

A French approach

to the command and control of future land forces

This article, published in the doctrine magazine, reflects the current status of Army studies on command and control. The paper describes the prospects for the improvement of command and control rather than depicting the current situation. However this article does not set out the exact wording of a validated concept about the future command function.

Drawing on the 30 year³ long-term plan and on the current thoughts within the Army about future operations and command, it aims at laying foundations for thoughts to help develop the concept.

This thinking process is to evolve and to get enriched with those findings from the technical/operational prospective study “future command TOP⁴”, expected by the year 2005, and thanks to a large contribution from many within and out of the Army.

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“Great achievements at war are due to the command structure”. This quotation of Marshal FOCH reminds us that, at the end of the day, victory depends, in the future as it did in the past, on the quality of the interaction of the command function with the operational commitment of our forces.

Three main intermingling features that should be considered by the armed forces to acquire the proper operational capabilities characterize the early 21st Century :

- The probability of asymmetrical conflicts in many fields of action that make the operational situations more difficult to assess and handle ;



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- The pressing need for reconciling the weapons systems’ capabilities with economical resources and the concern of saving human lives ;
- And especially the opportunity for media control, a decisive factor for operational superiority in future operations.

Controlling information is not an end in itself. Even though it is possible, not to say necessary, in order to catch the full complexity of operational situations. A sound sharing of information offers the possibility of sharing the action with all involved parties and to get the best results.

Digitization and its operational capabilities will impact all functions. The related weapons systems will have to be converted. For command and control the change will mainly apply to the decision making process, to task organization, to command systems, and to the organization of decision centers. Thoughts about command and control should be considered from a global approach beyond the strict limits of the land forces issue.

This reasoning process should ensure finding not only sound solutions for some parts of an operational level, but solutions consistent with all other parts.

In the end, the command function, which achieves synergy between all the other functions, will obviously retain a key role :

Its effectiveness will be shown by ensuring operational initiative through effects' selection and achievement.

For that purpose, the command function will have to show more federal. In this sense, with a view to achieving a set of effects and depending on the nature and on the level of a possible cooperation, it will have to ensure the command and control of any contingency-digitized force. It should also work under necessity or constraint, with some different task organization and along with modified command autonomy. More flexible systems can only provide a satisfactory solution getting the necessary speed and permanence.

This paper sets out some thoughts about adaptation to digitization in command and control after reviewing the operational environment of the future forces and introducing the global analysis process.

A necessary adaptation of the digitized force's operations in a broad joint and multinational environment.

Because of the geostrategic evolution at the end of the past century, conflicts are multiplying in almost all continents, their nature is changing, and they must be dealt with differently. The resolution of crises turns more and more global. Their

handling, by or under the aegis of governmental, world, or regional organizations, is now the rule.

This fact leaves the armed forces - the commitment capabilities of which will range, more or less frequently according to the case, from micro-operations to collective defense - faced with multiple contexts of use, and with a large variety of actors to be associated with in operational theaters. From now on the land forces should achieve a broadened range of missions (not to forget home security ones), within a complex environment with multiple aspects (media, humanitarian, legal...), while inserted in national or multinational joint forces coming under ad hoc mandates, alliances, unions, or coalitions.

Therefore the information flow will greatly increase among all operational actors that are involved in such a complex operation.

To increase effectiveness, the exchange should be fast running. Battle space digitization will offer such a capability. However, what is to be difficult in the sharing of information is to be able to get the information flow consistent with the needs of the co-perating actors to achieve the needed effects. Those cooperation prospects among many changing actors should really be guidance for thoughts about the change in force organization and about the transition from an analog to a digitized operational mode.

Command and control is at the heart of all these issues of operational plurality and adaptation. The resulting developments concerning operational command will enlighten the necessary

adaptations of the organic command to make it globally consistent.

However, the universal nature of the function entails, because of interoperability, that the reasoning process about its evolution must be convergent in the joint and combined environments. Within such a context it is most important that France could express her views, exchanging in particular with her main partners. All that has been undertaken by developing an exploratory "infocentrage"⁵ concept within the Army Staff and by a study in the General Armament Agency on ORC⁶ (Operations réseaux centrées - Network Centric Warfare in the French Forces) as well as by French participation in similar work on a NATO NEC concept.

Until now The NATO standardization process has proven to be the most appropriate answer to the various requirements of interoperability. The current operational command organization has proven limited when faced with digitization. As a matter of fact, the current operational command and control systems are the result of sedimentation and from the combination of an art of war culture with a crisis management science; that background has progressively revealed through new operational capacities or concerns. The organization of current operations and coordination centers that make up command posts clearly demonstrate this fact. As such, the operational organization and functioning hardly appears to be able to make the best of information control or to ensure effectiveness in a quick decision process cycle.

Additionally, the transverse nature of the command function commands a global thinking. The study should also cover all operational functions that are subjected to digitization and that could participate to cooperative effect achievement.

In view of past differences among services and Allies about operational functions - that, as part of defense assets, should be much alike - it is imperative that the function identification and validation be achieved with a universal and stable reference.

Toward a universal functional approach

A macroscopic analysis (see the enclosed diagram) carried out from the seven strategic operational functions as now identified in France⁷ would give the opportunity to consider, in an anthropomorphic approach, the functioning of any force to depend on four basic and vital functions. The four of them contribute to the ability "to operate". The basic functions are Command and control, information, movement and conservation.

Before discussing this point further on, let us point out that the strategic operational functions "support and protection" that both have the same end - continuing the operation through strength management - are combined in the "conservation" basic function. Moreover we do not consider the "preparation" as a basic function because by combining planning and material preparation of operations it applies to each basic function. Finally we have selected the term



“movement” as it is more global than “projection” to describe the related function. Some definitions and a few explanations are now necessary for the analysis. During the cold war our forces had to be able to destroy an identified and known military potential. However, the starting point for this study is that operations are much more complex. They mainly consist of evolving friendly, allied, enemy or other resources over time and space. No matter whether those resources are shared, physical, informational or not, no matter the environment.

Then any operation is the result of a combination of the basic functions. An operation is said to be an “action” when it is a non-conflicting interaction with another body, otherwise it is said to be an “engagement”. Each basic function, through its operational activity, aims at achieving one basic effect that ensures a force operating capability. The achievement of opposite basic effects, by the maneuver of the engagement effects, takes a significant part in impeding enemy operations. Moreover, the modalities specific to each

basic function aim, through their operational activity, at detailing in the same way the basic effect or its opposite into specific effects. In addition, this functional approach orients the operational components in their domain of expertise. It's something taken on by the Army in its Future Land Forces 2025 plan, through the “in time ground contact” principle, either during force coercion or in violence control.

Some proposals flowing from this analysis based on thoughts about information control and about effects will later ensure that the study goes on about cooperation for effect achievement and to get the necessary information exchanges inside and among the functions. The first step is understanding what makes up the operational superiority of a force in its action and in its engagement capability. To do this, it tries to pinpoint, for each basic function, the exact nature of its functional superiority, which results from the favorable imbalance in the achievement of the basic effect and that of the opposite basic effect. So, the operational superiority of a force would

depend on a globally favorable balance of superiority in matters of decision, “cohesiveness”⁸, kinetics, and energetic, gained by achieving effects to one's benefit against the opposing force.

The mechanical revolution speeded up the physical mass. Now the ADP revolution is transforming the prospects of operational maneuver again by speeding up the information mass and by making much more accurate the exchange of information. Therefore, not questioning warfare's conventional principles (that is : freedom of action, economy of forces, and combat power concentration) it ventures outlining some supplementary operational principles that could bring new ideas for operational maneuver of the future digitized forces. Each operational principle holds the plus-value that digitization could, in theory, provide to each basic function. In this way, the operational “strike effect”, for effect achievement, could be a synthesis of the initiative, confidence, synergy, and economy operational principles. In the end operational

efficiency, resulting in the efficiency of all operational activities, would be the achievement of a maximum and positively favorable imbalance applied to enemy operations and to the desired end state. From there, it is easier to think about the evolution of command and control.

A few thoughts about command and control

Decision superiority as a main source of operational initiative, is the primary issue in the adaptation of command and control to the digitized world. It is worth noting, right from the beginning, that operational initiative will demand more detailed planning of operations. However initiative should not weigh too heavily on the command responsiveness. The “Armée de Terre Future” (ATF)⁹ study carried out by the CREDAT¹⁰, considers battlefield digitization and engagements in empty areas. It lets us think that the risk is not so high, thanks to possible contingency maneuvering, the principle of which is to catch opportunities or react to threats.

Decision superiority is based on four key pillars that are permanence, consensus, pertinence, and quick decision. Speed in decision-making and in achieving effects is often made easier by some degree of autonomy in decision responsibility. Now, a possible enhanced cooperation for the achievement of effects at every level and in any field¹¹ will imply that the decision responsibility for effects to be less often linked to the achievement responsibility.

This dichotomy is to remain reversible, more particularly at a tactical level. A view to quick netting, eased by a smooth reconfiguration of the information and communication systems, will provide a solution to that need of command and control for quick reaction. Command flexibility depends on an improved ability to change the task organization of a force, possibly backed by kinetic superiority, and on its capacity to quickly modify the distribution of responsibilities. When necessary, the “net structuring” will ensure, for shorter periods of time, the building up of contingency structures, more fitted to tactical implementation. Building up such structures will require more flexible and swifter coordination. The Common Operational Picture (COP) should help and should make the setting up of some liaison teams less systematic.

Changing on a permanent basis the operational capabilities of a force, through augmentation or tailoring, is to affect in some way the employment unit principle, anyway this principle will remain important. The definition and the capability balance of the modules aggregating into a force core are to be of the utmost importance. From a quality viewpoint, the capability definition of a force will have to match its initial operational purpose that should be linked to the more functional character of the component or formation it is part of. From a quantitative perspective, that definition should restrain the need for added

command levels in case of augmentation or of tailoring of the force or of its modules. To the land forces, an integration capability at the lowest level, and consequently making easier a federation into higher levels, could participate in such a necessary restriction.

The unit of employment principle that varies, according to branch logic, from the section to the company, could come close to a more functional logic and apply to those modules the autonomy and functional economy, which could vary to reach a size equivalent to a battalion.

However, building up reticular organizations, more or less long-lasting, depending on the nature and on the cooperation level selected, appears, not to jeopardize the capillary architecture of land forces. The creation of a hierarchical level will always depend on the strength and on the number of units possible maneuvering and commanding. Obviously the figure varies somewhat depending on the level of the subordinate units, as evidenced by the creation of armies and army groups during the First World War.

Suppressing one hierarchical level, as well as creating one, will impact on the higher level. Similarly the multinational character of a force makes it difficult, in force coercion specifically, to reduce the number of hierarchical levels. A multinational force is less easily subjected to integration, even when it gets permanent structures such as those of the French-

German Brigade. Nevertheless it appears to be not so right concerning some functions or concerning violence control. It is an additional proof of functional tailoring offering better integration possibilities.

So, the command function will have to ensure commanding a force, the decision for effects and the achievement responsibility of which could change as the conflict phases evolve or as new lines of operation are decided. The required swiftness in applying the decentralization principles - because of the various shift of authority during operations - will then be a quality of a future operational command.

Decision centers, major units operation centers, or battalion command posts will then be able to quickly integrate new functions related to new responsibilities in matters of decision or effects achievement. Locating functional teams in some decision centers could facilitate the implementation of that principle.

So inserting or withdrawing functional assets in or from an operation center is similar to the “reach-back” US concept that, on a different scale, aims at moving functions toward the rear of the theater or back to the home territory. It also partly depicts the possible indirect impact of a deployment in empty areas on a CP system. This concept could lead to a revision of the current C2 systems, operational and tactical-operational, more separating the command

from the control, and consequently it could lead to modifying the way operation centers are organized.

Whatever it may be, as it is coherent with the study process, reorganizing operations centers from the suggested functional approach offers the opportunity of an increased operational superiority.

For instance, considering the sought issue of information control, that reorganization could bring everything, functionally or even physically, pertaining to :

- internal or external information management in operation centers,
- internal or external communications,
- intelligence,
- aggression against information and communication systems,
- psychological operations, into the “information” functional set, as the C4ISR¹² US concept does. This organization example could help acquiring the “cohesiveness”¹³ superiority that is a necessary precursor of the decision one, as it gives an advantage over the enemy in matters of perceiving, understanding, and of accepting the current and future situations.

The outcome of those thoughts could be that future command, in the organization of forces and through the organization of its systems and of its structures, could be characterized by a better ability to some “functional fitting”. All of that could be based on kind of “telescopic” type command architecture.

In conclusion, the adaptation to digitization of the future land forces command and control will be closely linked to the global change of the function and of the operational functioning of the future digitized forces. Leading to an ideal integration, it should ensure a better federation and autonomy of digitized forces.

Universal basic function, it will ensure a functional synergy of the digitized forces with an aim to reach dazzling operational effects, and through the possibility of acquiring the operational initiative it will play a major part in the operational efficiency of the digitized forces.

To win, this operational efficiency will less rely on the number of digitized forces than on the control of their operational functioning.

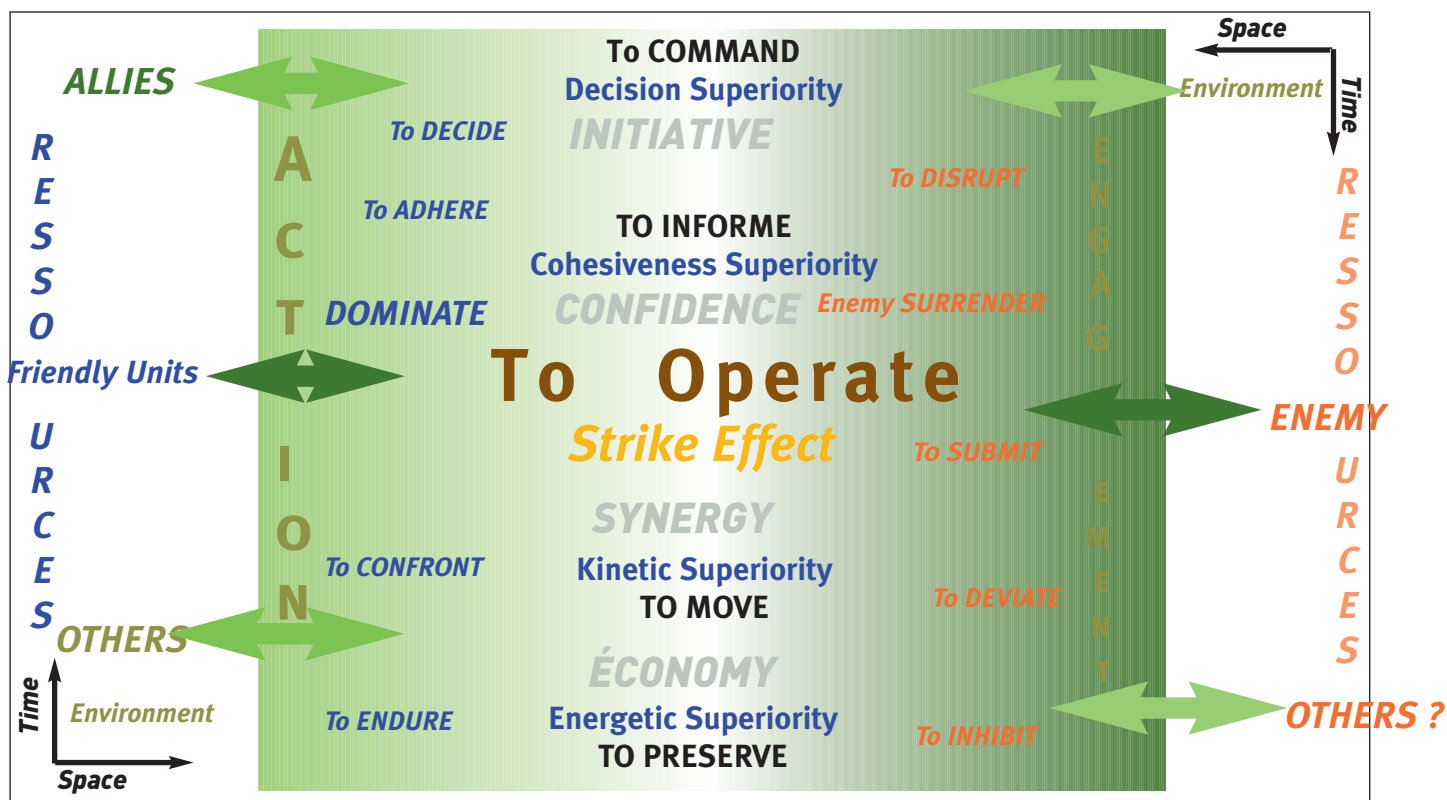
BASIC FUNCTIONS - OPERATIONAL PRINCIPLES

Functional Balance

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Operational Benefit

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Legend of the diagram described after the example of the "command" function :

INITIATIVE : operational principle possible to the digitized function.

↔ : interaction among resources.

to DECIDE : global effect to be achieved to its own benefit by the function.

to DISRUPT : global effect to be achieved against the opposing function.

Decision superiority : outcome in the function of a favorable imbalance.

- 1 Army staff.
- 2 force system and development department.
- 3 The 30 years long-term plan of the department of defense, based on operational needs, is the main tool used to direct defense studies and research. It is part of the planning process.
- 4 Technical/Operational Prospective.
- 5 Translator's note - Neologism made from: Information and Centering.
- 6 This concept is based on the US Network Centric Warfare (NCW), on the British Network Enabled Capability (NEC), as well as on the Effects Based Operations (EBO) concept.
- 7 Action, command and control, information, projection, support, protection and movement.

- 8 The term goes further than the cohesion notion used in the armed forces, it strives conveying the cohesion and coherence effects looked for into the information and the sharing of it.
- 9 Future land action.
- 10 Army doctrine research and study center.
- 11 Joint, interdepartmental, combined, within operational components, within and between the various functions and their proper characteristics.
- 12 Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance.
- 13 See note no 8.