

ONE OF THE APPROACHES TO MODELLING COMMAND POSTS IN CONTEMPORARY COMBAT OPERATIONS

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Abstract: This paper discusses a specific approach to modelling command posts in contemporary combat operations. The modelling approach is implemented through the factors of the model within a comprehensively considered process of applying the modelling method. Starting from the conditions of the contemporary operational environment in which the command post functions, through the subjects of the current model and the defined objectives for improving the model, the process leads to the development-related activities and actions. The approach ensures a proper path for the construction and improvement of a model that responds to the conditions in which contemporary combat operations are conducted. The improved model contributes to greater resilience and efficiency of the command post, which, as part of the command system, contributes to success in a combat operation.

The approach uses various methods of scientific inquiry, with particular emphasis on multiple analyses, syntheses, and abstractions of the factors of domestic and foreign solutions of models and submodels, as well as on the hypothetical-deductive element of integrating foreign and domestic organisational and expert experiences in constructing a complex whole for military purposes. The proposed modelling approach through factors was tested through research aimed at improving the command post model and was confirmed by experts. The paper is intended to assist researchers in the field of military and other sciences who deal with the improvement of the organisational-technological structure of parts of the military system.

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Introduction

The operational environment in which combat operations are conducted has changed substantially in recent years. It has retained and significantly increased its complexity and has surprised opposing sides. In a large number of manifestations, it has expressed revolutionary innovations under the influence of numerous factors, primarily related to technological development. New technical assets have emerged that exert a particularly strong influence on the conduct of operations, but they require the collection, organisation, and processing of large amounts of data, the engagement of various specialists in specific fields, and the application of new technological solutions. Such complexity in commanding combat operations represents a major challenge. At the same time, the easy detection and precise elimination of point targets are becoming increasingly prominent. In this regard, the vulnerability of the command system is becoming increasingly significant, as it often relies on point sources of decision-making and information transmission.

Command posts (hereinafter: CPs), as an essential part of the command and control system, constitute the core of the system without which command of operations cannot be exercised. Command posts integrate human and material resources and procedures, and enable the making of appropriate decisions necessary for the success of operations. Based on the identified conditions in the operational environment, it can be concluded that the essence of the problem lies primarily in the high vulnerability of the existing organisation of CPs and their inability to respond to contemporary and future threats, particularly in combat operations. In this specific research, due to current global conflicts and their significance for the defence system, the consideration of an improved CP model focuses on CPs established primarily by Land Forces or joint forces.

The need to improve the existing CP model raises questions regarding the approach to the complexity of the problem. Domestic researchers offer partial analyses of the current state of CPs (Kovačević et al., 2024), while various studies can be found in foreign literature (Clemente et al., 2019; Siegfried & Moriarty, 2024), mostly based on experiences from current foreign conflicts. A solution may be found in the modelling method, which, through its comprehensive consideration of factors, represents an ideal way to implement the process. As part of the research, expert evaluation was conducted with students of the General Staff Course at the School of National Defence "Vojvoda Radomir Putnik", according to the factors of the model used to confirm the credibility of the model improvement.

The first part of the paper clarifies the methodological approach to the research, after which the current and improved CP models are examined in detail through the factors of the model, followed by the research results and the conclusion.

The modelling method in considering the complex process of command post improvement

Starting from the fact that the formation of a CP model is an extremely complex problem, it is not sufficient to propose a new, improved model solely on the basis of practical experience, the theoretical-normative framework, or expert opinion. Previous experiences from global conflicts over the past five years will demonstrate precisely that even the greatest military powers have made mistakes that practice has exposed. Experiences from all sides must be taken into account equally when working on the factors of the model. For this reason, the hypothetical-deductive method occupies a notable place in transferring a large number of experiences into the framework of theory. Within the command system, command posts are deeply functionally connected and interdependent; therefore, any influence on a specific CP is at the same time an influence on the entire command system, as well as on the outcome of the ongoing military operation.

This extensive interdependence requires a broad consideration of the matter and a narrowing of focus to the most significant elements that reflect the essence of improvement. It is not sufficient to implement improvements to individual vulnerable parts, because the positive effect will not be equivalent to the investment made without the improvement of another connected element of the current model. Specifically, resolving part of the problem in the structure or function of the CP does not solve all problems, but merely shifts the problem to the next location, so that the complete organisation remains burdened or congested in its functioning elsewhere, which will result in an insufficiently effective solution.

For this reason, it is necessary to apply an appropriate analysis of the current CP model, one that is based simultaneously on in-depth scientific analysis and a large number of current experiences. Such an analysis precisely guides the research towards the formation and verification of the model. A thorough analysis of the current model will quickly reveal structural and functional problems.

However, the process of arriving at an improved model must be gradual and controlled by both the scientific and expert components. This methodological process follows a path that absolutely guarantees the absence of gross error and the achievement of the required objective through an understanding of the improvement of individual elements of the model, and through gradual orientation towards the required objective, activities, actions, and desired effects.

The modelling method is used in multiple ways in this consideration and is visible through the basic CP model, as well as through submodels of different levels and depth. Expert knowledge and experience will determine the required depth of the submodels. The constituent parts and essential factors of the model are based on the fact that, in the social sciences, nothing occurs in isolation; rather, people, that is, sub-

jects, act in an environment of certain conditions, according to certain interests and objectives (Lazović-Jović, 2016, p. 165).). This was described in detail and grounded by Milosavljević and Radosavljević (2006, 72), who presented the basic factors of the model: conditions, subjects, objectives, activities, methods, and effects. For the purposes of this paper, the model will be elaborated through groups of factors that form logical wholes as follows: (1) conditions and subjects, (2) objectives, (3) activities, and (4) effects. The methods used in developing the model include most of the basic methods of knowledge and reasoning, among which structural, functional, and comparative analysis, synthesis, and abstraction are used to the greatest extent. Among the general scientific methods, the hypothetical-deductive method was used in particular as an experiential method. The statistical method was used for the complex processing of expert data. Bearing this in mind, as well as their use in all parts of the modelling process, methods as a factor of this model will not be treated separately in this paper, but will instead be integrated through the other factors of the model (Figure 1).

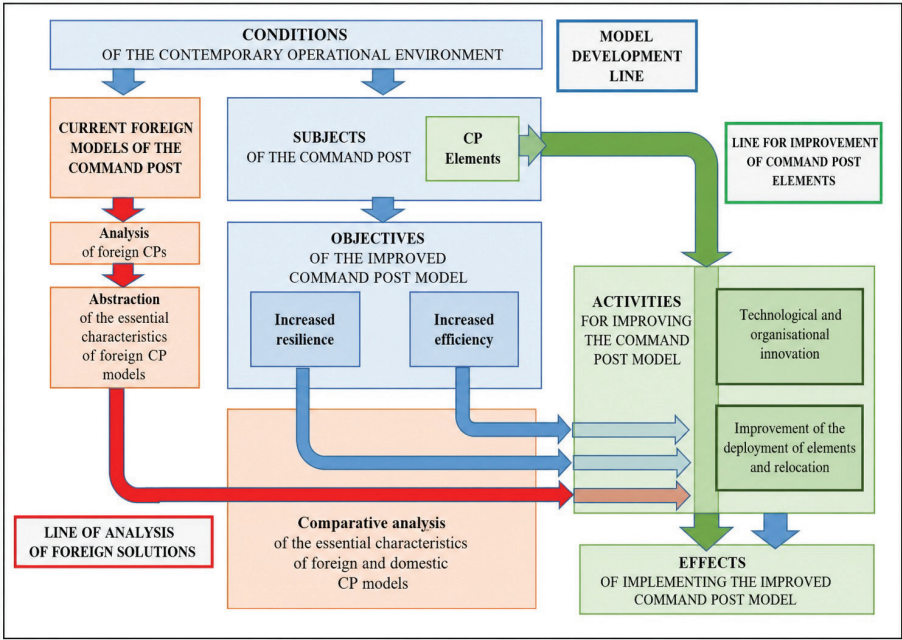


Figure 1. A Methodological Approach to Improving the Command Post Model (Author's elaboration)

The approach combines three lines of consideration that achieve the synthesis of knowledge in the improved model. The basic line of model development (blue) follows the factors of the model from the current to the improved model and enables the implementation of foreign solutions (red) to the extent necessary for the improvement of individual elements (green) of the command post (Figure 1).

Conditions and subjects of the current command post model

Contemporary combat operations are conducted in an operational environment described through various dimensions. The Operations Doctrine of the Serbian Armed Forces specifies different dimensions of the operational environment and concretises their manifestations (Generalštab Vojske Srbije, Združena operativna komanda, 2012, p. 8). These dimensions are specified in a similar manner in foreign documents as well (HQDA, 2022, 1-78; UK MOD, 2025, p. 119). Viewed comprehensively, the contemporary operational environment, in both domestic and foreign documents, is an extremely complex and nonlinear system in which the influences of all dimensions overlap and interact with one another (T2COM G-2, 2024, p. 5). In practice, this means that combat operations are most often conducted as joint operations, with the network-centric model prevailing in technologically more advanced armies. In addition, high speed of execution, asymmetry, and the hybrid character of conflicts are among the observable characteristics. The stated characteristics of operations are manifested in relation to command posts through the conditions in which the current command post model functions.

Conditions and subjects are the starting points for considering the improvement of the current command post model. The conditions under which the current CP model functions in a combat operation describe the complete influence of the operational environment in a given area, the so-called area of operations, at a given time, through the dimensions of the operational environment. In this way, the stated factors characterise contemporary military operations. For the purpose of considering the conditions, it is necessary to concretise the dimensions of the operational environment that exert a particularly negative effect on CPs and the command system as a whole. On the other hand, the conditions under which it functions also imply the doctrinal-normative framework, that is, a large number of regulations governing different types of CPs, both domestically and internationally.

Foreign experiences are necessary, since they are the result of current conflicts and irreplaceable experience. Complex combat operations conducted by different military forces have been observed in recent years in the territories of Azerbaijan, Armenia, Ukraine, Israel, and other countries of the Middle East. The Russo-Ukrainian War has shown that specific weapons, especially artillery-rocket systems and unmanned aerial vehicles, together with “boots on the ground”, remain central in conflicts be-

tween states. The post-Cold War trend of shifting from mass to precision is changing into "mass precision", with a large number of inexpensive unmanned systems (Stockholm International Peace Research Institute, 2025, p. 26). The operational environment manifests the most significant conditions through modern non-lethal and lethal means and technologies in accordance with the stated determinants.

Modern non-lethal means and technologies are assets that have been promoted partly in the civilian sector and, very quickly and inseparably, in the military sector as well. This group of assets creates certain conditions in the operational environment in which non-lethal effects are manifested. They are visible in the information environment and include reconnaissance and guidance assets, primarily satellites (Starlink, 2025), as well as unmanned aerial vehicles, which have become particularly relevant in recent years for reconnaissance purposes (Zabrodskiy et al., 2022, p. 16) and for telecommunications purposes (Vlačić, 2023). Electronic warfare assets must also not be omitted (Ivić, 2022; Creedon et al., 2023, p. 122). Through their non-lethal effects, they shape the modern operational environment and influence the character of contemporary combat operations being conducted. Operations are becoming increasingly oriented towards network-centric models, without which success on the battlefield is not possible.

Modern lethal means possess lethal potential and manifest lethal effects on personnel or materiel. In terms of considering the contemporary conditions of the operational environment, this paper includes precision-guided munitions and missile systems (Cavoli, 2023), glide and guided bombs (Lister & Pleitgen, 2024), unmanned aerial vehicles employed for combat purposes (Thomas, 2025), and directed-energy weapons (Casey & Beale, 2024). These assets can physically damage or destroy significant point targets, such as command posts, telecommunications systems, military equipment, personnel and other assets, facilities, and systems used for military purposes.

The advancement of technologies applied in the information, that is, cyber, dimension of the operational environment produces its effects, but it does not threaten the inviolability of the military dimension, whose full and stark manifestations can be observed in the Russo-Ukrainian conflict. A large number of lethal and non-lethal effects are manifested daily and cannot be stopped to the extent previously assumed. These effects are manifested precisely on the subjects of the CP model, while having a significant impact on particularly sensitive sub-elements, such as the operations centre, the operations room, and the mobile telecommunications and information centre.

At the centre of the subjects of application of the CP model are human resources, which use the existing organisation of the CP and the command system and, together with them, form an integrated whole. In the Serbian Armed Forces, a command post is defined as an area or facility where a command, or parts of a command, is deployed for work on the planning, preparation, and conduct of operations (Figure 2). A command post should enable the continuity and efficiency of command over subordinate units, as well as the maintenance of the necessary communications with subordinate

and superior commands, cooperating commands, and other commands. According to their purpose, command posts may be: main command posts (CPs), logistic command posts (Log CPs), forward command posts (FCPs), alternate command posts (ACPs), combined command posts (CCPs), dummy command posts (DCPs), and training command posts (TCPs) (Generalštab Vojske Srbije, Uprava za planiranje i razvoj J-5 [GŠ VS UPIR J-5], 2017, paras. 602–604).

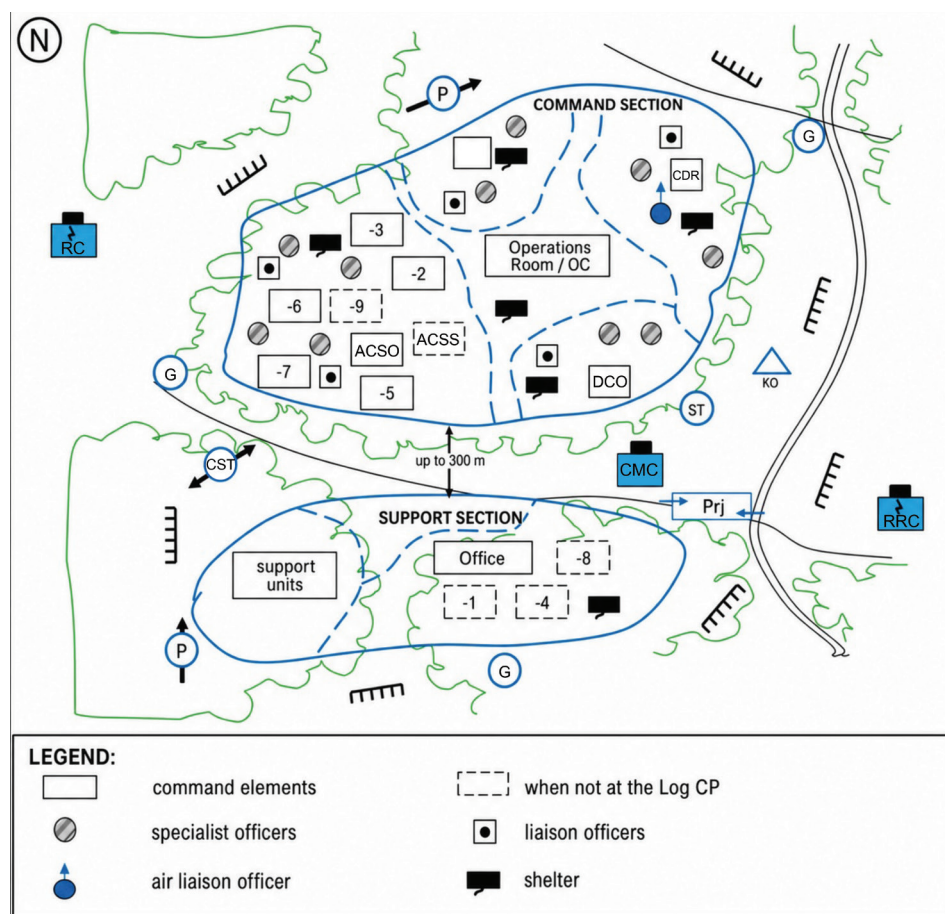


Figure 2. General layout of the command post (GŠ VS UPIR J-5, 2019, t. 340)

For the purpose of a comprehensive consideration of the subject of the research, the subjects may be viewed as a horizontally connected organisation of the functioning of human and material resources at the CP, and as a vertical organisation of the command system, whose basic and most important part is precisely the command post.

The number and type of CPs depend on the level of command. The command of a battalion and units of equivalent level organises only the main command post. Company- and platoon-level units organise observation posts, except for company- or battery-level units in the Air Force and Air Defence, which may organise a main command post. The basic elements of a CP are the command group, the support group, and the mobile telecommunications and information centre (MobTIC). The command group is the location where the unit command is deployed and consists of several parts, while personnel within it are usually grouped into: (1) the operations centre and (2) the operations room (Figure 3).

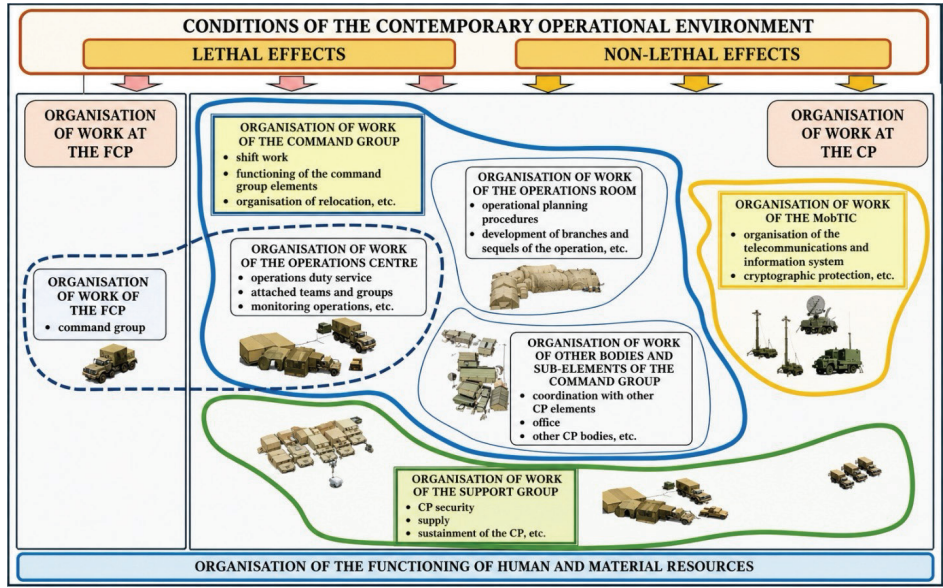


Figure 3. The Impact of Modern Operating Environment Conditions on the Horizontal Connectivity of the Command Post Model Elements' Work Organization (Author's elaboration)

The effects produced by current conditions act hierarchically and simultaneously on the vertical chain of the command system, as well as on the horizontal organisation of work, which represents the expression of the command system in the field within a

particular unit at the operational or tactical level. The manifestation of effects on any sub-element of the CP model, personnel, or materiel affects the entire model. In this symbiosis of the organisation of human and material resources, it is absolutely impossible to consider any part separately, without an impact on the final result. Through the organisation of work, personnel counter the effects produced by the conditions of the operational environment. When the intensity of negative action becomes too great, the existing organisation of work at the CP can no longer respond to the requirements or perform its function. Such experiences constitute the basic prerequisite for defining the development objectives of the improved command post model.

Development objectives of the improved command post model

Development objectives derive from the observed interaction between the conditions and subjects of the model. Appropriate objectives direct the process towards the corresponding result, that is, towards the required improvement of the model that will correspond to the conditions of the contemporary operational environment. The objectives should primarily enable the overcoming of negative effects manifested in the contemporary operational environment. This will be achieved above all by increasing the resilience of the CP, thereby directly increasing the “survivability” of the CP in a combat operation. In order to fully exploit modern technology, it is necessary to further increase the efficiency of CP work, thereby creating the conditions for more efficient and operationally effective work by personnel, an increased flow of information, and thus better visualisation of the battlefield and, ultimately, success in the operation.

Increasing CP resilience is an objective that arises from the increased level of threat to the command post. In parallel with this, the importance of increasing resilience is manifested as a need for the quality and continuity of functioning not only of the CP, but also of the entire command system. Therefore, increasing resilience is also linked to a positive outcome of the combat operation.

Increasing CP efficiency as an objective primarily entails the improvement of command-information systems (CIS) and telecommunications-information systems (TIS), which form part of the command post. From the technical aspect, this implies hardware and software improvements to devices and systems for the transmission, processing, and distribution of data within the command system. The improvement of the technical aspect is accompanied by the improvement of the procedures that regulate them. Improved CP efficiency will enable faster information transmission and the overall improvement of the functioning of the command system. On the other hand, increased efficiency contributes to the faster and higher-quality conduct of operations through more precise planning and more economical use of resources. As in the previous case, it contributes to a positive outcome in operations.

Activities for developing the command post model

Starting from the objectives, and considering the conditions in the contemporary operational environment and the subjects that apply the CP model, the need arises to direct work towards the development of an improved command post model. These activities may be classified into two basic groups: (1) technological and organisational innovations of CP elements, and (2) improvement of the possibilities for the deployment of elements and the relocation of the command post.

The technological aspect implies that the response to new technologies must be new technology, or technology capable of matching it to a certain extent. The moment at which objectives are directed towards a product is ideal for gaining insight into foreign solutions. In this way, when developing the improved model, an already adopted activity that presents part of the solution may be used, thereby shortening the process of activity development. In technical terms, foreign solutions generally offer mutually similar solutions that respond to the established development objectives of the previously presented model (Thales, 2025; Elbit, 2025a; Elbit, 2025b). By considering foreign solutions, sufficiently important generalities arising from the models of foreign manufacturers may be identified. Using the method of abstraction, significant characteristics of all foreign models are identified, namely: (1) improved mobility and modularity, (2) improved TIS within the CP, with appropriate server architecture both towards superior and subordinate elements in the command system, (3) the existence of CIS and a common operational picture, and (4) physical defence against certain airspace assets by means of specific technical systems. A comparative analysis of these essential generalities of foreign solutions and the established objectives provides guidelines that help direct the activities of command post development.

The proposed improved CP model focuses on, and introduces the greatest number of changes into, the command group as the most significant part of the CP, but it also includes changes to the other elements of the command post. The command post would, in principle, have the same basic elements: the command group, the support group, and the MobTIC, with these groups undergoing minor or major technological and organisational changes. The focus is on improving the elements of the operations centre, the operations room, and other elements of the submodel that have been identified as the most vulnerable to the effects of the contemporary operational environment.

The realisation of the objective defined as increasing the resilience of the command post, as well as increasing efficiency, is primarily achieved through the development of a technologically modern platform that will introduce a substantial change into the command post model. Supported by improved telecommunications and information assets, the technologically enhanced platform will support the requirements

of modern platforms, followed by the adaptation of the organisation and work, which constitutes organisational innovation.

A modern platform enables reduced exposure to lethal effects, as well as more efficient work. In practice, this additionally entails replacing the existing method of deploying command bodies at the command post. The current doctrinal framework defines the basis of work organisation through the grouping of the largest part of personnel in the Operations Centre or Operations Room. In practice, personnel are deployed in tents or in appropriate, more or less prepared areas, which creates a large and less mobile whole that is vulnerable to the non-lethal and lethal effects of the conditions of the contemporary operational environment. The new platform entails activities related to the design and development of new dedicated vehicles—command systems—which, in the model being developed, have a different function compared with the current model. This different function implies that the vehicles should replace the existing assets in which work is performed and enable the achievement of the objectives of the new model.

For the needs of the entire CP, and specifically for the needs of the Command Group, it is necessary to develop different command systems—command vehicles (CVs)—which will form the basis of the command post.

Command vehicles with the function of the Operations Centre (OC), under the command of the Deputy Commander, would accommodate the operations duty officer and part of the personnel from the Command Group. These CVs are the central element of the Command Group at the CP, thereby not violating the current regulation concerning the place and importance of the OC within the CP (Komanda Kopnene vojske, 2020; Komanda za obuku, 2014, para. 36).

Command vehicles for monitoring and directing combat actions (“Mobile Command Group”)—with the function of a rapidly deployable mobile command group (MCG)—would accommodate the commander and part of the Command Group when forming an FCP, or at another location during the conduct of combat actions from which the commander assesses that he can obtain a better insight into the course of the operation and exert greater influence on its conduct. While located at the CP, this off-road vehicle, together with the OC vehicle, forms a single whole, and in that situation the Command Group is entirely located in one place. Such an arrangement is established when there is no need to engage the commander elsewhere, or when combat actions are not being conducted, based on the commander’s decision. This preserves the current regulation that the Command Group may be deployed in the OC or in a mobile OC (GŠ VS UPiR J-5, 2017, para. 712). Similar regulation has also been implemented in other armed forces around the world. The experience of our armed forces is based on the former BTR-50PU, which, among other purposes, was also assigned for the needs of the brigade commander. At present, if the form of an armoured personnel carrier is chosen, due to the required size of the appropriate space for the brigade level and the operational level, the prototype of the “Lazanski” armoured personnel carrier would be suitable (Jugoimport, 2025).

Command vehicles for the operations subgroup would accommodate the part under the command of the Assistant Chief of Staff for Operations. The CV "Operations" would accommodate personnel who are not assigned to the Command Group. Personnel from S/B/L-2, 3 (5), 7, the Military Security Agency, and the Military Police may also be engaged in the Operational Planning Group under the command of the Chief of Staff. In that case, some of them would temporarily be deployed at other locations within the CP, depending on the needs.

Command vehicles for the support subgroup would accommodate the part under the command of the Assistant Chief of Staff for Support or the Chief of S/B-4. Given that part of the personnel belonging to the sections within the support subgroup are in any case deployed at the Log CP, standard operating procedures determine which personnel are located in the CV for the support subgroup, that is, which remain at the CP and which are deployed at the Log CP. By decision of the commander, depending on the requirements, these CVs may also be deployed at the Log CP at brigade level.

Command vehicles for operations planning ("Operations Room"), with the function of an operations planning room under the command of the Chief of Staff, would be used for the deployment of the Operational Planning Group or, optionally, the Group for Planning Branches and Sequels of the Operation or the Group for Planning the Next Operation, depending on the phase of the combat operation. The vehicle needs to be equipped with the technical capabilities for commanding subordinate units, as in the case of the CV for the Command Group, so that, if necessary, it could assume the role of commanding units or be directed to a secondary important axis of engagement of the unit. This enables greater flexibility and resilience of the command system.

An organisation with five command systems is flexible and adaptable to the contemporary conditions of the operational environment. At different levels of command, it is necessary to consider the number of required command systems; however, the requirements for the engagement of units should be taken into account. The current Land Forces brigades of the Serbian Armed Forces, with 11 battalions and often an attached unit during the conduct of a combat operation, represent a complex structure which, in terms of composition, exceeds some current Western and Eastern organisations of the same rank in terms of the number of units included in the organisation. In this regard, the size and composition of the CP must be adapted to the area of operations in which such a unit conducts an operation (Figure 4).

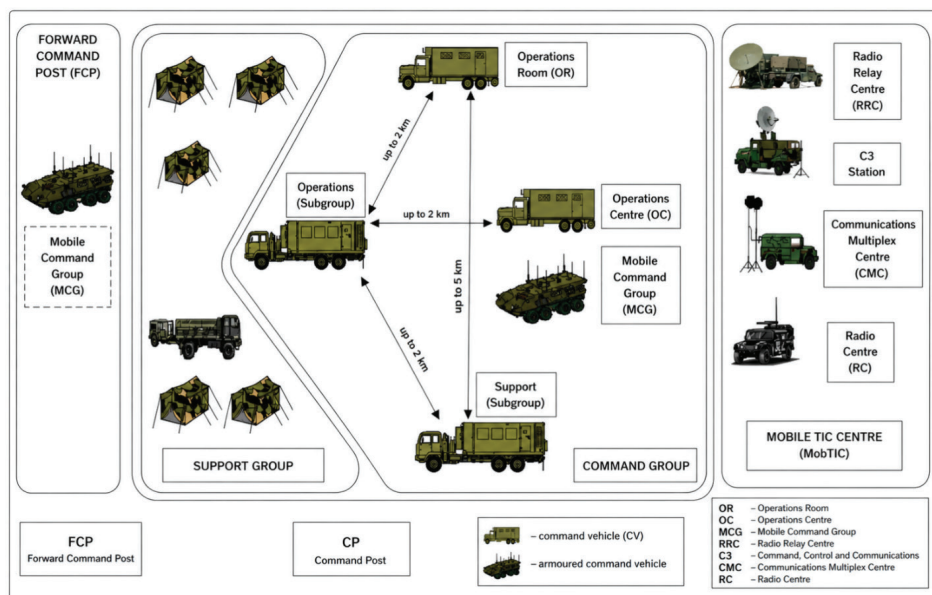


Figure 4. Deployment of the Enhanced Command Post Model Elements (Author's elaboration)

This complex structure must be accompanied by a complex telecommunications and information system. In order to achieve the required level of data flow, the TIS must be expanded to the command systems deployed within the Command Group. Changes in the CP server architecture, which would be supported by the MobTIC, would imply the addition of a high-capacity CP network based on modern technologies, similar to 5G mobile telephony or another high-throughput, short-range network.

Following a large number of technical and technological solutions in the development of various automated systems for defence purposes, practice, primarily in more developed countries, has created the need to establish information systems (IS) that will facilitate command over units in combat operations. The basic objective was to create a common approach for services used in monitoring the situation and making decisions, in order to enable faster action and more precise management of combat operations in relation to the enemy. In this way, several ISs were integrated under a single platform in order to create a command-information system. For CIS to have real significance, command support must be provided in real time as events unfold, or in near real time, with any delay in information caused by technical or other limitations not affecting decision-making. Based on experiences from foreign solutions, signifi-

cant CIS sub-elements for the needs of CPs and the command system in the Serbian Armed Forces can be identified:

The Common Operational Picture (COP) is a display that, on the one hand, should enable the presentation of information on the location and status of friendly forces from sensors located on soldiers, vehicles, military equipment, and the like. On the other hand, and more importantly, it should display information on enemy forces obtained from various intelligence sources, sensors, and other data sources. All information is displayed at a central location in the OC, OR, and MCG at all levels of command participating in the operation.

An information system for supporting the operational planning process. What was not considered in detail in the stated model, but is a necessity in contemporary CIS, is the introduction of a decision-support system in the military decision-making process, that is, in the operational planning process, whereby it would also include certain decision-support tools. In considering this issue, one must proceed from the fact that an initial planning error is the most dangerous, as it may subsequently lead to an entire series of incorrect conclusions.

The second activity for improving the command post model is the improvement of the possibilities for deploying elements and relocating the command post. This activity is primarily directed towards the objective of increasing the resilience of the command post. The current model, burdened by slow and complex procedures for establishment and relocation, automatically becomes more exposed to all conditions acting from the enemy towards friendly forces. Consideration of such improvement needs to be examined through separate directions of deployment and relocation.

Protection of the CP from detection and destruction through a dispersed disposition, in which the distances between elements are greater than the current limit, was not applicable in previous decades. Such a distance did not allow staff work and data exchange. In earlier periods, there were no modern means of rapid information transmission that would enable a large flow of data in real time over distances greater than those currently prescribed. The improved CP model, with its command systems, enhances the possibilities for CP deployment in relation to the current model as follows:

- increasing the distance between systems represents a more dispersed disposition and thereby fulfils the established objective of increasing the resilience of the command post;
- a more dispersed disposition reduces the predictability of the deployment of CP elements, since it is always assumed that the enemy is familiar with the doctrinal templates of our forces and therefore usually knows approximately where the command post is located; a dispersed disposition makes it more difficult for the enemy to predict and determine a more precise CP location before reconnaissance, that is, if the enemy does not have the capability to conduct reconnaissance;
- deployment possibilities enable a certain degree of flexibility in organisation and provide the commander with deployment options in order to reduce risk and predictability.

Improving the possibilities for CP relocation in the contemporary operational environment is particularly significant in operations where the increased dynamics of actions require the movement of units in order to follow the movement of manoeuvre units or as a result of detection. The possibility of rapid CP relocation and flexibility in relocation is becoming increasingly important in the contemporary operational environment. On this basis, two basic types of command post relocation to the next deployment area can be predefined.

In Variant 1, relocation is carried out in two columns. The Mobile Command Group (Commander) is operating at the FCP. The Operations Centre (Deputy Commander), "Operations", and the MobTIC relocate to the new CP in the first column. The Operations Room (Chief of Staff) and "Support" remain at the CP in operation and prepare for movement. They begin movement in the second column once the MobTIC has been established and put into operation at the new CP.

In Variant 2, relocation is similarly carried out in two columns. The Mobile Command Group (Commander) is operating at the FCP or at another remote location. The Operations Room (Chief of Staff), "Support", "Operations", and the larger part of the MobTIC relocate to the new CP in the first column. The Operations Centre (Deputy Commander) and a smaller part of the MobTIC remain at the CP in operation and prepare for movement. They begin movement in the second column once the basic types of communications have been established at the new CP.

A dispersed disposition makes it more difficult for the enemy to detect command post elements. It also reduces the possibility of destroying a larger amount of equipment and personnel with a single precision-guided or cluster strike. With regard to deployment, the new command systems also enable personnel to work from a separate location to a certain extent. In practice, this means that, in situations where a command post is established in a populated area or at a location that is not completely outside populated areas, personnel have the possibility of transferring work from vehicles to designated facilities or rooms.

Effects of implementing the new command post model

Effects represent the final product of improving the command post model that performs its function under the conditions of the contemporary operational environment. They are the positive and negative consequences of the activities implemented in improving the model and provide a response to the conditions that generally have a negative impact on the existing model. The anticipated effects of the new command post model reduce the negative effects achieved by the enemy, while at the same time improving the efficiency of friendly forces and making a positive contribution to the entire command system. In this way, effects are achieved that derive from the development objective of the new command post model.

Based on the stated formulation and the requirements set by the objectives, individual and group effects can be formulated in detail in relation to the following description. The effect achieved as a countermeasure primarily against enemy non-lethal assets and non-lethal effects is a reduced possibility of detecting the command post. The effect achieved as a countermeasure against enemy lethal assets and lethal effects is an increased possibility of "survivability". In addition to the effects that serve as countermeasures against enemy actions, an effect that further contributes to the improvement of our own system is the improvement of command post efficiency. This effect also responds to enemy lethal and non-lethal assets and effects, mostly indirectly. All these effects support the development objectives of the model and arise as a consequence of the implemented activities and actions aimed at improving the command post model.

A reduced possibility of detecting the CP is achieved by reducing the electromagnetic signature, rapidly changing the location of CP elements, and adopting a more dispersed disposition of command post elements.

An increased possibility of "survivability" of the CP as a whole, or of its elements in the event of an attack, may be achieved through a dispersed disposition of command post elements, a greater possibility of role substitution within the command, active and passive technological innovations in countering certain modern lethal assets, especially unmanned aerial vehicles employed for combat purposes, active jamming of navigation signals, improvement of data transmission speed, and improvement of the speed of reporting and warning systems regarding possible threats.

The improvement of CP efficiency in combat operations is an effect with multiple impacts that produces a positive effect on the work of the command post and the command system. As stated in the definition of the CP, its role is to support the work of the commander and the command-staff in the planning, preparation, and conduct of operations (GŠ VS UPiR J-5, 2017, para. 602). The central point in the conduct of operations that are the subject of this research is decision-making by the commander. All existing human and material resources at the CP have the purpose of directly or, to a greater or lesser extent, indirectly supporting the commander's decision-making in the shortest possible period of time. This is achieved through the effects of improved automation of work at the CP, visualisation of the area of operations, unification of parts of command posts, and improvement through artificial intelligence.

Research results

For the purposes of the research, expert evaluation was conducted by applying the following techniques: the survey method, through questionnaire-based polling, and the statistical method. Out of 49 potential experts, 40 individuals were selected as experts on the basis of competence assessment, taking into account the relevant indicators required for expert evaluation. The questionnaire contains 42 questions/

statements divided into five groups relating to dependent and independent variables. The five groups of statements are equivalent to the structure of the hypothetical research framework and represent the indicators of the hypotheses. All statements were measured using a five-point Likert attitude scale. The survey was conducted through a questionnaire in June–July 2025 with personnel from the University of Defence.

Based on the design of the questions and the size of the expert group, the calculation of agreement among expert opinions was performed using the chi-square test (χ^2) and standard deviation (s). Although measuring agreement by means of the chi-square test was sufficient, measurement by standard deviation was also applied in order to identify finer details of disagreement among experts that may be the subject of consideration and discussion. The reliability of the test was also measured in two ways in order to identify details concerning the relationship of all experts towards the questions and the instrument itself. The quality of measurement by the tests was verified using the Intraclass Correlation Coefficient (ICC) and Cronbach's alpha test (α). The obtained statistical data consistently confirmed that the agreement of the expert group was extremely high and reliable, while, on the other hand, the methodological correctness and robustness of the data set were guaranteed.

The theoretical context of the paper is structured equivalently to the methodological sequence of hypotheses and indicators for their verification, thereby enabling a parallel consideration of the context through questions grouped as the stated elements of the model. The research fully confirmed the validity of the assumptions of the theoretical part described through the factors of the model.

By moving through the factors of the model, an improvement of the command post is achieved that, to the greatest extent, provides a response to the threats of the contemporary operational environment. In addition, the model also offers an improvement of the command system through greater operational effectiveness, flexibility, protection, and mobility of command posts.

Conclusion

In the contemporary operational environment, the role of the CP in the conduct of combat operations is of essential importance. Science and practice are converging and opening the possibility for the CP model to be improved, precisely by using the integrated knowledge obtained through the modelling method. A CP model built largely on experience, and guided through science, acquires another dimension that is fully applicable. It opens space for different parts of the scientific and professional community and leads to a step-by-step solution in which the phases are precisely indicated.

The proposed model fully enables the formation of a staff organisation depending on the need. In the presented model, attention is primarily devoted to the Command

Group and other significant sub-elements of the Command Group at the CP, which the research highlighted as important for the functioning of the entire CP and, at the same time, as vulnerable to the effects of the contemporary operational environment. This organisation achieves a high degree of integration of all elements of the Command Group at the CP, and thereby of the complete command–staff. Technological and organisational innovations lead to a faster flow and processing of information and the timely delivery of the necessary data to the commander for decision-making purposes.

The current model is less flexible and largely predictable. In the improved model, depending on the conditions present in the operational environment, the commander has the possibility to increase or decrease the dispersion of the disposition of command post elements. Unlike the current model, the improved model in this way creates the possibility of one's own influence and choice, by which it adapts to the situation to a certain extent; that is, flexibility in decision-making and in the command system is increased. This achieves multiple effects that lead towards the objective of increased resilience and efficiency of the command post and success in a combat operation.

The research results confirmed the theoretical basis for improving the CP model through an approach based on the factors of the model. Focusing the research on individual factors of the model in the stated sequence leads to a step-by-step solution in which the phases are precisely marked and measurable, and which facilitates an easier understanding of the solution. Using the example of the CP, the possibility of improving a complex organisational-technical structure has been demonstrated, and as such it opens similar possibilities for researchers in the field of military sciences.

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Summary

This paper discusses a specific approach to modelling command posts in contemporary combat operations. The specificity of the approach is reflected in a detailed examination of the process through the basic factors of the model: conditions, subjects, objectives, activities, and effects. The consideration begins with the conditions of the contemporary operational environment in which the command post functions and in which contemporary combat operations are conducted. The complexity of these conditions is examined through various dimensions and considered through current global conflicts. Such conditions produce non-lethal and lethal effects on the command post model as the subject of the command post model. The command post model is analysed in depth, both structurally and functionally, and compared with similar current foreign solutions. Based on the interaction between conditions and subjects, the objectives for improving the model are defined, and from these objectives the development activities are derived. The approach to the development of activities is a complex process that, through various activities, leads to an improved command post model that corresponds to the established objectives. The improved model contributes to greater resilience and efficiency of the command post, which, as part of the command system, contributes to success in a combat operation. The stated model produces specific effects that respond to the conditions of the contemporary operational environment.

The approach uses various methods of scientific inquiry, with particular emphasis on multiple analyses, syntheses, and abstractions of the factors of domestic and foreign solutions of models and submodels, as well as on the hypothetical-deductive element of integrating foreign and domestic organisational and expert experiences in constructing a complex whole for military purposes. The proposed modelling approach through factors was tested through research on the improvement of the command post model and confirmed by experts. The paper is intended to assist researchers in the field of military and other sciences who, in their research, deal with the improvement of the organisational-technological structure of parts of the military system.

Keywords: *command post, modelling, contemporary operational environment, combat operations, organisational-technological structure, model improvement.*

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