



## □ Appropriation of innovation

Land Forces Doctrine Review

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**Anticipate the training of leaders and users in future command processes and the disruptions brought by the different capabilities (AVDT, augmented reality, simulation, robotics, etc.).**

End of July 2019: my son tells me that he has passed the Saint-Cyr competition. His dream is finally coming true and already his spirit is already well ahead. He will graduate from application school in the summer of 2023 after having chosen the first regiment equipped with GRIFFON. His future head of corps quickly announces to him that the regiment will be deployed in November 2023 in the Sahel-Saharan strip in the region of Madama. The first GTIA has already been deployed in the region for barely two years. As the GRIFFON is one of the emblematic combat vehicles of the SCORPION program, this young lieutenant will have taught Draguignan to take on all its functionalities and a new combat mode based on proven doctrine. Relying on all the innovation brought by SCORPION, he will take tactically the ascendancy over the adversary during his mission, more than by these new means, by his ability to use, understand and have made his own all the possibilities offered by the recently commissioned capabilities.

It should be noted that the added value offered by innovation, particularly in the military field, cannot be decoupled from the ability to exploit all aspects of it. More than the development of new technical capabilities and a specific doctrine, this appropriation raises the problem of the essential issue of the "appropriation" of these new tools, which is a guarantee of operational effectiveness.

This appropriation deserves to be taken into account and anticipated today. Its impact must be measured against the level of ambition that the SCORPION programme promises us. We will see what history shows us in this fundamental area and how we can act to ensure that this appropriation of the SCORPION programme is seen as a lever for

operational superiority.

### **The constants of technological breakthroughs**

While innovation in the broadest sense is not a new fact in itself, its history has been marked by a few constants. Many military successes have come about through the advent of new objects of war. From the catapult to the machine gun to the tank or the airplane closer to us, we can see that these tools only became effective after a phase of understanding what its systems could offer. The case of the tank perhaps illustrates this better than others.

It is quite clear that technical innovation alone, unaccompanied in doctrine and in the training of leaders and subordinates alike, can lead to the partial exploitation of new capabilities. It should also be noted that innovation in the broadest sense can take individuals or groups out of a comfort zone where past or current models are solid reference points to which they can hold on to. The Battle of Berry au Bac where Commander Bossu broke through the three successive German lines of defence on the ground with his Schneider tanks illustrates this. It is indeed a tactical success despite its losses, but we note that the French High Command initially draws the main conclusion that the tank is not the tool to finally take the ascendancy over the opponent. We also note that in doctrinal terms, the infantry did not accompany the tanks. Moreover, the training of the crews and the unit was limited in time (war oblige) compared to what the tank, a major innovation, could have brought.

Thus, more than just supporting innovation, it is important to consider, prior to its implementation, all the areas it impacts and to map them accurately. Training and coaching in particular remain major aspects in this mapping. The deployment of SCORPION, an innovative programme in more ways than one, is no exception to this logic if we consider that it is not just a simple adaptation of our current resources.

### **Understanding the contributions of simulation and robotics in the appropriation of SCORPION**

The subject of training and education is no doubt more than a simple adaptation of both methods and means to this need to innovate in order to accompany the major changes brought about by our new capabilities.

The possible innovation(s) in these areas can be considered as tools directly contributing to the operational efficiency of the SCORPION system. In this logic, innovation is for training and coaching an effective support for the appropriation of the system. The simulation illustrates this. In absolute terms, simulation will allow the "augmented leader" to study multiple realistic tactical cases that will reinforce his experience. These tools, already partly tested in the Scorpion Combat Laboratory (LCS) with exploratory doctrine as a field of application, are already a reality. The simulation will, for example, tomorrow enable soldiers to carry out dozens of firing sequences beyond the direct view of the medium-range missile, clearly improving their skills and performance.

In the same spirit, robotics is what will enable both the leader and the soldier to understand their environment much more precisely and to act in it. This will be a form of

appropriation of things with the SCORPION unit's knowledge of its environment as its scope of application.

The implementation of SCORPION requires rethinking the combat itself (contribution of collaborative protection, use of hard kill and soft kill systems, etc.).<sup>17</sup> use of SICS<sup>18</sup> within the framework of infovalorisation, coordination of the actors in the third dimension<sup>19</sup> etc.). The programme's contributions do not require the existing system to be adapted, but rather a rethinking of the doctrine, as well as of training and education. The comparison with a puzzle in which each piece is important, but does not constitute the whole, can illustrate the construction of SCORPION. Each piece has to be cut out again if, in the end, the objective is to obtain a combat tool that is served to its full potential and at the level of ambition.

### Revisit training and education

It is certain, much more than the technical innovations that SCORPION offers, that in doctrine "the fighting style" will evolve. While it remains obvious that the main principles of warfare will not be called into question, we can already see that the vision of combat is changing. Infovalorisation will bring a mass of data and information that the leader and subordinate will have to understand, analyse and sort through quickly without losing sight of the immediacy of the action.

Another characteristic of decentralized combat, based in particular on collective protection, is that the subordinate will have to be able to show initiative intelligently. The word subsidiarity in the SCORPION fight will take on its full meaning. In terms of spirit, the relationship between the leader and the subordinate will probably be of a different nature than it has been to date. In order not to freeze the subordinate in action, the aim will be to increase the level of trust between him and his leader, so as to encourage his ability to act quickly in a compartment of the field where he may be the only one able to engage, given the dispersal of units.

We can see here that in terms of appropriation, SCORPION will also impact the cognitive field of leader/subordinate relations. This is not a questioning of the foundation of our state where the leader will continue to command and control, but in terms of command style will have to be adapted to this new situation.

To be more precise, the training and education for this appropriation could be rethought in the light of this warrior spirit that the Chief of the Land Staff wishes to see reinforced. When our subordinates are called upon to implement complex systems requiring a high degree of training, it will be a matter of their initial training as development of the qualities that encourage initiative, rapidity of analysis in constrained times or decision-making in situation, alone in the field. Simulation is an excellent support and should allow errors to be analysed, understood and corrected. The concrete case of a JAGUAR platoon taken to task illustrates this. As part of collaborative protection, all the other units in the platoon will be able to respond to the threat. Does this mean that the three guns of the platoon receiving the information will concentrate their fire on this single threat, omitting that in the sector of the platoon other opposing units may at the same time reveal themselves? In this case, it will be a matter of the most suitable device destroying this threat, without diverting the platoon from its main mission of surveillance. To achieve this result, which is obviously testable in the field, the simulation or wargaming allows the training to hover

behaviors and procedures within the units. Wargaming is also a tool that can be updated to work on the minds and develop the tactical sense of the units. It is not a tool from another time and contributes directly to the appropriation of the SCORPION fight. Already used by the LCS, it has shown its relevance in doctrinal terms.

The use of its tools contributes directly to the knowledge of the capabilities that the program develops, as well as to the individual and collective gain sought to gain ascendancy over the adversary.

The appropriation of the SCORPION programme remains a key issue. It must be anticipated today. Its application, in terms of what training and education will be, is essential and must be envisaged in parallel with the development of a specific employment doctrine as of now. The programme's master plan already provides a specific view on this subject. Each combat and each engagement, as history has shown us, remains unique and our Army needs tomorrow leaders and subordinates capable of adapting quickly to their environment.

17 System of active and passive missile protection including rocket and missile destruction.

18 Scorpion Combat Information System.

19 Cl3D.

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