

Some Consequences of the Fire in the Arsenal near Paraćin City and the Closure of Pan-European Koridor 10 in October 2006

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Abstract

This work analyzes the situation caused by the explosion of the ammunition warehouse and the closure of the Corridor 10 near Paraćin, Serbia in October 2006, as well as the effect of this, and other crisis situations on the way similar possible events could be handled in future. The emphasis is put on the organization of civil protection in the Republic of Serbia, with regard to the existing solutions in other European countries. The possibilities of implementation of the Geographic Information System (GIS) in crisis management are also considered. In the end, a short consideration is given to the USAID Programme for Planning and Action in Crisis Situations and its contribution in helping Serbian municipalities to become better prepared for response to crisis situations.

Introduction

Crisis situations, although rare, have large influence on everyday life when they happen. Besides the damage they cause to property and infrastructure, they can also affect the traffic. In different countries different institutions are in charge of protection and defense. For example, in the United Kingdom, the Ministry of internal affairs is in charge of these tasks, and in Sweden and Slovenia, the agencies dealing with these problems are part of the Ministry of defense. In Croatia and Macedonia, special state agencies for protection and rescue are formed, and they are responsible to the government. In the European Union countries, there are no special ministries for crisis situations. Such ministries exist in Russia, Belarus and Ukraine.

In Serbia, this field is not regulated by an adequate law, because there are several laws that regard this topic that are in collision, and some of them do not even match the modern requirements, because they were brought in the 1970s. The centers for civil protection were formed with legal basis in the Defense Law and the Civil Defense Organization Act, and were in charge of operational tasks on different levels, from state to municipality. These bodies were formed at the time when there were no other similar agencies for these tasks. The crisis caused by floods in 2005 was handled according to the Waters law.

The Fire in the Military Warehouse and the Closure of the Belgrade-Nis Highway and Railroad on October 2006

During the last few years there were many crisis situation that say much about the need for the reform in the field of civil protection – the floods in 2005, the bus accident on the Tisa river, floods in 2006, landslide in Bogdanje, the explosion of the military arsenal in 2006 and the fires in 2007.

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The explosion at the military warehouse in the region around Paracin, in 2006, is specific because it happened in the vicinity of the Belgrade-Nis highway, the railroad and the Cuprija-Paracin motorway.

The warehouse on Karadjordje Hill consisted of eight objects, of which one was destroyed in the explosion. There were six platforms with ammunition in the open, and one of them initiated the explosion. The objects were projected in the 1950s. There is a protection wall around each of the buildings, that helps redirect the blast upwards, preventing the destruction of the other seven buildings.

The series of explosions started on 19.10.2006. little before 4a.m, and the last uncontrolled explosion of small scale happened around 8a.m. The explosion was caused by technical reasons, because the anti-air ammunition, that was kept in open, caught on fire. The fire then extended to anti-tank mines that were located nearby. Out of 3500 tons of explosive, 1300 tons exploded. The detonation caused big damage in Paracin, but also in neighboring towns – Cuprija (7km away) and Jagodina (14km). The air pressure after the detonations was 8 milibar higher than usual. For comparison, during the NATO bombing, the air pressure was never more than 3 milibars higher than usual. 23 people suffered light injuries.

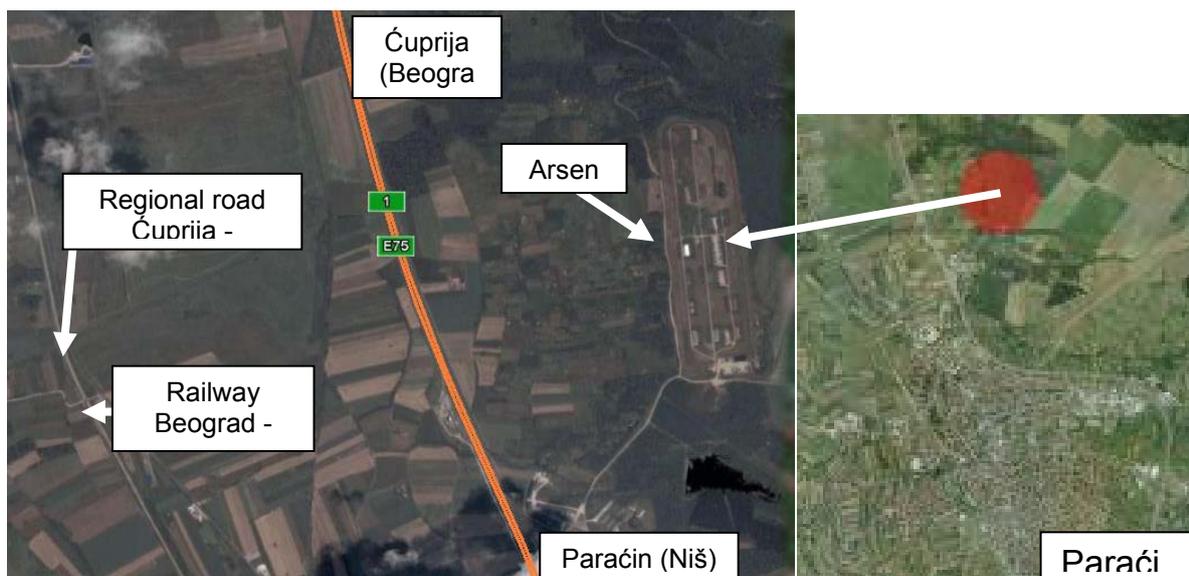


Figure 1 Situation before explosion

Belgrade-Nis highway was closed for traffic near Paracin, because the warehouse was just few hundred meters away from it. The vehicles traveling from Belgrade to Nis were redirected to regional road from Jagodina, over Cuprija to Paracin. Because these roads did not have the capacity to handle large amount of traffic, one part of the traffic was redirected on the Batocina-Kragujevac-Kraljevo-Krusevac-Pojate road. Normal traffic on the Belgrade-Nis highway was established around 10p.m.

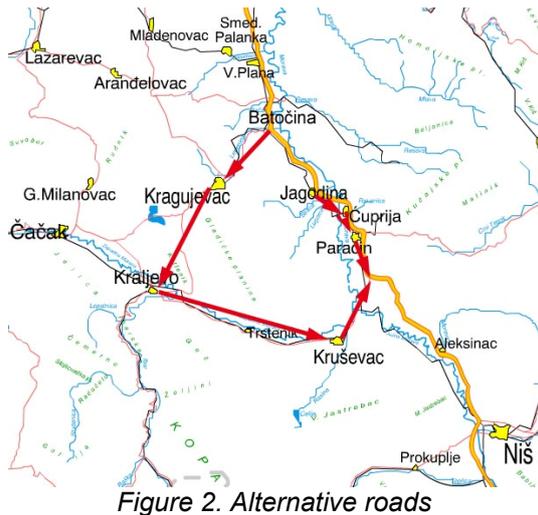


Figure 2. Alternative roads

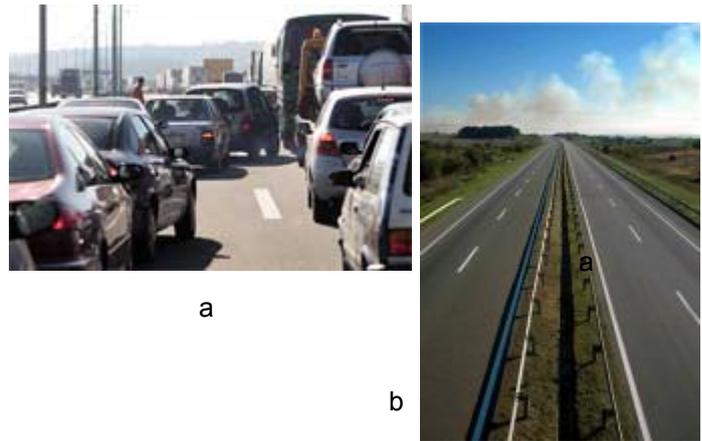


Figure 3. Highway before bypass and near Paraćin (b)

The railroad traffic on the part of the railroad between Paracin and Cuprija was reestablished soon. The railroad was opened for traffic at 10.55 a.m, because the authorities estimated that the railroad was safe for traffic. It had been closed since 7a.m.



Figure 4. Scenes from the terrain during the explosions and the day after

It is especially interesting that the first information about the explosion arrived from the internet, from the users living near the place where the explosion happened.

Consequences

The event near Paracin influenced the Serbian government to send a crisis situation law proposal to the parliament in October 2006. Because of the unstable political situation, the law had to wait for the new government in 2008, and has not been passed to this day.

Today, the situation remains almost the same. The civil protection is divided between several ministries and bodies, and nobody can be blamed for possible flaws.

Besides the civil protection centers there are also other agencies dealing with civil defense. The experience from the field shows that although the civil protection is involved in all of the relevant activities, its centers do not appear useful. The Local Self-government Law has determined that the protection of the local population from natural disasters is under the jurisdiction of municipalities and that municipalities can form a permanent or temporary body for this purpose.

In the Ministry of Internal Affairs of Serbia, as of 2006 there is a Protection and Rescue Sector, which is in charge of handling the crisis situations. The special police unit – Zandarmerija (Gendarmerie), is often called to assist the efforts.

Within the Ministry of Defense there is the Agency for defense of Serbia, with its Civil Protection Sector. Other military units, such as the engineering or fire units can also be involved, if the situation requires their engagement. Although the military is involved in tasks related to civil protection, the major responsibility lies on the Ministry of Internal Affairs. A new Civil Protection law is needed in order to precisely regulate the jurisdictions of different bodies and their mutual cooperation.

- ***Legislative solutions (Laws and regulations) of the existing organization of protection and rescue of people and property***

The existing organizational frame for the management of civil protection in crisis situations, which is supposed to include the network of agencies, bodies and units, together with organized system of security measures, is defined by a large number of regulations. Many of these regulations proscribe contradictory solutions, and there are too many governmental bodies that are supposed to take care of these tasks.

There are several ministries that are involved in some of the tasks regarding civil protection. Besides the already mentioned ministries of internal affairs and defense, the Ministry of Science and Environmental Protection and the Ministry of Agriculture are also involved. Despite the number of ministries concerned with this issue, not a single act regulating their regulating their cooperation has been brought. These results in irrational spending and additional costs, as well as in unnecessary increase in number of people involved.

Civil defense and protection are regulated by the Federal Republic of Yugoslavia Defense Law from the year 1994 which is now enforced as the law of Republic of Serbia. The law focuses on the protection during the war, while the handling of natural disasters is only seen as a contribution to the actions of the armed forces. The civil protection units that existed on all levels (in governments bodies, companies etc.) have abandoned their activities, given up on drills and stopped buying the equipment. Only thing that remained are the command structures that make plans that cannot be enforced.

Serbian constitution from 2006, article 139, establishes the jurisdiction of the **Serbian Military**: "The Military defends the country from armed threat from the outside and **performs other tasks in accordance with the Constitution**, laws, and principles of the international law that regulate the use of force" The concept where the Ministry of defense is in charge of the government's tasks in the field of civil protection is not the best solution, especially having in mind that this body is primarily concerned with the defense of the country.

Ministries Law thoroughly defines the duties of the ministries concerning protection and rescue in crisis situation. Directorate for protection of nature and environment within the **Ministry of Science and Environment** performs tasks that are, among other things, concerned with protection from chemicals,

and dangerous materials in production, exchange, transportation, and waste disposal. According the same law, the **Ministry of Internal Affairs** performs the tasks regarding "*protection of lives and property of the citizens, providing assistance in case of danger, transportation of weapons, ammunition, explosives and other dangerous substance, testing of the light firearms, devices and ammunition and fire protection...*" On the level of the Ministry, an organizational unit for tasks concerning protection has been established (Sector for protection and rescue).

Serbian law regulating protection from elemental and other disasters proscribes rights, duties and responsibilities of the state, municipalities, communities, businesses and citizens. Civil protection units, governed by state, city and municipal headquarters are in charge of the operational tasks. However, the experience has shown that these units exist only in theory. In most cases, municipal headquarters engage utilities sector (for maintenance of the roads, water supply lines, sanitary sewers etc) that have access to the equipment that can be used in crisis situations. The ability of these services to respond on time is not always on the desired level, especially in case of flood, storm, landslides etc. Sometimes the citizens have to organize their own efforts in order to save their property.

National action strategy for crisis situations has not been created to this day, and each ministry has continued to make its own plans, law proposals and projects in this field.

- **Use of GIS technology in the crisis management**

In the age of rapid development of the information technology, the creation of the system that enables gathering and storage of various data seems logical. If the data is stored using certain criteria, such as "located at", it is possible to discover different patterns and perform analyses. The result of this reasoning is the application of the Geographical Informational System (GIS) as support to the processes of crisis management.

Almost all of the incoming data that is necessary for crisis management have the geographic component. The locations of objects in danger, as well as the locations of fire stations, hydrants, roads, the schemes of the water and power supply lines etc. are the essential part of every analysis of this kind. Besides that, a significant part of the activities that crisis management consists of are analyses and simulations of the geographic data such as the movement of the fire and ambulance units etc. Within the Ministry of Science and Environmental protection of the Republic of Serbia a project called *Multimedial platform for crisis management in technological systems* has been initiated.

The object of research within that project are the modern technologies and methodologies that can be applied to the realization of the multimedial platform for diagnostics, supervision and prediction of the development and visualization of the crisis situations in technological systems.

GIS can provide tools for space analysis of the crisis situations and display of the factors of risk from the same geographic space. The integration of the multimedial technologies into GIS is supposed to provide more efficient

mechanisms for display and simulation of crisis events. One of the first analyses on this platform has been done in the city of Nis, for the Palilula³ municipality.

Similar analyses with different intensity are being done in other cities in Serbia. It is clear that GIS will have a bright future.

- **USAID Programme for Planning and Action in Crisis Situations**

USAID Programme for Planning and Action in Crisis Situations provides assistance to municipalities in Serbia in order to make them more efficient in handling crisis situations, helping them develop a system for planning and responding to crisis situations. In April 2008, seven municipalities in Vojvodina signed a cooperation agreement with this institution. Currently 41 municipalities in Serbia are taking part in this programme, and it is planned that by the 2011, 70 municipalities will be involved in the programme. For this purpose, bigger investments are planned, and the USAID has given 45 million dollars for support to the efforts of the municipalities to improve the prevention of crisis situations and response to them.

Conclusion

Analyzing the crisis situations in the past years and the way authorities responded to them, we can come to conclusion that there was intention to create a new legal frame and provide technical equipment for prevention of crisis situations and dealing with them, but that the level of realization remains low in practice. Because of various factors, even the activities that do not require big investments have not been completely realized. For now, it seems like the response and solutions of possible future crisis situations will continue to depend on the capability and imagination of individuals, rather than on system.

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