PRAXELOGICAL ANALYSIS OF THE EFFICIENCY OF MANAGING
THE CRISIS MANAGEMENT TEAMS IN SAFETY THREAT
SITUATIONS AT SELF-GOVERNMENT LEVEL - CONCLUSIONS
FROM DEFENCE-RELATED EXERCISES AND TRAINING
IN THE YEARS 2008-2016

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ABSTRACT
Contemporary management of the country's defences at all levels
of management (command) is becoming increasingly complex.
Making the right decisions and coordinating the operations
of forces and resources allocated to crisis response, or applying
the rules of tactics, the art of operations and strategies
is not enough to maintain the high level of its efficacy.
Today's decision-makers must possess and be able to use
the knowledge on basic systems sciences, including praxeology,
organisation and management theory, economics, systems
theory, psychology, sociology and pedagogy.

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A series of defence-related training is an important element of the process of the state's
defensive preparations and improving the skills of managing the crisis management
teams. They need to be organised and carried out in a way, so that the provided
knowledge, developed habits and skills, addressed issues related to the country's
internal and external safety cause perfecting the conduct of the practical performance
of specific defence-related tasks and shaping the appropriate social attitudes
on the state's defences.

The defence-related training should be organised in the form of theoretical and practical
classes – defence-related exercises based on real (the lower is the level of management,
the more realistic it is in terms of the territory of operation) or as closely comparable
to the reality as possible situations based on which complex issues related to preparing
and carrying out actions in situations of threat to the state's security or during
war are solved.

At voivodeship level, the organisers of the defence-related training are the wojewoda
(wojewoda) and the local self-government bodies, such as the marszałek województwa
(województwa marshal) and, at the lower level of governance, the starosta (starost),
the wójt (commune head), the mayor and the president of the city and heads of organisational units (workplaces) who have been imposed with the duty or whose duties include the performance of defence-related tasks (SOCK - 11.01.2016).

The essence of management (command) is a purposeful activity of managers (commanders – fire – fighter, policeperson, soldier heading the sub-unit/sub-squad or unit/squad) and crisis management teams (headquarters, command organs), which involves impacting the subordinates in such a way that they follow the manager’s intent to achieve the goal(s) of an action and perform the tasks set by a senior superior (or set individually). Thus, the management (command) is a field of knowledge and a skill, as well as a complex, to a large extent formalised, the process of operation of managers (commanders) and support units (headquarters).

As a field of knowledge, the management (command) has its own theory, which exposes specific to the conditions of the state’s safety threats principles of management (command), directly resulting from the principles of the art of war. The analysis of the contents of these principles leads to the conclusion that they are closely related to the general principles of management. Whereas, the praxeology is based on these rules. On the basis of this dependence, one can conclude that praxeological values underlie the principles of management (command).

By virtue of long-term observations, interviews and surveys conducted among participants and self-government executives, it is important to note the relatively low interest of the respondents in the management theory and the resulting practical applications. Hence, the decision-makers should become familiar with the following analysis to act more efficiently in the face of threats and to act in accordance with the premises of praxeology (Journal of Laws of 2007, No. 89, item 590, as amended).

As a science on the efficiency of actions (Zieleniewski, 1964), the praxeology is considering issues – generally speaking – with the quality of individual actions (it does not deal with efficiency in manipulative terms, which is usually referred to as dexterity). The universality of this discipline of knowledge lies in the fact that the praxeology does not focus on the selected types of actions, but strives to cover all purposeful human actions.

The main problem of praxeology can be expressed by a question: how to act to act most efficiently. Thus, the task of praxeology is to build, justify and systematise appropriate recommendations and warnings concerning the most efficient organisation of actions.

The theorists of praxeology derive information, ideas, remarks and justifications from various sources. In general, these are centuries-long observations and experiences of human generations referring to various actions, with particular regard to successes and failures as well as their causes. As a result, many hints and warnings on human behaviour have been coined. Their examples can be found in various fairy tales, proverbs, sayings, etc. (Pszczołowski, 1967), which, in turn, have been used to build a set of guidelines for efficient acting.
Polish propagators of praxeology, such as T. Kotarbiński, J. Zieleniewski, T. Pszczołowski and others, have developed a number of guidelines for enhancing the broadly understood quality of actions. The main ones are: efficiency, economic profitability, advantageousness, preparation, rationality, accuracy, skilfulness, energy potential, simplicity and purity.

The literature emphasises that the efficiency of action depends, to the highest extent, on efficacy, economic profitability and advantageousness.

Efficacious (or purposeful) are such actions, or ways of acting, which, to some extent, lead to the effect intended as an aim (Kotarbiński, 1982). An action leads to a goal when it allows, facilitates, or leads to (in the case of gradable goals) a partial or full achievement of a goal. The efficacy of an action is, in general, gradable, since most goals are gradable. It is non-gradable (it assumes only two values: “zero effectiveness” and “full effectiveness”) when the action has only one non-gradable goal.

The preparation means the preparation of an action. It is a form of an efficient action because every action requires preparation, and inappropriate preparation must reduce its appropriateness. The result of the preparation is an action plan. According to the requirements of praxeology, a good plan should be:

- purposeful, that is, indicating a sequence of actions that actually lead to achieving the intended goal;
- feasible – meaning achievable;
- theoretically and practically consistent – meaning it must be internally consistent (not incompatible), and in the implementation its components should not interfere with, but rather facilitate, the performance of successive actions;
- transparent and clear – meaning one that is not difficult to understand and showing simplicity;
- rational – meaning based on reliable knowledge and including the scope of knowledge of the plan’s author and its implementers;
- flexible – allowing for possible changes to be made, according to the changing situation;
- adequately detailed – this means that it can be neither too detailed nor too general; it should be adapted to its implementers;
- time-bound, meaning containing not only the start date but also the end date of its implementation;
- comprehensive – meaning covering the whole task and all its substantial problems.

As a summary of deliberations on the issue of preparation, the following words of T. Kotarbiński can be quoted: “…the longer is the preparation, the shorter is the work” (Kotarbiński, 1982). This brief statement seems to fully reflect the essence of the preparation of an action. Therefore, this should be fully exploited in the stages (phases) of crisis management, in particular the prevention or preparation in which the planning process takes place.
The rationality, as well as other qualities of efficient action means both the trait and the evaluation of such action. Rational is considered to be such an action that:

a) is consistent with the knowledge of the doer and performed according to a particular model – this is known as methodological rationality of an action;

b) is adapted to real circumstances and conditions of an action – then it is a subject rational action.

The characteristic trait of rationality is that it refers only to people – participants in a given action. Therefore, one talks about the rationality of thinking or acting of these doers as well as various manifestations of this rationality reflected in used procedures, methods, etc.

The accuracy of an action means that it is implemented in a similar way or in a way closest to the pattern. It can therefore be concluded that the action is the more accurate (is performed the more accurately), the less its results differ from the intended ones (Zieleniewski, 1964).

The skilfulness is considered to be a form of efficiency of an action if not only important issues have been taken into consideration when preparing the action plan, but also minor ones alongside less important secondary issues, not contradictory to the main ones (Zieleniewski, 1964). It is clear from this statement that every action, whenever possible, should strive to achieve the greatest possible – going beyond the main goal – advantages, with priority being given to its implementation.

To act energetically means to put enough energy into action, in other words – to put everything that is needed into action (Kotarbiński, 1982). The energy potential is a factor that has a significant impact on the efficiency of an action. Practice shows that the lack or low energy potential of subjects of an action often causes its low efficacy. An action can be defined as simple when it is composed of a relatively small number of elements relevant to achieving the aim for which the action was organised (Zieleniewski, 1964). On the other hand, it should be noted that there cannot be fewer elements than necessary. Consequently, striving for the simplification of actions cannot lead to the negation of their basic meaning – that is, to ensure the possibility of achieving the goal.

The purity of action occurs when as little as possible fragments that do not contribute to achieving the goal appear in the process (Zieleniewski, 1964). This trait of an action means that it should contain the smallest number of various types of disturbances, interruptions, inaccuracies, etc., and that it should be devoid of traits of lack of organisation or even simple untidiness.

The above-described forms of an efficient action, also referred to as directives, guidelines or values, do not cover all those mentioned in the literature. As it has been already emphasised, among the listed values, efficacy, economic profitability and advantageousness determine, to the greatest extent, the efficiency of an action. According to praxeologists, other forms have less impact on the level of efficiency of a given action. Therefore, this dependence can be graphically represented as follows:
The issues addressed by the praxeology are pursued in several basic areas – in the organisation and management theory, economics, sociology, psychology, general warfare theory, designing methodology, exploitation theory and others. At the same time, the substantive content of praxeology has been enriched by the parallel development of operational research, the programming theory, the game theory and the decision-making theory. The operational research and programming theory have entered praxeology as methods facilitating decision-making that maximise the achievement of the intended goals (especially in a coordinated team action).

As it has been previously stressed, the praxeology deals with improving an individual, collective (where more than one person acts independently of each other) and team action (where more than one person are acting together, that is cooperating). An example of team action is the management (command), since it refers to a specific team of people linked by a common goal. The management (command), as a number of other forms of management, is a type of human activity. Depending on the criterion, many classifications of management (command) can be distinguished. Taking into account the subject matter under consideration, it is enough to assume the division of management (command) based on the type of tasks performed in the safety threat situations and after the occurrence of cataclysms (natural disasters).

The management is considered to be one of the basic notions of organised human activity, including defence-related actions for our country’s safety. “Generally speaking, the management can be understood as the impact of one (managing) object on another (managed) object aimed at the managed object behaving (acting or functioning) towards achieving the set goal…” (Encyklopedia Organizacji i Zarządzania, 1981).
The management occurs when the following conditions are met:

1. There are two interrelated systems: managing and managed.
2. These systems are linked together, i.e. connected by certain ties.
3. Both systems must have a specific variety of action (a set of possible actions).
4. Both systems share a common goal of management.
5. The managing system must interact with the components of the managed system, thereby causing the desired (in accordance with the goal of management) changes of states, i.e. the desired action of the latter.

The management takes place in the management system (Fig. 2). This system includes both systems mentioned above (managing and managed) and the relations between them.

![Fig. 2. General diagram of managing the crisis management organisational teams](image)

Source: own elaboration

Indeed, the composition and structure of the management system prove that it is a kind of system. Therefore, a systemic approach can be applied to it, as a result of which the management system should be seen as a sub-system, system and supersystem. In turn, this allows to distinguish individual sub-systems of the management system, which is necessary in view of the need for further deliberations.

On the other hand, the process is “a series of successive and interdependent events” or “the sequence of successive and specific cause-related changes representing stages and phases of development of something...”.

Based on the above characteristics, it is possible to formulate the premise that actions taking place in the management system have traits of a process. This kind of process is called the management process.
Due to the fact that both the management process and the system in which it takes place have traits of a system, the management process should be treated as a type of system. Consequently, it consists of a number of components and ties which link them together. The conducted analyses of the management system and process fully apply not only to organisational units at self-government level but also to sub-units and units of the fire brigade, the police and the army. The decomposition of the process of managing the actions of these units, due to the order of these actions, allows to distinguish the following major sub-systems of this process:

- managing obtaining the readiness to act;
- managing direct preparations for the performance of specific tasks;
- managing the performance of these tasks;
- managing reconstructing the capabilities after losses in people and equipment.

Each of the above sub-systems of the system of managing the defence-related actions differs from the others in many specific traits, while remaining in close connection with them (Fig. 3). It can therefore be stated that these sub-systems are stages of an action that have been defined in the Act on Crisis Management of 2007.

![Fig. 3. Essential sub-systems of the process of managing the crisis management organisational teams](source: own elaboration)
For example, the decision-making sub-system consists of the manager (commander), his/her deputy, the staff of the advisory team (headquarters) and the logistics of a given level of the crisis management system, while the task-setting sub-system consists of the lower level managers forming the system mentioned.

The system of managing the crisis management team “lives” thanks to the process of making decisions and communicating them for the implementation taking place “inside” it (Fig. 4). This process includes activities carried out in individual sub-systems of the crisis management system (Fig. 5):

- receiving tasks to be carried out (independent setting of goals to be achieved);
- analysis of tasks and conditions for carrying them out;
- assessment of the abilities and identification of variants of carrying out the tasks;
- making a decision on carrying out the tasks;
- setting the tasks;
- control of preparation and carrying out the tasks.
A detailed analysis of individual undertakings in managing a team in crisis situations leads to the following conclusions:

1. Task-related data may come from the supervisor, own reconnaissance sub-system or from other sources (e.g. from the interacting systems). These data are the result of an action of these systems as their final product.

2. The analysis of data on tasks is carried out by the decision-making sub-system. The following should be considered: the method and sequence of carrying out the tasks (their importance), the location of objects in the field, access routes, the evacuation of people, etc.

3. The assessment of the ability to carry out and specifying the variants of carrying out the tasks also takes place within the decision-making sub-system. This set of undertakings should include the assessment of the ability to carry out the task by organisational units, the ability to use the full-time and allocated resources providing information about the event, the distribution of the population in the threatened area and its safety as well as other conditions affecting the decision.
4. The next stage of the process of managing the organisational units is also implemented by the decision-making sub-system. Making a choice and deciding on a particular variant of carrying out the tasks is the most important part of this process. The content scope of the decision depends on whether the tasks are carried out by the system on its own initiative or at the request of a supersystem. In the first case, the decision applies only to elements that have not been specified by the supersystem, and in the second case – the decision is made in its full scope.

5. The decision is communicated to its implementers (launching the task performance sub-system) by the task-setting sub-system with the partial participation of some elements of other sub-systems (e.g. the decision-making system and the task data delivery system).

6. The last group of undertakings of the process of managing the organisational units is carried out by selected elements of the decision-making system and the task-setting system. For example, the manager (commander) of an organisational unit, who is part of the decision-making sub-system and the task-setting sub-system, due to his or her capacity, is obliged to control the preparation and performance of these tasks.

The analysed processes and sub-processes, implemented in the system and sub-systems of managing the crisis management systems at self-government level, have a number of common and distinctive features. Undoubtedly, what connects them is the manner of functioning, based on the processing of certain information. Therefore, the system of managing the organisational units and its individual sub-systems can be considered as ‘input-output’ systems. This means that certain information enters each of the above-mentioned sub-systems, then it is processed within the system to, finally, leave the system in the output form to ultimately appear at the input of another sub-system. The information transformation process is carried out inside a given system (sub-system), that is, between the ‘input’ and the ‘output’. Its essence is to change the input information into the output information.

Thus, the concept of a change is related to the functioning of the so-called information systems (i.e. processing the information) and, therefore, also the system of managing the organisational units at self-government level and its individual sub-systems. In turn, causing changes is characteristic of an action, which involves contributing to the creation of states of affairs that are desired by the doer (Zieleniewski, 1964), and in this case – by the system of managing the organisational units. For this reason, it can be assumed that “an action is an intentional, conscious and any human behaviour” (Encyklopedia Organizacji i Zarządzania, 1981).

Thus, bearing in mind that:
   a) the system of managing the organisational units in safety threat situations is a kind of system;
b) a transformation is taking place ‘inside’ it, that is, de facto, a change of information;
c) any change is the result of an action
the action process is taking place in the system of managing these units. In that sense, the system is also an action system.

As it has already been emphasised, science on efficient acting, i.e. praxeology, deals with the analysis of one- and multi-entity actions. This being the case, after a brief analysis of the system of managing the organisational units at self-government level as the action system, one can go on to characterise its functioning in the aspect of praxeological values of an efficient action.

The praxeological directives are used, above all, to assess a given action in terms of its efficiency.

The sub-system of managing the crisis management organisational teams, as it has been previously described, is a kind of an action system. This means that a certain action is taking place ‘inside’ it. If so, the system can be assessed in terms of its efficiency expressed in terms of praxeology.

EFFICACY OF ACTION OF THE SUB-SYSTEM OF MANAGING THE CRISIS MANAGEMENT ORGANISATIONAL TEAMS.

It is necessary to determine the level of achievement of this system’s goals to assess the efficacy of the sub-system of managing the crisis management organisational teams.
It results from the systemic approach that the system of managing the crisis management organisational teams comprises the state’s safety system on the same level as other sub-systems, including the executive ones. However, the specificity of structures of such action systems as the organisational units of the gmina (commune) and powiat (poviat) is that the mutual ‘penetration’ of their respective sub-systems is so deep, and their interdependencies are so strong, that it is difficult to separate these sub-systems. Consequently, it is extremely difficult to sublimate such goals of these sub-systems which can be used to assess the efficacy of action of each of these sub-systems. Thence, given the lack of other available methods, it is appropriate to use the approach preferred in the systems engineering, according to which the effectiveness of action of any management system is demonstrated by the effectiveness of the action system as a whole (Szkoła Podstaw Inżynierii Systemów, 1979).

Taking the above methodological standpoint as the basis for further consideration, it should be consistently stated that in the case of the executive system, its effectiveness depends on the effectiveness of the final result of an action, that is, carrying out such activities, so that, for example, the safety of the population is as high as possible and the losses are minimal.
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Therefore, the assessment of the effectiveness of the sub-system of managing the crisis management organisational teams should be carried out in terms of the level of effectiveness of carrying out the individual tasks. Hence the conclusion that such an assessment should be of ex-post assessment nature and it can be carried out with respect to both separate tasks of less importance and all of the tasks as a whole. In consequence, it should be assumed that the perceived effectiveness of the system of managing the crisis management organisational teams can take practically all previously characterised states of the effectiveness of action of any system. This means that the discussed sub-system of managing the crisis management organisational teams can be:

- effective – if the action system achieved the set goal of an action entirely (it carried out all the tasks effectively);
- partially effective – if it achieved this goal partially (it carried out some of the tasks, which means that only part of the goal was achieved);
- ineffective – when none of the tasks was carried out;
- counter-effective – when the effects of an activity turned against its implementers.

ECONOMIC PROFITABILITY OF ACTION OF THE SUB-SYSTEM OF MANAGING THE CRISIS MANAGEMENT ORGANISATIONAL TEAMS

The economic profitability of every action is assessed by the ratio of the value of the useful result of this action to the value of its costs.

In the case of the system of managing the crisis management organisational teams, it is most difficult to determine the useful result. Generally speaking, the expected (desired) results of the planned action of the system are the useful result of the action of any system. Therefore, the value of these results can be defined as a total positive value of individual positives achieved during the acting of the system. In turn, the value of costs of action is defined as the total value of all the losses resulting from the action of the system. In the case of a system of managing the crisis management organisational teams, which is a component of the country’s defence system, an attempt to identify the useful result and the costs of its action must involve separating them from the total useful result and the costs of action of the state’s defence system. From the methodological point of view, this is a very complex problem, since it is extremely difficult to find common measures to assess the economic profitability of the system of managing the crisis management organisational teams and the civil protection system separately. In this situation, it is permissible to rely on the previously presented premise, according to which the assessment of functioning of any management system should be closely aligned with the general (final) results achieved by the overall action system, which one of the components is the management system. It results from this premise that the economic profitability of the system of managing the crisis management organisational teams depends on the economic profitability of actions of the state’s defence system. Thus, if the economic profitability of action
of this system can take on different values, then the action of the system of managing the crisis management organisational teams, in this aspect, may be:

- economical – if the ratio of the useful result resulting from the action of the system of managing the crisis management operational teams to the value of costs of this action will be greater than unity;
- economically indifferent – if the ratio is equal to unity;
- uneconomical – when the ratio of the value of the useful result to the costs is less than unity.

In that event, if, for example, the amount of forces and resources necessary to accomplish a given task is assumed as the measure of the economic profitability of action of the state’s defence system, then this action will be:

- a) economical – when less than the planned (normative) amount of forces and resources is used;
- b) economically indifferent – when the planned (normative) amount of forces and resources is used;
- c) uneconomical – if the system used higher than the planned (normative) amount of forces and resources.

It seems that the presented approach, as in the case of effectiveness, is a fairly significant simplification of reality. Its essence directly implies that the system of managing the crisis management organisational teams acts economically when the entire state’s defence system is acting economically and, if the latter is uneconomical, then the system of managing the crisis management organisational teams is also uneconomical. Of course, such an approach is not entirely true. Therefore, it is recommended to scrutinise the issue of ability to conduct a separate assessment of the economic profitability of action of the system of managing the crisis management organisational teams. Finding a suitable method will potentially allow for an in-depth substantive assessment of the functioning of the system of managing the crisis management organisational teams in the aspect of economic profitability and will enable self-regulation of the system.

ADVANTAGEOUSNESS OF ACTION OF THE SYSTEM OF MANAGING THE CRISIS MANAGEMENT ORGANISATIONAL TEAMS.

The advantageousness of action of any system is defined as the difference in the value of the total useful result and the total costs.

The value of the total useful result is a broader concept than the value of the useful result discussed in the analysis of the economic profitability of action of the system of managing the crisis management organisational teams. If the latter is the sum of all expected positive values (resulting from the plan) obtained as a result of action of the system, the value of the total useful result is the sum of the value of the useful result and all other (unplanned, unexpected) positives resulting from the action
of the system. The situation is similar in terms of the value of total costs (planned, expected + unplanned, unexpected) and the value of costs (planned, expected).

Transferring this context of deliberations onto the system of managing the crisis management organisational teams creates difficulties that are similar to those that emerged during the discussion on the effectiveness and economic profitability of the system. The main problem is the lack of a method that would allow to separate the advantageousness of action of the system of managing the crisis management operational teams from the advantageousness of the entire state’s defence system. In the current situation, based on the assumption of strict dependence of action of the management system on the results of action of the system, of which the management system is part, one can reach controversial conclusions. Pursuant to these, it is assumed that if the action of the state’s defence system in question is advantageous, then the action of the system of managing of the crisis management operational teams included therein is also advantageous, and if the state’s defence system acts disadvantageously, then the action of the system of managing the crisis management organisational teams is also disadvantageous. Of course, as in the case of effectiveness and economic profitability, putting things in this way is, at least, debatable. There are situations where the action of the system of managing the crisis management organisational teams seems to be advantageous, yet the action of the entire state’s defence system is disadvantageous. This last observation proves that the discussed dependencies should not be treated so unequivocally. That is why, in this case, specific targeted research is also required. Its results would primarily be of value to the managers (decision-makers, commanders) of various state’s defence sub-systems, guaranteeing the correct implementation of the self-regulation processes of these systems.

In view of the logic of the concept of “advantageousness” and the meaning of the above considerations, it seems that the action of the system of managing the crisis management organisational teams will be:

- favourable – when the difference in the value of the total useful result and the value of the total costs will be greater than zero;
- neutral due to the advantageousness – when the difference equals zero;
- disadvantageous – if the difference between the above values is less than zero.

Having regard to the content of the above arguments, one may be tempted to analyse the interdependencies between the characterised directives of an efficient action of the sub-system of managing the crisis management organisational teams. The reference point will be the three result forms of action of the sub-system:

1. Complete fulfilment of the task.
2. Partial fulfilment of the task.
3. Failure to fulfil the task.

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1 The analysis of actions of the Crisis Management Teams during the threat of avian influenza in 2006, the flooding in 2010 and after introducing, twice, the first ALFA alert state in our country (2012 and 2016) and after introducing the second BRAVO-CRP alert state (2016) leads to conclusions that the teams act appropriately, but it is difficult to say if their actions were advantageous.
PREPARATION OF ACTION OF THE SUB-SYSTEM OF MANAGING THE CRISIS MANAGEMENT ORGANISATIONAL TEAMS

This value characterising the efficiency of action of the sub-system of managing the crisis management operational teams does not require an extensive discussion. The reason is its obviousness. Not only the logic, but also the normative requirements demand the sub-system of managing the crisis management organisational teams to be ready for action. Due to the fact that this process is described in the literature (Gołębiewski, 2015; Lidwa, 2015; Więcek & Bieniek, 2014; Wróblewski, 2014), there is no need to characterise it here. In view of the above, it seems that the action of the sub-system of managing the crisis management organisational teams can be considered as ready (in the sense of praxeologically understood preparation) when it is (was) conducted according to the required procedure.

RATIONALITY OF ACTION OF THE SUB-SYSTEM OF MANAGING THE CRISIS MANAGEMENT ORGANISATIONAL TEAMS

The rationality is a category of “dual” use – on the one hand, it means a trait of thinking or action and, on the other hand, it is used to assess a given action. Bearing this in mind, it should be assumed that rational is such action of the sub-system of managing the crisis management organisational teams that is carried out according to a certain model of managing the organisations (Stoner, Freeman & Gilbert 2011; Stewart, 2002; Griffin, 1996). Due to the fact that models of managing the crisis management organisational teams are influenced by data, information and ways of responding in crisis situations, the assessment of the rationality of their action should not be difficult.

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Summing up the reflections on the praxeological foundations of managing (commanding) the crisis management organisational teams, it should be noted that the problem, although very interesting, is quite complex in itself. Another complicating factor is the lack of suitably broad methodological base (the Ministry of Science and Higher Education – Journal of Laws of 2011, No. 179, item 10), which is intensively developed in various research centres, supported by the practice of non-military events, such as disasters, floods, etc., and also based on the conclusions from exercises and training (the genesis of science on safety in our country goes back to the second half of the 20th century; more and more research on areas of safety were done as part of military studies; not until the Regulation of the Ministry of Science and Higher Education scientific and artistic disciplines were classified, where a scientific discipline in the area of social sciences, namely safety science and defence science, was established). For this reason, efforts undertaken to address national safety problems may, at least for the time being, be subjected to the risk
of a correct assessment of threats. Hence, their results and considerations contained in this publication may not be free from errors. Nonetheless, it seems that the analysed issues are so important that it is worthwhile to conduct further in-depth research and investigations.

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