

## THE IMPORTANCE AND TASKS OF THE TRANSPORT PROVISION OF SOLVING CRISIS SITUATIONS

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**Key words:** *crises situation, evaluation criteria, transport provision,*

**Abstract:** *The occurrence of crisis situation requires adopting whole range of measures with participation of large numbers of forces and resources. Almost no task in resolving these situations could be completed without carrying out transport related issues, i.e. the requirements on functional means of transport, trained operating staff and appropriate material resources. We may even state that the transport system must be prepared in the framework of planned pre-emptive measures to provide optimum transition to enable the fulfillment of specific tasks as a consequence of emergency events. Transport provision of crisis situation resolution priority concerns road transport and in a significant manner consists of the reduced transport operability of the area, of the transport provision of the evacuation and of the performance of repair and construction works on land communications.*

*In the segment of road transport it is important to have a working system of optimum utilization of motorized vehicles to fulfill the tasks of crisis management transport requirements and in an inevitable extent the transport of citizens, whereas in providing the operability of land communications the effective exploitation of road construction and earth moving machines and mechanisms to perform maintenance, reconstruction and construction works on land communications is necessary.*

### INTRODUCTION

No task of crisis solution agenda could be completed without solving transport-related issues, i.e. functional means of transport, trained operating staff and appropriate material resources. Transport provision has to take care of optimum utilization of the existing transport routes. Thus the transport quality is guaranteed, mainly as the reliability but also the capacity of transport routes is concerned. Transport system is unique, whereas an extraordinary situation within it may subsequently trigger critical conditions in other objects and systems. This is why the issue of crisis situations in transportation is also considered from the point of view of security and contingency management of the individual transport systems.

## TASKS OF THE TRANSPORT PROVISION

Regardless of the completeness of the tasks, it is apparent that transport provision fulfils the following roles in the framework of crisis situation support:

- the choice of the type of transport and coordination of transport systems usage with respect to their specific conditions and the possibilities of the fulfilment of tasks in non-standard conditions,
- using a specific type of transport for timely transfer of the deployed forces and resources into the areas of activity to resolve crisis situations,
- defining priorities, competences, the right to decide about how to use the available means of transport, transport routes and the necessary operating material,
- providing transport of material and equipment as required for the deployed forces and resources, including necessary processes of loading, unloading, trans-loading and improvised storage processes,
- coordination of supply transports with back-transport of threatened persons and animals including possible improvised modifications of the means of transport to suit this purpose,
- concentration, loading and transport of material defined for removal, including waste, unnecessary and damaged material as a consequence of activities in resolving crisis situations,
- taking care of complex provisions of own personnel allocated for the fulfilment of the tasks of transport provision highlighting health and safety issues, hygiene, rest and catering,
- inevitable technical attention dedicated to the employed transport and handling technology,
- providing operability of communication routes, their operational service and maintenance including the organization of security and control services.

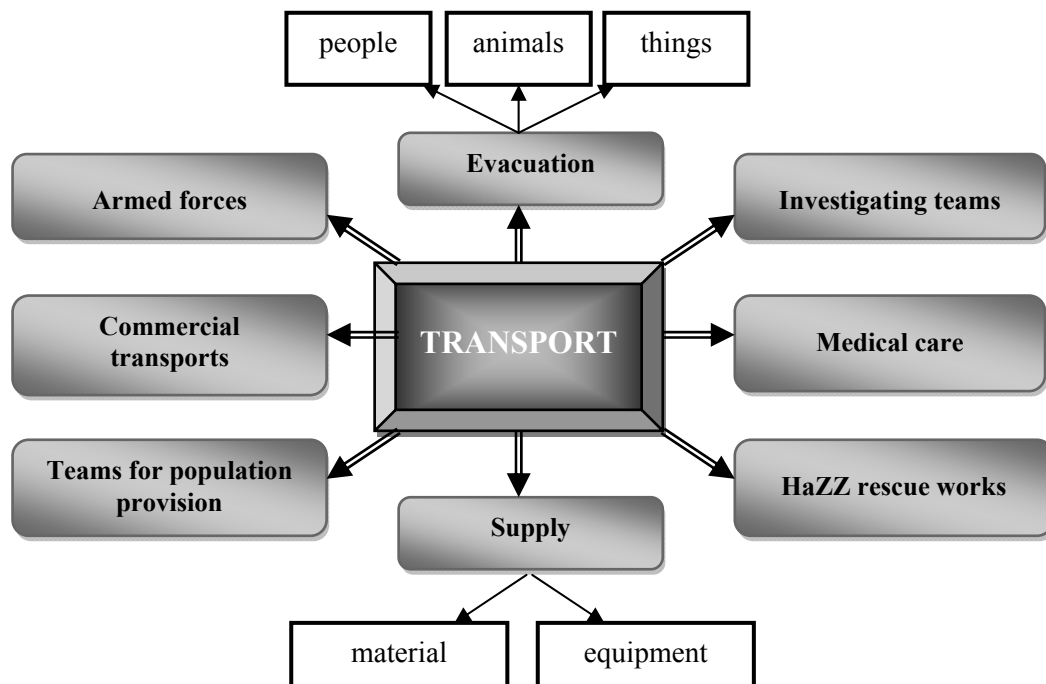


Fig. 1 The role of transport in resolving crisis situations (Sventeková, 2012)

Transport provision in crisis situation cannot be strictly separated, it is a part of all activities in resolving crisis situations.

- in supply logistics, it provides potable water supplies, supplies of food, materials, personal hygiene accessories for the affected persons,
- in medical supplies it provides transportation of the sick and injured from the threatened area to medical facilities, transportation of medical assistants and doctors to places of their deployment, transport of blood, medications, medical material,
- in rescue works the transport and mechanization resources are used by individual rescue units (firemen, helicopter rescue service, police, medical rescue service),
- in case of evacuation, the population, animals and the property under threat is removed into safety,
- transportation of forces and resources of fire and rescue corps for the purpose of rescue works,
- transportation of police corps investigators' teams and other units,
- transportation of the employees, materials and equipment of the renewal forces to prevent further damage and to perform disposal work.

It is really demanding to define the complete scope of tasks of transport provision and it depends on the causes, on the extent and consequences of the emergency event, on the number and type of deployed forces and on the resources to resolve crisis situation because of different possibilities of these forces due to being equipped with their own transport vehicles and different abilities of long-term operation with connections to material flows.

## EVALUATION OF TRANSPORT TYPE USED IN CRISIS SITUATIONS SOLVING

The position and significance of the each transport type result from its inherent possibilities and the way how it is possible to use them to secure the listed requirements. When evaluating the applicability of the individual transport types to resolve crisis situations, it is necessary to take into account general, logistic and crisis related factors, which are listed in the following table in more detail.

*Evaluation criteria of transport type*

**Tab. 1**

Criteria type	Criteria content	Criteria fulfilment			
		rail	road	air	water
<b>general</b>	Quantity	1	3	3	1
	Quickness	2	3	1	4
	Costs	2	3	4	1
<b>logistic</b>	Technical reliability	1	2	1	2
	Environmental protection	1	3	3	3
	Transport of special loads	3	1	3	1
	Access to resources	3	1	4	4
	Independence on the weather	1	2	3	3
	Protection of the subject of transport	2	3	1	2
<b>crisis</b>	Degree of readiness	1	2	3	4
	Resistance to negative influence	3	2	3	3
	Manouverability	2	1	3	4
	Operation renewal	3	1	4	4

1... maximum degree of criteria fulfilment

4... minimum degree of criteria fulfilment

The importance of **road transport** in resolving crisis situations increases and it plays a key role among the basic types of transport due to the increasing availability of cars/trucks, due to the development of road network as well as because of its features. The main advantages of road transport:

- high density of road networks,
- readiness and immediate availability,
- a large variety of universal and special transport vehicles,
- the possibility to be used off-road,
- possibility to be used in all stages of transportation,
- comparatively low vulnerability,
- it is possible to restore it in a comparatively rapid manner in case of disruption.

Certain disadvantages might only be caused by special requirements, exceptionally due to weather influence.

**Railroad transport** is the most productive type of terrestrial transport. Compared to other types of transport, it is relatively economic. It is particularly suitable for medium and long distance transportation of large quantities of people and material. It is possible to achieve quite high velocities in certain stages of the journey. An important feature is low dependence on the time of the day and the weather. In situations of crisis, its characteristics makes it predestined to fulfil the tasks connected with:

- general mobilization
- promoting self-defence of the country,
- evacuation of population and material,
- relocation of the injured,
- the tasks of civil emergency planning.

There are also disadvantages compared to the road transport, including mainly:

- railroad network is of lower density and therefore it is unable to comply with the requirements in all areas,
- it is more time consuming in fulfilment of transportation tasks,
- it is more vulnerable,
- it is more demanding from the time and resources point of view to restore,
- there are limited possibilities of improvising in transport technology.

**Air transport**, due to its particularities, is an indispensable part of transport provision in crisis situations. It is of substantial importance in medical and rescue works. In other situations, because of being demanding from the capacity and economic point of view, it is only a complementary but a necessary type of transport. The following belongs to major advantages of air transport:

- high transport velocity,
- independence on terrestrial communication routes,
- rapid readiness and good manoeuvrability,
- possibility of application in the areas which are difficult to access.

Major disadvantages of air transport are the following:

- comparatively low transport capacity,
- high costs,
- dependence on weather conditions.

**Water transport** is of a lesser importance for transport provision in crisis situations in our conditions, in particular because of low density of navigable water courses, low transport velocity and seasonal dependence. Its advantage is only in high transport capacity and economic efficiency. It will be used rarely. However, a specific situation will occur in case the crisis situation arises directly on the river or on the ship. Generally speaking, river transport and mechanization resources must be employed to solve it.

## CONCLUSION

The above listed tasks are provided by the respective government authorities, by carriers in the area of personnel and cargo road transport and by construction companies in transport construction.

The Ministry of Transport, Construction and Regional Development of the Slovak Republic provides coordination of the given activities on the whole territory of Slovakia:

- autonomous region,
- circuit authorities in the seat of the region in cooperation with municipalities,
- carriers
- legal and physical persons established in order to manage and maintain the land communications.

After the crisis situation is declared, the measures of transport provisions are carried out on the whole territory of Slovakia or on its part. Depending on the type of crisis situation, those forces and physical means are considered in transport provisions which are predetermined to perform its tasks and which are not to be used elsewhere to carry out different tasks as defined by special regulations. The vehicles of medical service and fire protection units, special emergency vehicles for measurement, assembly and repair purposes and vehicles of services necessary to perform special tasks and the vehicles, special motor and non-powered vehicles and motor vehicles which construction does not enable common transport of people and goods are not permanently allocated to perform the tasks of transport provision in crisis situation.

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## ЗАДАЧИТЕ И ВАЖНОСТТА НА ОСИГУРЯВАНЕТО С ТРАНСПОРТ ПРИ РЕШАВАНЕ НА КРИЗИСНИ СИТУАЦИИ

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**Ключови думи:** кризисна ситуация, критерии за оценка, осигуряване на транспорт,

**Резюме:** Появата на кризисна ситуация изисква приемането на редица мерки с участието на много сили и ресурси. Почти никоя задача при разрешаването на тези ситуации не може да бъде завършена без решаването на проблемите свързани с транспорта, т.е. изискванията за функционални транспортни средства, обучен оперативен персонал и подходящи материални ресурси. Дори може да кажем, че транспортната система трябва да бъде подготвена в рамките на планираните превантивни мерки, за да осигури оптимален преход, който да позволи изпълнението на специфични задачи, като последствие от аварийни събития. Осигуряването с транспорт, при приоритетното решаване на кризисна ситуация, засяга автомобилния транспорт и в значителна степен се състои от понижена работоспособност на транспорта в засегнатия район, от осигуряване на транспорт при евакуация и от изпълнението на ремонтно-строителни работи на сухоземните комуникации.

В сегмента на автомобилния транспорт е важно да има работеща система за оптимално използване на моторните превозни средства, която да изпълнява изискванията за кризисно управление на транспорта и в значителна степен да осигури транспорт за гражданите, като се има предвид, че е необходимо да се осигури работоспособност на сухоземните комуникации и ефективно използване на пътните строежи и пътно-строителната механизация за извършване на поддръжка, реконструкция и строителни работи на сухоземните комуникации.