

READINESS OF IRS ELEMENTS ON CRACKDOWNS RAILWAY TUNNELS

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Abstract: *This article dealt about individual basic rescue units IRS in Slovak Republik, that are interfere near extraordinary events on railway. We realize that no all units seal accroach in this background and that too background introduces specific restrictions that are characterized in contributions.*

Key words: *rescue units, railway tunnels, railway accident, integrated rescue system (IRS)*

INTRODUCTION

Operation railway tunnel introduce specific exposure railway accident creation. This accident is not often, but it rise rescue units have to force. In this article I want describe decision shortly two rescue units. They are **Railway fire protection units** and **Mining salvage service**

RESCUERS PROGRESS AT INTERVENTION IN TUNNEL

Progress activities have doing in collaboration with railway personnel and inform the railway command centre. It is official in charge information. [1]

Responsible railway servants are [1]:

- station dispatcher in service,
- electro-dispatcher,
- dispatcher overall headquarters railway.

Dispatcher or electro dispatcher ensures disconnection traction mains on track. Railway fire protection unit can do also.

Dispatcher general headquarters railway or area establishment headquarters ensure exclusion street traffic along intervention places.

Dispatcher of adjacent railway railway station ensure exclusion forwarding operations by spoil

hit and retraction drive tricar above road with activation.

Dispatcher contiguous railway stations insure segregation transport lines near the hit place and locomotive retraction outside of electrification tracks.

Locoman or other authorized employee, which be in capacity rule locomotion point to safety mode and information supply together. Than cuts of continuous cable and do locomotion to safe mode. [1].

Fundamental hits in railway tunnels are:

- fire,
- railway accident.

Than very important factors are:

- Type of railway transport – Slow train, express or freight train.
- Flammable and hazardous material,
- Tunnels construction and tunnels technologies,
- Rescuer entry roads.

When is the fire in tunnel, the next arrangements are:

- shut down electrical equipments,
- segregation operating schedule in tunnel,

- long distance duty of water,
- ensure Breathing apparatus,
- alternate to firemen,
- search and rescue people,
- use fire ventilation.

Some special conditions are (at the fire)

- high temperature in tunnels,
- bad connections with transmitter,
- coordination between Integrated rescue units,
- walls of tunnels are very hot, and so on.

Hits in tunnel is very special is very special activity. This work demand coordination forces and resources at put of the place.

INTEGRATED RESCUE SYSTEM

Integrated rescue system is coordinated procedure his element at provision their readiness and activities in applying the provision and arrangement contiguous with render assistance in straits.

IRS in Slovak Republic is activated by telephone number 112. 112 is a single European emergency phone number, available to you all EU Member States. Call this number whenever you find yourself in a life-threatening situation, or when your health, property or the environment is in danger. It's free, available 24 hours a day

from landlines, mobile phones or pay phones without inserting coins or phone cards.

This number joins together emergency services – the fire brigade, ambulance, police and other emergency services in Slovakia, such as the Railway police, Mountain rescue, etc. This is a great advantage, because from now on you can remember just one single emergency number for any kind of emergency situation. What's even more, as a foreigner within the European Union you don't have to memorize the national emergency numbers of each EU state. Just remember one universal emergency number – 112.

Integrated rescue system (next IRS)in Slovak republic constitutes:

- Basic rescue units,
- Next rescue units,
- Police unit

The special rescue unit at railway are Railway fire protection units.

RAILWAY FIRE PROTECTION UNITS

The Railways of the Slovak Republic established Railway fire protection units. It is one of next rescue unit IRS. They insure performance of the tasks in save area before the fire. His responsibilities are managed, practice, organize and control fire-fighting protection on railway. They are dislocation in this town: Bratislava, Zvolen, Žilina, Košice, Čierna nad Tisou a Nové Zámky. Košice and Nové Zámky have some crews in Poprad and Štúrovo.

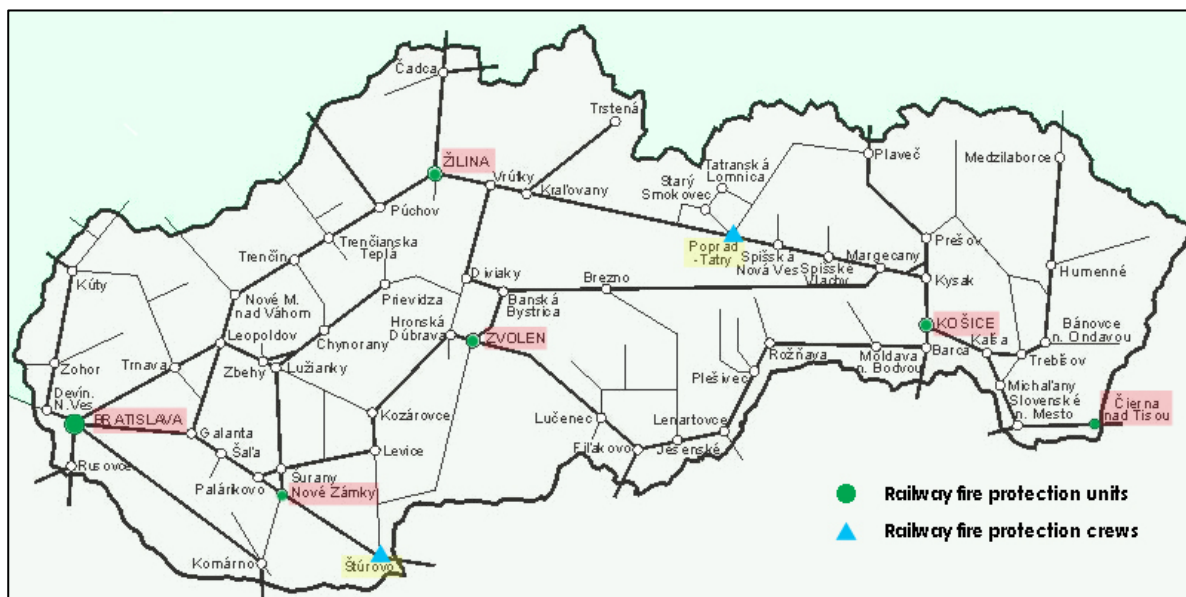


Fig. 1 Dislocation of Railway fire protection units [author, 2008]

Railway firemen interfere primarily at of his district and this at railway accident of train, or clash train with way car, fire along the track and fire railway car. Escapes of chemical agents are most frequently too. His

other works are pumping of water from flooded railway objects. The number of escape Railway fire protection in Žilina per one year is on figure 2.

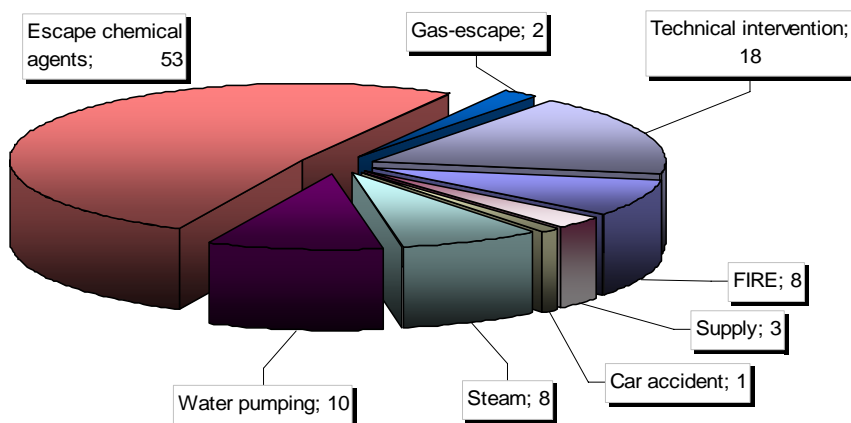


Fig. 2 Escapes Railway fire protection in Žilina per one year [3]

Armaments and accessories work fire brigade introduce technical and objective resources usage in public fire brigade. One no especially equipped on hit in tunnel, at which most restriction introduce motion car after rail and up time autonomous breathing apparatus. This time is about 30 minutes per head, what be in favour of single intervention deficient in tunnel.

MINING SALVAGE SERVICE

It is a main safety unit of Integrated rescue system in Slovak republic. Central mining safety service is located in Prievidza. There is a center of mining in Slovakia.

Responsibilities mine rescue service is practise jobs to save human life and lands at weighty working accident (crash) inclusive provision the first aid underground. Mine salvage

service solid determination responsibilities on sector emergency prevention and security and health protection greet at work and safety in service too.

Main station justifies Unit of recovery tunnels with these commissions:

- performs research damage tunnel
- safeguards tunnel before another destruction,
- designs relief works safety tunnel portals
- remove fall mass,
- safeguards perforation and generation passage at fall mass,
- performs systematic exploration fall in tunnels,
- safeguards approaches and arrivals to tunnel.

Table 1

Breathing apparatus comparison [2]

PROPERTIES	Type apparatus	
	Dräger BG-174	Saturn S7
IRS unit	Mining salvage	Fire brigade
Breathing apparatus type	oxygen	air
Activity form	vacuum	vacuum
Protective time	240 min.	46 min.
Water container capacity	2 l	7 l
Pressure in container	20 MPa	20 MPa
Unlade weight	12,8 kg	17 + 0,5 kg
Size: H x W x L, [mm]	160x435x485	120x280x720

Next the mining rescuers command oxygen breathing apparatus with time of use until four hours. This time have to work in close tunnel. Main rescue mining station has nitrogen stocks. It is very important for fire on tunnel. Inert gas application to flame is one form of liquidation fire.

CONCLUSION

Save people and materials at railway disaster in tunnel is between rescue units small resonant effect. Activity and coordination on the chance intervention lonely it will be very composite and suggests nice co-operation rescue worker and others accessory units of.

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ГОТОВНОСТ НА ЧАСТИТЕ НА ИСС ЗА ЕНЕРГИЧНИ МЕРКИ В ЖЕЛЕЗОПЪТНИТЕ ТУНЕЛИ

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РЕПУБЛИКА СЛОВАКИЯ

Резюме: Тази статия разглежда отделните основни спасителни единици IRS в Република Словакия, които се намесват отблизо в извънредни събития в железниците. Ние осъзнаваме, че не всички части одобряват подхода в този обстановка и че също така обстановката налага специфични ограничения, които се характеризират в доклада.

Ключови думи: спасителни части, железопътни тунели, железопътни катастрофи, интегрирана спасителна система (ИСС)