

## LOGISTICS SUPPORT OF CRISES SITUATIONS SOLVING

**Eva Sventeková**

[Eva.Sventekova@fsi.uniza.sk](mailto:Eva.Sventekova@fsi.uniza.sk)

*Faculty of Special Engineering University of Žilina, Ul. Imája 32, 010 26 Žilina  
SLOVAKIA*

**Abstract:** *The contribution deals with the logistics support of crises situations. It shortly describes the preparing emergency plans and their implementation during the crisis. The paper refers to the special provision of crisis solving – information, technical, material, transport, health, supply and others. It mentions the main problems in logistics support of crises situation.*

**Key words:** *crisis, logistics support, prevention, transport provision, logistics provision*

### INTRODUCTION

A crisis event may take many forms. However, in order for an event to qualify as a crisis, it must be capable of causing or have caused loss of life or severe injury, significant property or environmental damage, or adverse public relations. Major categories of potential crisis events include the following:

**- Weather / Natural Disasters**

(Tornado, Earthquake, Wild and Industrial Fires, Flood, Hurricane, Landslide, Tsunami, Volcanic Eruption)

**- Natural Resource Crises**

Energy/Power Outage, Gas/Pipeline Damage, Hazardous Material Situation

**- Human Activities**

Bomb Treats, Civil Disturbance, Robbery, Murder

Crisis events involve a major weather, natural resource or technology disaster event that affects a large population of people, has a broad geographic impact, and / or is newsworthy.

Logistics may be defined as the process of planning, implementing and controlling the efficient, effective flow and related information from point of origin to point of consumption (including inbound, outbound, internal and external movement) for the purpose of conforming to the customer's requirements.

In Slovakia are not the tasks of logistics in the field of crises situations solving as good making as logistics in enterprises for example. The terminology illustrated this situation. In the Slovak conditions is possible to use for this specific logistics the concept *crisis logistics* or logistics in crisis.

**Logistics provision** of crises situations solving consists of complex measurements of preparation, prevention, reaction to creation and solving in the field of human resources, material, technical, health, transport and another specific services.

**Logistics support** of crises situations solving is the implementation of logistics provision's measurements in two sides:

- directly with benefit to human, animals and objects, that are involved in crises situations,
- with benefit to forces and resources setting to crises situation solving. (Fig.3)

### PARTS OF LOGISTICS SUPPORT IN CRISES SITUATIONS SOLVING

For logistics support of crises situations solving is most important to create concrete system. The specific properties of this system are intangible flows – services as health service, deliverance, displacement, accommodation, protection, etc.

These services can be bound by using some material. Some possible structure of elements in

logistics support system in crises situations solving is in figure 1.

Logistics support is

- system of measurements for transport, technical provision, services, health and material provision,
- quality provision of activities of forces and resources in crises situation solving by material and technical equipment,
- continuous process of planning, preparation, distribution and using of provision elements and services for implementing optimal variant of provision.

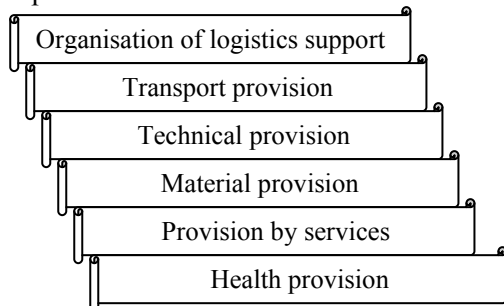


Fig. 1 Logistics support of crises situations solving

## SUBSTANTIALITY OF LOGISTICS SUPPORT OF SALVAGE, LOCATION AND LIQUIDATING OPERATIONS

Salvage, location and liquidating operations are realised in the time of special events, it means in the time of treat or influencing of special events. It stand-good also for least significant state of crises situations – emergency state, when are treated:

- life and health of human,
- environment,
- property.

Special events can be natural disaster, industry, transport or other operational accidents, or catastrophe. **Salvage operations** are activities for life guarding, health guarding of human and salvage of property and evacuation from dangerous area. **Location operations** are activities to barring of diffusion of special events. **Liquidating operations** are activities for effects elimination of special events.



Fig. 2 Health provision of logistics support

Possible substantiality of elements of logistics support of salvage, location and liquidating operations:

- a) *Organisation of logistics support* consists of determination and parts preparing of logistics support (groups, elements, their structure and equipment), methods of their activation, their movement, determination and methods of stationary resources using for logistics support, division of forces and resources of logistics to functional system, protection of logistics elements and areas of logistics activities.
- b) *Transport provision* means to solve method of forces and resources transport to the areas, provision of equipment and material transportation, manipulating operation with transported material, transport of evacuated people and animals, transport of evacuated material, including waste from salvage, location and liquidating operations, provision of information flow with order and regulating services.
- c) *Technical provision* deals with technical equipment of the forces and resources, with keeping technical resources in preparedness for their using, it also deals with permanent repair to provide operational reliability, effective using, to create areas of technical help with using of mobile transport means and equipment, to re-establish operation efficiency of transport means and mechanisms.
- d) *Material provision* consists of incoming, preparation, deconsolidation, and creating of material supply, organisation of sorting, short-time warehousing and manipulation with used material, deconsolidation of material from choosen warehouses and from local resources, complex provision with food, health material, water, etc.
- e) *Provision by services* consists of organisation of short-term accomodation, including its equipmentprovision of every energy types, preparing of food for evacuees and for rescue teams too, provision of drinkable mode, and another services (sanitation, washing, cleaning, clothes changing), social and psychological support of inhabitants, cultural provision. The special service in crisis situation is to find, to identificate and to inhumate of victims.
- f) *Health provision* means to provide health service to people in accidents, disease, finding and transfer of wounded people,

provision of blood, distribution of pharmaceuticals and health material, controls of epidemic situation, veterinary proceeding, etc.



*Fig. 3 Forces in crisis situation solving*

## LOGISTICS SUPPORT BEFORE AND DURING THE CRISIS SITUATION

With the logistics is to enumerate equipment, facilities and infrastructure due to the same play a vital role in supporting and ensuring the success of a mission. The logistics planning is today one of the pillars on any mission or for the purpose of supporting the actions of pre-suppression and suppression. It should have concepts like sharing and joint management of resources to create value for money and reduce the financial resources involved. The exercises and drills are a vital part of the process of planning, including the preparation of plans and the training of teams in the tasks set.

It is the logistics planning for crisis situation by identifying the problems encountered in the past at this level, the identification of existing resources in the county, with interest to the mission, the referencing of entities that have capabilities and especially the coordination of all elements, answering the questions who, how and when.

The logistics needs are in order to improve increase the capacity and speed of response, through exercises and drills with the participation of all elements of crisis management:

- Before the crisis situation
  - priority in identifying stocks with relevant logistics (equipment, vehicles),
  - priority for joint exercises between all stakeholders.
- During the crisis situation
  - priority of support to combat crisis situation, the evacuation of people and operations of aftermath, in order,

- the logistics support of actions to combat crisis situation encompasses several areas,
- food and water supply,
- maintenance of equipment,
- transmissions,
- transport,
- lodging, rest and recovery,
- logistics park of machines,
- logistics of humanitarian support.

## INFORMATION TECHNOLOGY AS A LOGISTICS SUPPORT OF CRISES SITUATIONS SOLVING

Risk is something we all struggle with. Many of us have made a career out of understanding the potential impacts, and creating mitigation strategies and response plans for every possible event. The reality is, there are so many events, so many possibilities that it is utterly unimaginable to prepare our society for every risk.

The aim of crisis management is to be prepared to every events as good, as it is possible. To make this aim true, the crisis management uses many information technologies to describe the characteristics of event and to find it as soon as possible in time and place.

GMS, GPS, Extranet, GPRS is a set of technologies that we can use not only in privat sector of enterprising, but in crises situation solving too.

The Data-GIS is an application for control of fleets in the area of GIS (Geografic Information System) to know the position of vehicles in real time, to send and receive messages of equipment, and for fleet management. In the operating room, zje module allows management through the graphical interface view for the fleet of cars, their position in digital map, their speed, the miles done, and direction of travel. The alarm system allows generating the beginning of the motion of vehicles and issue alerts for SOS. Each car has a box with GPS system, for sending information, which is operated autoamtically when the ignition of the vehicle.

ICT (Information and Communication Technologies) is an important tool for the normal performance of any mission. For crisis management it is expected that in the future will be intertwined with the fire departments of the countries to update the data.

RIOS program, the interface Surveillance System alert and Water Resources for national civil

protection authorities is the application that provides real-time information hydro-meteorological and water quality collected by automatic station with teletransmission. This application is a fundamental support in the management and planing for possible flooding and in a forest fire too. With these information on the levels of water present, the means areas get the task easier by knowing where they will supply.

The advantage of this technologies has been useful in relief operations in treats of crisis situation solving. For example in forest fire is possible to locate with any precision the beginning of an outbreak of fire, by examining the concentration of car-fighting that occurred in the first place. In this context it is possible to ascertain, almost in real time, the perimeter of a fire with the observation in digital map of the positioning of the means involved. As an example of the daily tasks carried out with the use of ICT applications for crisis management, media management and resource management, they permit monitoring and monitoring of all events through the registration and classification of these, classification of severity, upgrade of facilities and resources involved in its resolution, registration of all activities and operational decisions and monitoring the activities of air resources.

The main features of these programs emphasize is the ability to identify each occurrence in the resources involved and available, its classification and the ability to fight, supply of permanent points of situation, updated and organized, to provide information in real-time, based on priorities and response times.

## CONCLUSION

Special events and crises situations are special for high number of people, animals, buildings and equipment, for that are changed standards conditions of their living. For solving of these situations are used forces and resources and their main activities are saving of people and equipment, location and liquidating operations and it consists of organisation, technical and material provision. This provision consists of material and information flows, realised with logistical requirements – logistics support of crisis situation solving.

## REFERENCES:

- [1] DRDLA, P.: *Technologie a řízení dopravy – městská hromadná doprava*. Pardubice, DF JP UP, 2005, 136 p., ISBN 80-7194-804-7.
- [2] NOVÁK, L. a kol.: *Krizové plánovanie – vysokoškolská učebnica*. Žilina, EDIS 2005. 210 s. ISBN 80-8070-391-4.
- [3] SEIDL, M.: *Logistika a krízové situácie*, In: LOGI 2005, „Komplexní služby v přepravních řetězcích“, UPCE, Pardubice, 2005, ISBN 80-86530-25-6.
- [4] SEIDL, M., TOMEK, M.: *Niektoré problémy kritickej infraštruktúry*. In: *Civilná ochrana*. Bratislava, ÚCO MV SR, roč.10, č. 6/2008, s. 41-46, ISSN 1335-4094
- [5] *Dopravná politika Slovenskej republiky do roku 2015*. Bratislava, MDPT, 2005, 42 p.
- [6] *Vývoj v doprave, poštách a telekomunikáciách SR 2006*. Bratislava, MDPT, 2006, 62 p.
- [7] <http://www.continuitycentral.com/feature053>.

## ЛОГИСТИЧНА ПОДКРЕПА ПРИ СПРАВЯНЕТО С КРИЗИСНИ СИТУАЦИИ

**Ева Свентекова**

[Eva.Sventekova@fsi.uniza.sk](mailto:Eva.Sventekova@fsi.uniza.sk)

Факултет по специализирано инженерство, Университет - Жилина, ул. "1 май" 32, Жилина 010 26  
СЛОВАКИЯ

**Ключови думи:** криза, логистична подкрепа, превенция, осигуряване на транспорт, логистично осигуряване

**Анотация:** Приносът на статията е относно логистичната подкрепа при справянето с кризисни ситуации. Накратко са описани плановете за незабавно действие и внедряването им по време на криза. Третират се компонентите на справянето с кризата – информация, техника, транспорт, здраве, снабдяване и т.н. Споменати са основните проблеми на логистичната подкрепа при кризисна ситуация.