and security operations, and in the conduct of a counterinsurgency campaign – the type of campaigns being waged in Iraq and Afghanistan.

Finally, as a result of modularity, the Army should achieve increases in "Jointness". With regard to the modular structures themselves, it is difficult to separate design from equipment. However in achieving the goal of Jointness the redesign of the brigade headquarters and division headquarters takes a central role in the modularity process. In current-force brigade and division headquarters it has been long assumed that augmentation could provide the

ability for the HQ to function both within the Joint community and as a Joint HQ. But augmentation was in the form of ad hoc 'add-ons' to the force. The new modular HQ designs will be designed to be "Joint Capable" both in their manning and in their equipping. This is a change in design philosophy that more closely represents the recent historical record of Army operations and the Army's desire to be more joint capable and expeditionary.

Within the Army, the Modularity should be linked to the Army Force Generation Model. From a planner's perspective this would seem to be the crucial aspect of modularity. Understanding what forces will be available, when, at what state of readiness, and with what capabilities is the key of planning process. Modularity, tied to the Army Force Generation, provides these planners with the same basic planning structure.

The purpose of force generation could be described as to provide commanders and authorities with steady state supply of modular, trained, ready, cohesive and rapidly deployable Army forces with capabilities to meet requirements for continuous full-spectrum operations.

Conceptually, in the design of Romanian Army there is a basic "tactical" building block. The basic building block is represented by Brigade, and all other supporting arms could come in any shape or size. Divisions are merely a headquarters to which more than one brigade (itself consisting of more than one battalion) could be attached.

The basic concept behind this design is simple; a Headquarters has a certain span of control, generally expressed in terms of the number of brigades for which it could provide command, control, and support. The division also had a certain availability of, increasingly standardized, organic assets with which it could reinforce the efforts of subordinate units. Formations with similar functional tasks are designed with similar functional designs. In some designs the basic brigade is incapable of independent action without significant augmentation from division assets. The reality is that for a Brigade to fight, it

has to be augmented with artillery, logistics, and other support from the Division. The tendency is to make the Brigades relatively self-contained entities, including organic Air Defense, Military Intelligence, Support and Transportation assets.

In other words, although the idea is to create a system of interchangeable parts that can be assembled based on organic capabilities and thereby provide a tailored force package, the capabilities to be modularized are primarily the combat support and combat service support activities that occurred at division levels. This could be done in many different ways, mostly differing in whether a unit would contain a variety of small capabilities and deploy as a unit, or whether is would contain a single set of capabilities and deploy individual detachments each capable of delivering a small quantity of that capability to a supported unit.

Based on this kind of thinking, a whole host of studies and analysis should be conducted, attempting to apply modular principles to all types of tactical organizations. What characterizes these studies is their attempt to show how supporting units can best be modularly tailored to provide support to combat units – brigades and divisions.

Concerning the concept of modularity there are two ideas. The first idea says that modularity is designed to make units interchangeable and tailorable, based on a need to enhance “the Army's ability to rapidly respond to a wide range of global contingencies with a force possessing needed functions and capabilities, while deploying a minimum of troops and equipment. The second one is to make the units self-contained and sustainable based on the need to provide combatant commanders with lethal, agile and versatile forces, with boots on the ground, ready-to-fight-on-arrival characteristics and endurance for sustained land combat. Further, today, it is almost impossible to talk about Army modularity without talking about Army Force Generation…the need to maintain a sustainable long-term rotation of forces in Iraq and Afghanistan. It is this need

for a sustainable rotation policy -- a force generation model -- which can be seen as one primary driver behind modularity. There is some debate about the driving force, with many arguing that it is driven by a force generation/rotation methodology and others that it is merely a fundamental redesign of our tactical and operational formations, upon which, perhaps, the ARFORGEN was based.

Conclusion

Modularity should be considered one component of the overall Army efforts at Transformation and a modular force is clearly a valid and perhaps even necessary choice for our Army at this time. This is true especially as we are able to pack more capability into smaller units, and to leverage our increases in command and control abilities to allow for more dispersed and independent operations.

As such, it will be pulled into the eddies of decisions and processes that surround it. The financing and fielding of future structures, management of the of the Army Force Generation model across time and across components, not to mention responding to changes in the strategic environment and the demands that that will place on our units and our structure, will all have secondary impacts on the modular force. What will be needed is a sense of discipline in funding, acquisition, fielding, and training that ensures that the modules remain relatively alike in form and function.

REFERENCES

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