



□ The centrality of experimentation in the process of doctrinal exploration

Land Forces Doctrine Review

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The Frenchman is willingly Cartesian and, like Saint Thomas, prefers to see before believing, it is said. The Scorpio Capability Transformation challenges these natural tendencies by shifting from the certainties of a known and relatively stable doctrine to that of infovalorised collaborative combat, which could be the land task force's response to the requirements of near-future engagements, up to 2025-2030.

The major problem is to check whether this change of model allows us to better win the war. Winning the war better is indeed, indisputably, the finality of the Scorpio transformation. As in any other innovation approach, to answer this problem, we must go through experimentation. Creating for this purpose the Scorpio Combat Laboratory (LCS), the Command Doctrine and Teaching Center has initiated a campaign of doctrinal experimentation.

In the case of Scorpio, the use of experimentation is all the more valuable as there are many unknowns in many areas. A method of experimentation had to be created, without being able to rely on a ready-made model. Knowledge of the capabilities of equipment is still imperfect, as the specifications of some of them have yet to be finalised (such as the armoured engagement support vehicle, for example).⁷ or the contact support module⁸) and because the services rendered by the different versions of the Scorpion Combat Information System⁹ remain to be evaluated. Simulation tools do not yet represent the heart of the Scorpion problem, which is infovalorisation. How the next generation will think about command and collaborative functioning is still difficult to predict, as are the precise modalities of interoperability. Finally, the unknowns are obviously endless as to the nature and modes of action of the adversary.

As in any laboratory, experimentation is an approach that presents a high risk of

dispersion of resources and efforts, if those in charge do not ensure that the original meaning of the approach is respected. To allow this, it is important to start from an inventory of fixtures defining the starting situation and the ambition of the arrival, then build a method of experimentation, consolidate this method over the course of the experiments, and finally exploit the fruit of the accumulated observations.

Taking stock of the situation: starting from what is known and defining what is missing

What we know of the 2025-2030 horizon, which is that of a Scorpion at full operational capability, is limited. However, to place the Scorpion system of systems in its future engagement environment, some normative data are needed to help define the framework for experimentation. The enemy faced by the Scorpion IATF, an essential element of the tests, is consistent with the scenarios that allowed the development of Future Ground Action. This enemy benefits from the innovations predicted by the technology watch studies carried out within the Army.

To complete this framework, it is necessary to be able to evaluate the improvements brought about by capability innovations. This essentially involves comparing current standards with those that can be envisaged in the future model. For that purpose a reference base is necessary, consisting of the organisational schemes, engagement standards, planning processes or support modes (logistics, CIS etc.) that are established in current doctrine and enriched by a permanent RETEX. Without this initial reference, it is illusory to seek to demonstrate changes in terms of the balance of power or the speed of execution of certain missions.

As this framework is built on current doctrine and data on the future operational environment, it is supplemented by exploratory doctrine. With all these elements, it is possible to distinguish for each experiment what is perennial and what can be presented as a doctrinal hypothesis. Among these hypotheses, some have already been consolidated through experimentation, others remain to be confirmed by field evaluations. Still others remain at the exploratory stage and will require more complete work. The distinction between these different categories is essential to define the expectations of each experiment.

Building a method of experimentation

To understand the challenge of developing an exploratory doctrine prior to the commissioning of equipment, one can compare this undertaking with the construction of a modular gateway of a new model in the dark. The team building this bridge, at sunset, is tasked with crossing a river in the early morning. They have the descriptions of the various modules and know that they will only retrieve the components of the bridge at the end of the night, and in several successive elements. Two schools confront each other: either wait for the arrival of the bundles to start the assembly, thanks to a concrete understanding, elements in hand, or privilege the anticipation and experimentation, possibly with makeshift models, in order to be fully effective when the elements are delivered. The posture chosen by the Scorpion Combat Laboratory is the second, in which experimentation has a central place and poses many challenges.

This work of anticipation is based on a choice between several hypotheses, a process that

can be compared to the confrontation of modes of action - or wargaming - during a planning sequence. One of the hypotheses (H1) is based on what is desirable, and is defined by the exploratory doctrine of Scorpio. What is possible (H2) would be the sum of the specifications of the capabilities that will be put into service as part of the overall Scorpio operation. Another hypothesis, (H3) would address what is possible in terms of force organisation and command mode. The solution chosen, which, as is often the case with the initial hypotheses, will be the result of doctrinal, technical-operational and tactical experiments that began in 2014 and will continue until the last objects integrated into Scorpio, such as land and air robotics, are commissioned. This solution will be described in the doctrine manuals of the Scorpio units, which will define the right way to respond to future threats, even in a degraded environment, by exploiting all the capabilities offered by the system of systems at our disposal.

As it has no prior model for conducting its doctrinal experiments, the LCS has relied first and foremost on a skill that is recognised in the French Army: operational evaluation carried out in specialised training centres (combat training centre, etc.).¹⁰ Training centre for actions in urban areas¹¹). It complemented its methodological approach with the approach developed by the operational analysis and research specialists of the Land Staff. Finally, where simulation does not allow analysis under good conditions, it sometimes uses the less technical and more flexible supports offered by the world of war games, or wargame, of a professional or even commercial nature. In the end, experimentation cannot be limited to verbal exchanges between experts, but is systematically based on the confrontation of the Scorpio model with all types of threats in a future environment. This confrontation is of interest only if it is observed by all the arms research and prospective departments, and is the subject of critical after-action analyses.

How do we approach the question? Top-down" or "bottom-up" approaches each have their advantages and respond to different needs. In the case of Scorpio, the natural starting point was the level of the Joint Battle Group, which was chosen as the reference for the new operational model from the very beginning of the programme. From this intermediate level, all studies are possible downwards, for the drafting of the first provisional manuals of the section on GRIFFON for example, or upwards, for the study of the adaptation of the joint brigade command system in Scorpio mode. On the other hand, the key point of all doctrinal experimentation on Scorpio is an all-encompassing approach to all operational functions in combat, banishing all silo vision.

Each experiment contributes to the improvement of the method, and the after-action analyses systematically study both the doctrine and the method. This approach was defined from the very first evaluations, which represented a challenge comparable to a leap into the unknown.

Agreeing to leap into the unknown

Before arriving at the model for the current experiments, the first test sessions made it possible to lay the foundations of the method in a very innovative way: taking into account the infovalorisation, the difficulty of the Scorpio force, the right to error and replay, comparison between different models. Four years later, the system was consolidated, with a clarification of expectations, the definition of a master plan for experiments and doctrinal publications, and a more thorough knowledge of the possibilities and limits of simulation systems. Two types of experimentation provide a global or targeted vision of different aspects of doctrine, satisfying both the continuation of exploratory studies and

the need to develop employable doctrine manuals as soon as the first capabilities are put into service. The "Roman Scorpio" series¹²The "Scorpion IWG" deals with the general functioning of the Scorpion IWG in its environment, with an average of 150 participants, in one fifteen-day session per year. A main focus (support, command, air combat for example) is defined at each experiment to guide the work of perfecting the doctrine, without dispersion. The "Scorpion 100s", which mobilise smaller numbers of personnel during sessions lasting a few days, enable more targeted aspects to be studied, such as collaborative combat or coordination between two units in a Scorpion environment.

Over time, it became clear that the use of classical simulation tools offered a good representation of the common aspects of combat (movements, fire exchanges, consumption, etc.), but that other areas needed to be addressed with specific approaches. For example, recent experiments on active protection or on command organisation required an adapted method and analysis tools. The LCS is therefore curious about any method enabling it to delve into these aspects.

Since 2016, the systematic use of units to "play" the role of the Scorpion IATF has made it possible to systematically direct experiments towards what is of immediate interest to future users. The LCS thus deepens well what allows the force to prevail more effectively, and rejects the accessory. The purpose of the experiments is quite close to the motto "sweat spares blood" adopted by many army units: it is to make the most of each experiment to deliver to the units doctrinal foundations that will give them real superiority in operations. The field of exploration is still immense; it requires resources and discernment not to neglect any track, without however dispersing itself.

Exploiting experimentation

From the very first simulation test sessions, it became clear that bringing the Scorpion model to life, by confronting it with a maneuvering and sometimes symmetrical enemy, was beyond the scope of doctrinal study. The representation of the maneuver of a Scorpion GTIA, symbolized by a few pawns on a map, offers indeed a useful support of reflection to the other DORESE pillars.¹³This is the first time that the doctrine work has been carried out in support of the entire capability approach. By using, for example, the Scorpion combat information system¹⁴ Well in advance of its commissioning date, doctrinal experiments were able to complete the usual equipment qualification campaign: They provide a practical look at the functionalities considered most sensitive by future users, such as those related to coordination in the third dimension or the possibility of collaborative order development.

Moreover, if the object of the experiments is the future GTIA, the test sessions have the particularity of bringing together all the study and prospective departments to reflect, in a collective way, on tactical situations. The result is the possibility of complete and concrete exchanges on the doctrine seen in a general way, which allows for a healthy critical reflection on the current doctrinal corpus, which could not have been done through the usual comitology between the participants in the doctrinal community. The expression "doctrinal incubator" describes the Scorpio experiments very well.

As a corollary of the doctrine development work, the question of the appropriation of

Scorpion by future generations is crucial. This has been said, before the arrival of the system of "training centres representative of the battle spaces and the return of commitments"¹⁵ "Our simulation tools do not allow us to differentiate between a digitized unit and an info- valuated unit in arbitration systems. This aspect, which is critical for a good understanding of the contributions of info- valorisation, is one of the salient points resulting from the doctrinal experiments. It is developed in a reflection document on the use of simulation to prepare for the future."¹⁶ This is a good example of the impact of experimentation aimed primarily at developing doctrine.

CONCLUSION

At the heart of the process of doctrinal innovation, the experiments carried out since 2014 have made it possible to discern certain criteria on which rests the essence of the Scorpio transformation, sometimes going beyond the vision originally carried by the programme's initiators. Among these criteria, the importance of the capacity for reorganisation during the course of the action to guarantee the tactical leader's freedom of action will be highlighted. There is also the increased need for discernment in sorting information, but above all the need to learn to read screens. And the correlation between the ability to command effectors and the ability to have effects provides a renewed vision of chains of command.

All these subjects, which can contribute to a fundamental transformation of our art of warfare, cannot be discovered under fire, because one would not have known or wanted to study them without associating imagination, resources and time. To carry out experiments successfully, however, one must resolve not to have all the data at one's disposal and to supplement them with hypotheses. In a way, to accept as admissible points that we have not yet been able to control in the field is only partly Saint Thomas.

7 VBAE.

8 MAC.

9 SICS.

10 CENTAC - 1st Fighter Battalion.

11 CENZUB - 94th Infantry Regiment.

12 Numbered to date from Scorpio I to Scorpio IX.

13 Doctrine, Organization, Human Resources and Training, Training, Support and Equipment.

14 SICS.

15 CERBERE

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