



INTERNATIONAL EXERCISE REPORT
“Barents Rescue 2017”
Republic of Karelia (Russian Federation)
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PREFACE

Prevention of disasters of the international impact and elimination of their consequences involve efforts of at least several countries.

Scenarios of accidents and man-caused disasters in Barents/Euro Arctic region (Barents Region) have similar features. They are the vast distances between administrative centers, sparsely populated rural areas, small quantity of personnel of fire and rescue services with limited equipment, difficulties in transportation and lack of hospital rooms in case of large scale emergency.

Large space of the Barents region both in the sea and on the land set the difficulties for fire and rescues services in an emergency. At the same time the border territories fire and rescue services with available forces and means may be closer to the place of an accident. Thus, they can arrive earlier and eliminate possible consequences.

That is why development of the international cooperation between rescue services in Barents Regions is essential. A well-coordinated work of Russian, Finnish, Norwegian and Swedish fire and rescue services will thus be provided .

Training and cooperation between the Barents region countries are necessary to guarantee a well-coordinated collaboration in case of large scale emergency. The new approaches can have a positive influence on their collaboration. This makes the Barents Rescue Exercise even more important as a chance to discover new approaches to work of Fire and Rescue services.

1. INTRODUCTION

According to the Order of the Government of Russian Federation №2621-p signed on 19.02.2017, the Complex Plan of Main Activities of EMERCOM of Russia for the year 2017, approved by the Order of the EMERCOM of Russia № 81 signed on 20.02.2017 and Order of the EMERCOM of Russia №347 signed on 15.08.2017 and the Order of the North-West Regional Center of EMERCOM of Russia №299 signed on 17.08.2017 the International Exercise “Barents-Rescue 2017” (hereinafter “the Exercise”) took place in the Republic of Karelia under command of Head of North-West Regional Center of EMERCOM of Russia I.A. Panin.

The Exercise was carried out under the Governmental Agreement of the Barents Euro-Arctic Region on the Emergency Prevention, Preparedness and Response Cooperation (hereinafter “the BEAR Agreement”).

The Chair is held in turn by Russia, Norway, Finland and Sweden for a two years period.

The BEAR Council pays attention to the issues of prevention and elimination of emergencies. The Exercise is generally accepted as the most effective way to train rescue forces.

The Exercise held has become the eighth since the first Exercise in Sweden in 2001/

Russia hosts Exercise for the second time, eight years after the Exercise in Murmansk in 2009.

The International Exercise “Barents Rescue 2017” became part of a huge bridge between the countries which builds a solid and reliable platform of prevention and elimination of different emergencies.

During the Exercise rescue services of four countries trained cooperation in elimination of consequences of a tourist bus crush on the “Kola” Federal Highway, a vast forest fire, a ship collision at lake, and gas explosion in a hotel.

During three days of the Exercise over 500 people were involved, including more than foreign 70 firefighters, rescuers and medical personnel.

Rescue operations involved 130 special fire and rescue vehicles, including ships, helicopters, and drones.

¹ BEAR – Barents Euro-Arctic Region

¹ Total: 523 persons, including 248 firefighters and rescuers (52 foreign) 71 persons of medical service (25 foreign), 21 divers (9 Finalnd) and 16 instructors of dog services (11 foreign).

¹ Total: 138 vehicles, including 64 fire and rescue vehicles (11 from foreign countries), 21 vessels, 2 aircrafts and 8 drones.

Over 280 people were involved in simulation of accidents including 160 figurants (volunteers) – who simulated injured people in different conditions.

The Psychological Service of the Main Department of EMERCOM of Russia in Republic of Karelia organised the work of the figurants (typical realistic behavior). According to the scenario many of the injured did not speak Russian and in reverse the Russian injured did not speak English.

The evaluation of actions of the parties was made by the Evaluation Group of experts who presented all participated countries. There were 56 experts from different ministries and agencies, including 22 foreign representatives. The Russian part was presented by Saint-Petersburg University of State Fire Service of EMERCOM of Russia, North-West Regional Center of EMERCOM of Russia, Main Department of EMERCOM of Russia in the Republic of Karelia, The Nikiforov Russian Center of Emergency and Radiation Medicine, EMERCOM of Russia (ACERM).

Saint-Petersburg University of State Fire Service of EMERCOM of Russia and Main Department of EMERCOM of Russia in Republics of Karelia developed evaluation forms for each Phase of Exercise.

On September, 6 Deputy Minister Vladlen Aksenov visited the Exercise. He attended the Council of heads of delegations from Finland, Sweden, Norway, where different issues of international cooperation within the Exercise have been discussed.

The Deputy Minister noted that “At the very first day there many crucial decisions have been made on organisation of cooperation during fire suppression in the border territories and in search and rescue operations during incidents with international tourist groups.”





2. PLANNING OF THE EXERCISE

Before the Exercise started I.A.Panin, the Head of North-West Regional Center of EMERCOM of Russia, noted that EMERCOM have a lot of work done to prepare the Exercise. This allowed to show the best results in all directions, and to achieve significant results in prevention of trans-border emergencies.

Planning Conferences

In order to solve all organizational questions there were arranged three planning conferences.

The First Planning Conference took place in Petrozavodsk in June 2016. The plan of international Exercise was approved as well as the tasks, number of forces and means from all participating countries.

The Main Planning Conference took place in December 2016, at Saint-Petersburg University of State Fire Service of EMERCOM of Russia. During the conference the Working Groups were set, the scenario and the dates were discussed.

Representatives of foreign delegations approved the work of groups, where the participant had possibility to discuss arrangements as logistics, medical support, accommodation and meal, communication, practical use of forces and means, evaluation and other. During the discussion the lists of personnel from Norway, Finland, Sweden were approved.

During the meetings the possibility of participation of Volunteer fire and rescue services was proposed.

The Final Planning Conference took place in Petrozavodsk in June 2017 and included reconnaissance of future EXERCISE fields. The Exercise plan was approved and tasks, forces and means were discussed.

All the aims of planning conferences were achieved due to considered discussions.

Working Groups

During the Exercise planning the six main working groups were set by the Second Planning Conference:

- Planning of the Exercise Group;
- Guests and observers group;
- Interaction Group (national representatives of different agencies);
- Host nation support group;
- Press and media communication group;
- Evaluation Group.

3. AIMS, TASKS AND INTENTION OF THE EXERCISE

Potential risks of emergencies in BEAR were identified by the “Barents Joint Manual” on cooperation in emergency prevention in the Barents Region (hereinafter – BJM). All risks are applicable for the Republic of Karelia where the international exercise took part in 2017.

The main aim of the exercise is exchange of the best practices with international partners, coordination of control points work and improvement of practical work and skills of fire and rescue units of the BEAR participating countries.

Targets of the Exercise:

- readiness testing of fire and rescue units of the BEAR participating countries to response to different types of emergencies;
- coordination of operational work of fire and rescue units of the Barents Region countries;



- cooperation of management centers and headquarters of the BEAR participating countries;
- procedure test of joint activities of fire and rescue units of the BEAR participating countries;
- testing the system of information in case of request for assistance or assembly of forces and means, involved in elimination of consequences of emergency;
- testing of simplified international border crossing procedures for fire and rescue units;
- organization of work of medical services of participating countries;
- organization of joint rescue operations on the land and in the water using search and rescue dogs units;
- psychological support to injured people and relatives of victims;
- testing of equipment and tactics using scientific methods during organization of rescue operations.

Plan of exercise included four stages:

- Table top exercise. Cross-border forest fire.
- Traffic accident (hereinafter - accident) involved are bus, cars and track with hazardous cargo.
- Hotel collapse caused by gas explosion.
- Collision of ships and as result fire on a passenger ship.

The National Crisis Management center of EMERCOM of Russia organized testing for mutual alert by the AlarmEX¹.

In the framework of the third stage of the exercise actions were planned for a hotel collapse caused by gas explosion. This emergency scenario case was first applied to the Barents Rescue Exercise.



¹ AlarmEX – Alarm exercise.

4. EVALUATION SYSTEM

During the previous Barents Rescue exercises each of the host countries used their own evaluation system and their methods of collecting information from appraisers.

To evaluate the results of the exercises, the Russian Bureau for Evaluation of Exercises developed its own evaluation system.

The evaluation concept was presented at the main planning conference in December 2016. The final version was reported at the final planning conference in June 2017 and agreed by all participants of the international assessment group.

While developing the evaluation system, the Russian evaluation team did not seek to the use of the latest electronic devices, having in mind that the use of personal electronic gadgets can create software compatibility problems. At the same time, it was assumed that the appraisers will perform the main work "in the field", on the ground of events.

Priority was the collection of the largest number of evaluations of the same event from different perspectives and points of view.

In order to have a sufficient "margin of safety" during the exercise for unexpected changes (such as replacements in assessment groups, scenario changes due to weather, etc.), a three-tier evaluation system was developed.





At the first (highest) stage, questionnaires were submitted for heads of delegations, heads of ministries and departments participating in the exercises. These observers did not evaluate any particular stage or day of the exercises, but all exercise in general, including its preparation, accommodation of participants, etc.

At the second (special) stage, questionnaires were submitted for filling in by appraisers, who evaluated only their special (professional) questions at the stages of the exercise. For example, only the work of medics or only the work of firefighters, dog handlers, etc.

At the third (working) stage, questionnaires were submitted to be filled in by the appraisers at specific stages and positions (message center, field headquarters, and rescue position). The questions in these questionnaires already took into account the specifics of each scenario and the specific actions of the fire and rescue units, depending on the type of incident: forest fire, transport accident, building collapse, fire on the ship.

During field exercises field evaluation points were deployed, in which the appraisers were registered and the questionnaires for evaluation were delivered. During the evaluation, over 70 questionnaires prepared by the Bureau for Evaluation of Exercises were handed in on the ground and in stages.

At each of the four stages within three days, practical actions were estimated by groups of appraisers up to 20 people.

In total, 56 specialists from various ministries, departments and services including 22 foreign specialists, participated in the assessment of the exercises.

Most of the questionnaires were filled out and handed over during the exercise, the remaining completed questionnaires were sent to the Bureau for the assessment of exercises within a month after the end of the practical part of the exercise.

In addition, experts of the Russian Center of Emergency and Radiation Medicine EMERCOM of Russia used their own expert system for assessing the provision of assistance to the injured at all stages of the exercise (expert evaluation cards for the quality of first aid to the victim and maps for assessing the medical sorting of the injured).

5. IMPLEMENTATION OF THE EXERCISE PLAN

At the inauguration of the international exercise of rescue services "Barents Rescue 2017", the head of the Exercise - Head of the North-West regional center Igor Panin noted that preparations took two years. The result of the Exercise will be quality improvement of fire and rescue units in a real emergency, as well as the exchange of best practices among the Barents region countries.

5.1. AlarmEX

In the framework of the exercise with the countries participating in the Barents Council, the National Crisis Management center of EMERCOM of Russia on August 29 and 30, 2017, held the mutual alerting AlarmEx exercise.

Participants were crisis management centers in Finland, Norway and Sweden; Russia was presented by control centers in the crisis situations of all three levels: National Crisis Management center of EMERCOM of Russia, Crisis Management center of EMERCOM of Russia in North regional center, Crisis Management center of EMERCOM of Russia in the Republic of Karelia, Crisis Management center of EMERCOM of Russia in Murmansk region and Crisis Management center of EMERCOM of Russia in Leningrad region.

The training had two stages.

At the first stage, on August 29, 2017 at 10.00 the National Crisis Management center of EMERCOM of Russia addressed to the countries participating in the exercise by e-mail a specialized form was sent - "warning about the possible occurrence of emergencies" (with notification about the threat of occurrence of a nominal emergency - forest fire in a border area). The request provided information on the forces and facilities needed to eliminate the disaster.

During the working day, the Swedish and Norwegian sides sent confirmations by e-mail that they were ready to provide assistance and to direct the necessary forces and means for the elimination of the nominal emergency situation. From the Finnish side on August 29, 2017 confirmation was not received.

08/29/2017 National Crisis Management center of EMERCOM of Russia held video conferencing session with the senior operational duty officers of the Crisis Management centers of EMERCOM of Russia and the control center of the Kingdom of Norway. During the communication session, the issues of preparation for the liquidation of the nominal emergency situation were discussed; the questions on the necessary composition and grouping of forces and means were clarified.

At the second stage, on August 30, 2017 at 10.00 National Crisis Management center of EMERCOM of Russia sent to the participating countries of the exercises a specialized form “on assistance” (with notification of the actual occurrence of a nominal emergency - forest fire in a border area). Until 12.00 on August 30, 2017, all the foreign partners sent confirmation of their readiness to provide assistance and to direct the necessary forces and means for the liquidation of the nominal emergency situation. In addition, in order to clarify the composition of the necessary forces and means, as well as the routes for their entry into the territory of the Russian Federation, additional telephone negotiations were conducted.

As a result of the AlarmEx, observers and appraisers from the Russian side noted the following shortcomings:

- A very complicated procedure for clarifying the composition of the force grouping and means (foreign colleagues have different staffing level and equipment from the units of the Ministry of Emergency Situations of Russia);
- Submission to National Crisis Management center of EMERCOM of Russia of responses from foreign countries on forms that are different from the forms approved by the BJM.

Conclusion:

- All links were tested;
- Generally cooperation with all the BEAR participating countries is organized on a good level for solving all operational tasks.

Suggestions after the AlarmEx exercise:

- Use preventive four ways (regular) exchange of information about units ready to response in case of emergencies on the cross-border area;
- Use a single form of units ready in case of emergencies on the cross-border area;
- The obligation to assign a quarterly adjustment to the national situation and management centers responsible for testing the system AlarmEx.

5.2. Stage 1. Table Top Exercise. Cross border forest fire.

Following events were included in the scenario:

*05.09.2017 The Operation Centre (RUS) received the following information:
because of spread of a forest fire a settlement Ruskeala*

was under the threat of fire. Fire area is 300 ha. There is a threat of fire spread to the border area. The Finish group of tourists was in the fire area. 25 people (including 12 children) were cut off by the fire on the one side and the lake Jänisjärvi on the other. In a state of panic 8 people tried to swim across the lake and gone missing.

5.2.1. Carrying out the table top exercise. Incident command.

The international interdepartmental incident command was established on the basis of the conference hall of the Park Inn Petrozavodsk hotel. It included representatives of the rescue services of the Russian Federation, the Republic of Finland, the Kingdoms of Sweden and Norway.

The total number of direct participants of the table top exercise was 40:

- 20 representatives from various ministries and departments of the Russian Federation (8 from the Ministry for Emergency Situations of Russia; 3 from the Ministry of Health; 2 from the Ministry of Internal Affairs of Russia; 2 from the Investigations Committee of the Russian Federation; 1 representative from the Ministry of Foreign Affairs of the Russian Federation, Ministry of Natural Resources, Customs and Border Guard services, the Government of the Republic of Karelia);

- 6 representatives from the Republic of Finland;
- 5 representatives from the Kingdom of Sweden;
- 3 representatives from the Kingdom of Norway.

29 persons were involved to support the activities of participants and evaluate the work (technical staff, interpreters, representatives from the international evaluation team). The location scheme of participants was made on the basis of linguistic features and accessories to ministries and departments.

In the premises where the headquarters was deployed, a reserve operational duty shift of the Crisis Management Center of the EMERCOM of Russia in the Republic of Karelia operated in order to bring the exercise operational situation to the participants of the command-staff exercise. Information exchange was organized with an operational duty shift through videoconferencing, imitating the real pace of developments.

The work of the incident command was held in the form of a business game, the overall operational situation was complicated by additional assignments during the “game” (in total six assignments were proposed for the solution). Colleagues from foreign countries were asked to work out their proposals for solving suddenly arising problems. These proposals were taken into account by the Russian side in their operational calculations.

The assignments were of a diverse nature – the participants of the table top exercise had to make a simulation arrangement of forces and means for extinguishing the forest fire, work out a mechanism for establishing the relatives of the injured and victims (to organize information about the accident); coordinate the issues of assistance to their rescuers who were injured during the liquidation of emergencies in

the territory of the Russian Federation. A separate issue was the process of delivering bodies of the deceased to their home country.

Formalized documents were developed to solve additional tasks, as well as graphic and information documents in printed and electronic form in both English and Russian languages.

The work of interpreters (simultaneous and consecutive interpreting) was organized to support reports, as well as to organize work in groups of headquarters to solve practical tasks.

Personal computers with access to the Internet were installed at workplaces of the exercise participants, there were opportunities to access international telephone communication and perform the necessary actions for document management (send a fax, print, scan and copy a document).

A projector screen and four monitors were used to display information materials in the hall. The main videoconference was displayed on the projection board, demonstrating the carried out practical activities and key participants in the command-staff exercise in the Sortavala and Prionezhsky districts of the Republic of Karelia. Reports on the operational situation and the formulation of tasks were made in real time.

Background information for support and decision-making was displayed on video screens.

Within the framework of the exercises, the representatives of the headquarters resolved the issues related to the organization of forces and means in the area of the accident, as well as organized measures to cross the state border by relatives of the affected foreign citizens.

Weaknesses:

The analysis the work of observers, who were part of the interstate interdepartmental incident command revealed the following disadvantages:

There was a lack of understanding of the tasks and intentions of the exercises by foreign delegations at the initial stage;

Different approaches to the organization of staff work and organization of management did not allow in a short time to develop and make decisions on additional attraction of forces and means taking into account the sudden emergence of additional introductory notes in short time;

Despite the extensive international telephone communication, a number of representatives of foreign countries did not realize this opportunity and preferred to use their own funds to clarify the capabilities of their units.

Strengths:

Positively can be noted the work of the representatives of the Republic of Finland who have actively participated in the debate, confidently knew the capabilities of their units, and helped in the operational calculations of the situation associated with a possible transition of a forest fire in the territory of the Republic of Finland.

It is also worth noting that representatives of all foreign delegations were interested in providing medical assistance to their rescuers in case of injury during rescue operations. A conditional mechanism was developed in accordance with which foreign rescuers received the first medical aid in Russian Federation, and then would be transported urgently to the customs checkpoint for transfer to colleagues in their jurisdiction zone.

The issue of overcoming the language barrier was generally successfully solved thanks to the interpreters involved.

Conclusions:

The table top exercise meets the goals and objectives set for the International Interdepartmental Incident command.

Proposals:

While holding the next international exercise in the framework of a table top exercise, it is useful to determine the type of participants from delegations of foreign countries. The group of experts assigned to work in the International Interdepartmental Incident command is proposed to include: experts in the management of the attraction of forces and means, expert managers in the provision of comprehensive medical care, expert managers to protect the population and territories, specialists in the organization of international activities, communication experts. The host country must seek in advance the wishes of foreign delegations for the equipment of workplaces.

5.2.1. Practice.

According to the plan a large forest fire within the area of 200-300 hectares was detected by aerial reconnaissance in the border zone near the village of Vyartsilya Sortavala district of the Republic of Karelia (5 km from the state border). There is a threat of forest fire spreading across the state border. More than 150 people and more than 30 pieces of equipment were involved in extinguishing the fire and rescue operation (including 20 people and 4 units from Finland).

Representatives of Finnish units joined the Field Staff on site, so they not only were aware of the situation, but also participated in making managerial decisions, and if the situation changed (the message about the missing tourist group) they could quickly coordinate the work of their units.

After the entry of signal about a forest fire, the senior operative duty officer of the Crisis Management Centre of the Ministry of Emergency Situations of the Russian Federation for the Republic of Karelia sent fire and rescue units to the scene according to the departure schedule. In addition, within the framework of international cooperation, additional fire and rescue units from Finland were requested to the scene.

On the site of a nominal emergency, the operation of operational groups and a mobile control point by the specialized fire and rescue unit of the Republic of Karelia was organized. The reconnaissance of the situation using unmanned aerial systems (hereinafter - UAS) was carried out.

During the liquidation of the contingency emergency, the units of the Ministry of Emergency Situations of Russia, Interior Ministry of Russia, tenants of the forest, the Ministry of Nature Management and Ecology of the Republic of Karelia, the Border Guard of the Russian Federal Security Service (hereinafter - the FSS) in the Republic of Karelia, Federal Service for Supervision over Consumer Rights Protection and Human Welfare.

During the stage of completion of practical measures to extinguish a conventional wildfire, was received the next information, that a tourist group of foreign citizens, consisting of 25 people, including 12 children, is on a hill with steep cliffs. On the one hand, the group is cut off by forest fire, and on the other - by water. In a state of panic, 8 citizens tried to swim to the other side and gone missing.

During the practical actions at this stage, an online video broadcast of events to the international incident command was conducted.

Observers in their assessments noted the following **strengths** of the joint work of fire and rescue units:

- no loss of time for arriving units to wait for tasks after arrival and a specific statement of tasks;
- harmonious and effective work of fire brigades, timely meeting and support to the workplace of Finnish units following the request for assistance;
- timely making the right decisions by the international interdepartmental incident command;
- rapid transfer of commands from the headquarters in cases of deviation from the training plan.

Also **weaknesses** were noted:

- a language barrier, both in the work of the headquarters and in the field of practical actions;
- differences in the performance of fire-fighting equipment.



Conclusion:

The table top exercise stage was held at a high technical and organizational levels, the set goals were achieved, the interaction issues of all participating countries were worked out;

In the practical part of the exercise phase, the forces and means of only two participating countries were involved, while the use of the grouping from the contiguous side was maximum.

Proposals:

- to put into practice the communication of the fire-fighting leaders (elimination of emergencies) with the help of work cards containing the main terms, definitions and formalized commands in the national languages;
- to provide for the staffing of fire and rescue units stationed in the border area, a set of switching equipment (adapters), which allows the joint use of available fire and technical weapons.

5.2. Stage 2. Traffic accident at the federal highway involving a bus, cars and truck carrying hazardous cargo.

Exercise scenario of Stage 2 included the following events:

06.09.2017 Control Center (RUS) received the information of the traffic accident at the section of the federal highway far from settlements with a tourist bus with foreign tourists, three cars and truck carrying hazardous cargo (fuel). As a result of the crash the



tanker with fuel was damaged and there is the fuel leakage to the road and vehicles fire. 24 people were damaged including 5 killed and 4 in a very serious condition. Injured people are panicking.

Over 170 people took part in rescue operation, 40 special vehicles (including 28 participants and 5 vehicles from foreign countries).

The second stage was intended to train cooperation between management and fire and rescue divisions in elimination of traffic accident consequences.

According to the exercise plan the task the situation was as following: on September, 6 2017 at 10:00 the fire and rescue service of Petrozavodsk was reported of the simulated traffic accident at 423-d km of the Federal highway (FH) “Kola” near the Novaya Vilga. After the crash one of cars ignited, tourist bus moved to ditch, the oil tanker of the track was damaged and there was the fuel leakage. 30 foreign tourists stayed in the bus, 7 people were locked in cars and 1 get blocked in a tanker.

The officers on duty of the Special Fire and Rescue Station and the First Department of Fire Service of EMERCOM of Russia of the Republic of Karelia were the first at the place of emergency. They started to extinguish the car fire to prevent the ignition of fuel from tanker.

The medical personnel started to deliver medical assistance to the injured.

At the same time the psychological assistance was delivered by personnel of Center of Emergency Psychological Assistance of EMERCOM of Russia.(CEPA of EMERCOM of Russia)

Tourists who did not need the special medical aid were evacuated to the locations of temporary accommodation.

The Emergency Scene was monitored by five drones including “Orlan-10”, which was used for the population information in the area of emergency by SMS. The information was given about the traffic accident, and safety precautions.

At the next stage rescue subdivisions from Finland and Sweden arrived. Finnish rescuers worked on elimination of fuel leakage. Swedish rescuers evacuated tourists from the bus.

The MI-8 helicopter equipped with the medical module evacuated one of the injured who had most serious traumas to the hospital. Aircraft raises the chances of the injured, providing the medical principal of “golden hour”.

For the coordination of activity of all working divisions the Field Headquarters was arranged.

After finishing of the rescue operations the leaked fuel was removed by the emergency rescue team “SMARP”. The traffic was restored at the road.

At this stage the management staff observed the activity at the scene. They have highly evaluated the equipment and skills of firefighters, rescuers and medical staff.

Russia was presented by Deputy Minister Vladlen Aksenov, He highlighted in interview: “The situations like this happen often not only in Russia but in other countries as well. For this reason cross border cooperation at traffic accidents is very important. Different countries have the same approaches to rescue and medical assistance this allows us to interact effectively in any stressful situation”.

Strengths:

- A prompt resolution of issues of engagement of foreign experts, different support to the injured foreigners provided by Ministry of Foreign Affairs, involvement into elimination of consequences all of the chains of All Russian System of prevention and liquidation of emergencies.

- Effective reconnaissance of the scene of the traffic accident;
- Video and other information transmission to incident command online.
- Operational support of SMS-information for drivers at the road;
- Wide implementation of drones;
- Aid of fire and rescue services to medical staff in transportation of injured and in first aid as well;

- First aid included transportation to ambulance or helicopter and also four of actors were delivered to hospitals. This allowed to train wider number of activities related to acceptance of injured in hospitals;

- Significant contribution of psychologists working jointly with medical personnel with lightly injured people;

- High quality of interaction of medical services of all countries participated.

- Organization of ranging area of injured;

The officer, responsible for cooperation and information for each group. (for example disinformation appeared only when medical personnel relied to the direct



- information from physiological personnel avoiding managing personnel and headquarters).

Weaknesses:

- Field headquarters located in a conspicuous place and it was easy to find it. However by specialists' evaluation it was too close to the scene of accident and could be in damage area in case of explosion of the tanker.

- The field headquarters did not have radio communication with all participating groups.

- There was no direct radio communication between teams from different countries at the scene. This led to time loss for finding the leader.

- There zones for arriving rescue and medical transport was not marked (to make rapid and safe transportation and evacuation of the injured).



Russian medical services highlight the high quality of first aid equipment of the Norway delegation. All the Medical personnel in Norway have the right to deliver medical assistance in the zone of emergency.

Russian rescue service noted that fire rescue vehicles from Sweden are equipped with additional appliances to mark the scene (pulling-out safety-signal lights) and the fire pumps equipped with distant control panel.

Conclusions:

During the second stage the participated countries worked on issues of elimination of consequences of traffic accident and fuel leakage, first aid and psychological support, and also aircraft for evacuation of the injured. On the whole

the approaches to equipment and liquidation of traffic accident and fuel leakage are the same in all countries. The aim of exercise is achieved.

Proposals:

- To pay special attention to **management** of international fire and rescue forces during the preparation of the Exercise Barents Rescue 2019, to organize radio communication (to provide separate radio channels, call signs etc.), to include representatives of all countries into headquarters.
- To provide online display of operational documentation from field headquarters to monitors available for observers (information of arriving forces and means, decisions of the incident commander etc.).

5.2. Stage 3. Building collapse.

Exercise Scenario Stage 3 included the following information:

06.09.2017 Control Center (Russia) was reported of the gas explosion in the hotel building (6-floors) near the border with building collapse. During the emergency 125 people were inside including 80 foreigners and 20 persons of staff. According to the primary information 18 were killed and there are people under ruins. The fire and there is a threat of the following collapse.

The second stage was intended to train cooperation between management and fire and rescue divisions in elimination of building collapse as a result of gas explosion.

Rescuers trained procedures of cooperation in information and arrival to the location of rescue operation, practical work in building fire extinguishing implementation of search and rescue operation and deconstruction of ruins. The background information included the work of fire fighters, rescuers, medical, psychological services search and rescue dogs and special techniques, aircraft (helicopter Mi-8) and drone.

Simulated conditions were close to real conditions of explosion and fire as much as possible.

Firefighters and rescuers worked in real fire and smoke. This stage involved maximum of injured population (actors).

After the report of gas explosion the Officer on duty at Emergency Management Center in Republic of Karelia sent to the location fire and rescue troops.

The divisions of the First Fire Department of Federal Fire Service of EMERCOM of Russia in Republic of Karelia arrived to location. They implemented reconnaissance and requested for additional forces and means. The smoke-divers



units were organized for evacuation of people from building using staircases and also aerial ladders for evacuation from upper floors.

The Field Headquarters was organized. It implemented the following tasks:

- To meet arriving forces and deliver their tasks.
- To find the external water supply and logistics;
- To organize the occupational safety;
- To coordinate activities at place and organization of cooperation between arriving rescue services including foreign rescuers.

At location there were organized the first aid delivery and psychological support. There participated the personnel from the Center of Emergency Psychological Aid of EMERCOM of Russia, Territorial Center of Catastrophe Medicine, ambulances of Petrozavodsk city, All-Russian Center of emergency and radiation medicine of EMERCOM of Russia. Norwegian colleagues helped to the Russian medics.

The patients sorting location was organized in cooperative efforts.

At the scene of accident there worked response teams of companies “Petrozavodsk public utilities – electric network” corporation, “KarelGas” corporation, “PKS – Vodokanal”. Using the special equipment and means of protection, brigades of electrical services shut of the power supply of the building. Gas services detected places of gas leakage, and eliminated leakage with special means. Accidents on water supply were eliminated with multipurpose valves.

Units of Special Fire and Rescue Station of Republic of Karelia arrived to the scene of accident. At the same time the search and rescue dogs units arrived from Sweden, Norway and North-West Rescue Department of EMERCOM of Russia.

Personnel of the Special Fire and Rescue station together with Finnish colleagues organized the rescue of survivors from ruins using special instrument. Rescuers reinforced the construction with special support. Search and rescue dogs worked at ruins.

Incident Commander organized evacuation of people to points of temporary life support where they could receive psychological assistance and other help.

Search and Rescue Service of the Republic of Karelia also participated in the operation. They rescued the injured people who were unable to move themselves. The rescuers evacuated the injured from the windows using rope rescue equipment.

Later the rescue service personnel of the Arctic Rescue Science and Training Center “Vytegra” were delivered to the roof of the building by helicopter Mi-8. The helicopter was also used for evacuation of one of worst injured persons to the hospital.

After the rescue was finished the special construction equipment started the deconstruction of ruins.

Strengths, highlighted by the appraisers and observers in joint work of firefighters, rescuers, psychologist and medical staff are:

- The cooperation was effective cooperation despite language differences;
- Implementation of modern rescue equipment (tripod, turbo-fan, container truck etc.).
- Use of search and rescue dogs
- Use of methods of rescue of the survivors from ruins including injured people with crush syndrome;
- Autonomous work of Finnish fire and rescue service in reinforcement of building.

Weaknesses:

- Meeting and parking of arriving vehicles (over 20 rescue vehicles and ambulances arrived and hindered to each other);





- Field headquarters was placed too close and several times changed the location. It was not easy to find;
- Field headquarters did not have representatives from other countries;
- Personnel of Headquarters did not have understandable insignia;
- Heads of foreign teams did not have insignias; and foreign teams were not informed properly of the headquarters decisions (zones/locations of work).

Conclusions:

During the 3 stage of the exercise the fire and rescue services trained the activities in case of a hotel building collapse caused by gas explosion. This scenario was used for the first time at Barents Rescue Exercises. Search and Rescue dogs, firefighters and rescue officers, aircraft, medical and psychological services participated in this exercise. Practical experience of cooperation was gained which is useful for all participating parties. The aim is achieved.

Proposals:

During planning of operations there should be provided identification of the Incident commander and organized radio communication between the headquarters and the national teams.

5.2. Stage 4. Ship collision

The scenario of the field training of the fourth stage of the exercises included the following events:

On September 7, 2017, the Control Center (RUS) has received the information that a collision between passenger and cargo ships occurred in the water area, at a considerable distance from the coast. The passenger ship is on fire; on the cargo ship is taking place a fuel leak. At the time of the accident, 80 people were on the passenger ship, including 40 foreigners and 7 crew members. According to the first information, about 40 passengers are evacuated with the help of inflatable life rafts; some people cannot get out of the cabins because of fire and smoke. Several people in a state of panic jumped overboard without life jackets.

More than 300 people were involved in the rescue operation and 60 units of equipment (including from Finland, Sweden and Norway - 54 people and 6 units of equipment).

The third day and the fourth stage of the exercises were held in the port of Petrozavodsk in the conditions of storm wind and heavy rain, which significantly complicated the actions of rescue teams in the water area, but at the same time brought them closer to the conditions of a real emergency.



Weather conditions complicated the actions of aviation, and the use of unmanned aerial vehicles became impossible, which greatly limited the possibilities of remote reconnaissance. Nevertheless, the leadership of the exercises did not refuse to hold the stage, and all the teams took part in the rescue operation.

In the Onega Lake there was a collision between cargo and passenger ships. On the one ship there was a fire. The passengers were in a panic and some of them jumped overboard. In the first minutes the crew of the ship informed the emergency services of Petrozavodsk about the incident and took measures to carry out rescue work on its own.

To the place of the collision immediately arrived the boats of the State Inspectorate for small sized boats (SISSB) of the EMERCOM of Russia with Russian rescuers on board. A little later the rescuers arrived from the Karelian Republic Search and Rescue Service. They carried out an operation to save the victims on the water.

Together with the inspectors of the SISSB arrived the policemen of the Petrozavodsk Transport safety Line Department. Their task was to block access to extraneous vessels in rescue operation area.

Further, firemen of the specialized fire and rescue station of the Republic of Karelia and the 1st brigade of the federal fire service of the Republic of Karelia were sent to the area of rescue operations. By this time, the crew had already saved 20 people from the ship.

Medical specialists provided assistance to the victims, carried out medical sorting and delivery of victims to medical institutions. In parallel with the work of medical units, the work of psychologists of the Center for Emergency Psychological Aid EMERCOM of Russia was organized.

On board the helicopter Mi-8 of the Aviation Rescue Center of the North-West Regional Center EMERCOM of Russia there were rescuers of the Arctic Rescue Training and Research Center "Vytegra", who landed to the ship with the help of rescue equipment. Also, the helicopter crew organized the lifting of one victim from the water.

The fire-fighting vessel "Vyun" began extinguishing a fire on a cargo ship. At the same time, the water tug began to pull the passenger ship into the port. In this moment the exercise management complicated the task - during the towing there was a fire on the ship, four crew members did not get in touch. To organize the firefighting, firemen from Sweden were concentrated on the coast.

After the search and rescue work began to search for the drowned. Divers from Finland and Russia took part in them. For the searches, a remote-controlled unmanned underwater vehicle "Falcon" was also used.

On the shore, dog handlers from Norway and Sweden searched for possible victims.

Rescue of victims on the ship and from the surface of the water was carried out in all possible ways, including the landing of rescuers from the helicopter Mi-8, and

search and rescue operations on the water were conducted with the participation of 18 rescue boats of various classes. Good support was provided by the police.

In the conditions of stormy weather, a modular medical camp was set up on the site of the operation to receive the victims, to provide them with first aid and sorting. Although the bad weather increased the time of transportation of the victims to the shore, all the victims were delivered in time to medical sorting sites and sent to medical institutions.



Strengths:

- Effective work of the head of the operation;
- Fire-rescue units arrived intensively, did not have time losses for waiting for task setting, and immediately were appointed to the areas where they immediately proceeded to rescue work;
- Effective searching for people on the water;
- High level of control over the conducting of rescue operations.

Weaknesses:

According to the results of the fourth stage, observers and appraisers recorded in their questionnaires the insufficient protection of the field incident command post against bad weather conditions and the absence of representatives of foreign teams in the field incident command post.

Conclusions:

The fourth stage of the exercise was complicated by difficult weather conditions, but in spite of this, all planned activities were completed. There have been elaborated all issues of saving people on the water, extinguishing the fire on a passenger ship and the delivery of victims to a modular medical camp to provide them with medical and psychological assistance. For the search of drowned divers were involved. Work at this stage showed the coherence of the actions of the involved services. The goal of the fourth stage has been achieved.

Proposals:

- to increase the interaction in solving joint tasks, the quality of management of international forces and means, the effective use of national brigades, it is necessary to include in the working groups the profile specialists from all participating countries (firefighters, rescuers, doctors, psychologists, dog handlers, aviators, divers);
- scalable terrain maps and site plans should be present in the field headquarters.

5.6. Organization of communication

Communication on the International Exercise was organized in accordance with the instructions of the Information Technology and Communications Directorate of EMERCOM of Russia, the North-West Regional Center of EMERCOM of Russia and the Main Directorate of EMERCOM of Russia in the Republic of Karelia. Timely, stable and uninterrupted communication during the exercises was the basis for successful implementation of the tasks set by the forces of the Main Directorate of EMERCOM of Russia in the Republic of Karelia, the Crisis Management Center of the Northwest Regional Center of EMERCOM of Russia, the Nevsky Rescue Center and the Ruza Center for Support the Control Points of EMERCOM of Russia

The communication system was organized on the principles of integrated use of communication facilities for stationary and mobile components using existing and newly organized communication channels.

Features of the organization of communication during the exercise were:

- complexity of radio communication, due to the characteristics of the terrain (the density of construction and the physical and geographical location of training sites);
- large number of subscribers of radio networks (more than 300 people);
- participation in the exercises of units from Norway, Sweden, Finland.

The technical basis of the communication system was:

- mobile communication center based on the KamAZ-5350 vehicle;
- mobile communication center on the basis of the KamAZ-5350 vehicle;
- mobile set of satellite communication;
- 212 VHF radios (165 wearable, 40 automotive, 7 stationary);
- 3 mobile radio network repeaters (DMR), 39 portable radios (DMR);
- telephones for long-distance communication, installed in the places of the main exercises;
- 3 satellite communication stations;
- 6 sets of videoconferencing (including 2 portable).

The communication system included:

- nodes of communication of everyday management points of higher management bodies, as well as interacting management bodies;
- mobile communication nodes;
- departmental digital communication network with the integration of services;
- VHF radio networks;
- reserve of forces and means of communication.

Communication nodes of everyday control points:

- "Photon" communication node (Moscow);
- Communication node "Obhod" (St. Petersburg);
- Node of communication "Evora" of the Main Administration (Petrozavodsk).

The following types of communication are deployed in the Main Headquarters of the exercise:

- VHF radio in the DMR radio network;
- wired communication system over a dedicated digital channel with automatic international telephone, facsimile and data transmission over the Internet, access to the departmental digital communication network of EMERCOM of Russia, providing telephone automatic, facsimile, videoconferencing and data transmission with access to the network resources of EMERCOM of Russia;
- on the Internet through open access via Wi-Fi;
- Radio in the Iridium satellite communication network, open telephone;
- radio in GSM mobile radio networks

with access to the public communication network with the organization of telephone open, data transmission over the Internet.

Communication nodes of mobile control points were deployed:

- 1st stage - "Marble Canyon", Ruskeala village, Sortavala district;
- Stage 2 - 423 km of the federal highway Kola;
- Stage 3 - Automobile Repair Plant №75, South Industrial Zone, Petrozavodsk;
- Stage 4 - the embankment of Lake Onega in Petrozavodsk.

In the areas of practical events, the following types of communication were organized:

- satellite "Vsat" providing telephone, video, fax and data transmission;
- satellite "Iridium" with telephone communication;
- satellite "BGAN" in reserve, providing telephone, video, fax and data transmission;
- access to the ministerial digital connection with the organization of telephone open communication and data transmission through the Intranet with the organization of access to ftp, video communication;
- VHF radio communication in the radio network of management and interaction of the DMR standard for the leadership of the participants in the exercises;
- VHF radio communication in radio networks for the units of the federal fire service;
- VHF radio communication in the radio network for control authorities;
- VHF radio communication in the radio network for Inspections on small vessels;
- VHF radio communication in the radio network of interaction for the forces and assets of Finnish rescue units;
- VHF radio communication in the radio network of the All-Russian Center for Emergency Medicine, the Territorial Center for Disaster Medicine, the Center for Psychological Aid;
- VHF radio communication in the radio network of the Komi Republic search and rescue service;
- VHF radio communication in the radio network for Aviation Rescue Center;
- radio in GSM networks with the organization of telephone open communication, data transmission over the Internet, fax communication.







Auxiliary and mobile communication points between the incident command and the subgroups of events:

Post of communication of the commandant's service of the base camp "Uya".

Organized by:

radio communication in GSM networks with the organization of telephone open communication and data transmission over the Internet;

access to the ministerial digital communication system with the organization of telephone open communication, data transmission through the intranet with the organization of access to ftp, video communication;

radio communication of the radio network of the chief of the Main Directorate of the Emercom of Russia, radiotelephone.

access to the Internet through the organization of open access via Wi-Fi using the resource of mobile operators.

Post of communication in the hotel "Karelia".

Radio communication has been established in mobile radio telephone networks of GSM standard.

A feature of the organization of radio communications during the exercise was the use of a DMR radio network for the management of forces and assets from the main headquarters of the exercises.

Conclusion:

The communications system during the exercise was deployed in a timely manner, worked steadily and was sufficient to organize the management of forces and assets. There were no communication interruptions, no delays in the passage of information.

5.2. Medical forces

In the three-day exercise the emergency medical assistance for simulated victims was provided by medical personnel consisting of 70 people (doctors, paramedics, nurses, medical assistant), including 25 foreign specialists. At each stage, up to six international mobile medical teams (including Norwegian, Finnish and Russian) worked at the sorting sites. In the medical evacuation activities took part 26 resuscitation vehicle and ambulances.

According to the scenario of the exercise in each of the four stages, the number of victims who needed emergency medical care (including evacuation) was between 10 and 30 people. The category of victims was ranged from slightly injured to critical, and from senseless condition to in state of panic.

Observers of the Evaluation Group at all stages noted that medical assistance was provided in a timely manner both in urban settings and in the elimination of wildfire by firefighters and rescuers. At the stage of rescue operations during a road

accident, the evacuation of heavy casualties to hospitals was organized very quickly, among other things because of the support of aviation. During the rescue operation in the collapse of the building the psychologists and doctors have prevented panic.

Assessment of the quality of medical care at all stages of the exercises was carried out by specialists of the All-Russian Center for Radiation and Emergency Medicine of EMERCOM of Russia, using its own assessment system.

They assessed the actions of international medical teams in most cases as qualitative. The degree of threat to life due to injuries, as well as the order of evacuation was correctly determined. Sometimes the sequence of actions of rescuers and medical personnel in the main stages (first aid, sorting, emergency assistance, medical evacuation) was hampered by the language barrier problem.



Conclusion:

The results of the expert evaluation of the quality of first aid showed that the main (90%) part of the rescuers was assessed by experts as "good" (24%) and "excellent" (66%). An expert assessment of the quality of work of rescuers showed that in most cases the medical sorting was carried out qualitatively; the order of evacuation was set correctly, the life-threatening damages were correctly identified.

The results of the expert assessment of the quality of the activity of ambulance brigades at the stage of medical evacuation showed its high level.

In the hospital, the victims were provided with specialized medical assistance in full, the diagnoses corresponded to imitation maps, with the exception of combined injuries. Medical documentation was issued without mistakes.

Medical personnel of the Ministry of Health of the Republic of Karelia, including the Territorial Center for Disaster Medicine, the Republican Hospital named after V. Baranov, the Specialized Fire and Rescue Unit of EMERCOM of Russia of the Republic of Karelia, and the Nikiforov Russian Center for Emergency and Radiation Medicine of EMERCOM of Russia acted on a high professional level.

It is necessary to note the high quality of training of volunteers and a realistic imitation of their injuries and behavior.

The appraisers (experts, observers) from among the teachers of the medical college, the ambulance staff acted at the high methodical level.

Thus, the results of expert assessments of specialists during the international exercises Barents Rescue-2017 convincingly showed that the quality of first aid, medical sorting and emergency medical aid at the stage of evacuation and in the hospital is quite high.

Weaknesses:

The medical forces the international participants were represented extremely unevenly (Norway - more than 20 paramedics and doctors, Finland - 2 persons: a doctor and a nurse, Sweden - medical personnel did not participate).

5.7. Psychological services

Specialists of the Center for Emergency Psychological Aid of EMERCOM of Russia took part in the exercise for the first time.

They received practical interaction skills when dealing with victims at the scene of an emergency situation and worked out rules for receiving and transmitting information. A good moment is radio communication and the presence in the field headquarters of a person responsible for interacting and receiving information on a specific group of specialists.

Important results of the exercise are:

1. Specialists of rescue and medical services of Norway, Sweden and Finland received information on the work of the psychological service of EMERCOM of

Russia to help both: the victims and the rescuers. This information aroused a great interest among foreign colleagues.

2. The main interaction was carried out with specialists of the psychosocial service of Finland.

During the accident stage, Finnish colleagues watched the actions of the operational group of Russian psychologists and were able to get a general idea about the organization and provision of psychological assistance to the victims directly on the site of the emergency situation.

At the stage of "collapse of the hotel caused by gas explosion", two specialists of the psychosocial service of Finland were involved in the operational group of psychologists and worked together with Russian specialists.

It was useful for all to observe the actions of colleagues, to compare schemes and algorithms of work, and to organize interaction between colleagues (for example, comparing the forms of interviewing of the injured in the search for missing relatives, the particular organization of social assistance to the injured, interaction with the medical service). It was also very valuable to get the experience of working together in a new and highly demanded sphere of assistance to the victims directly during the liquidation of the consequences of the emergency situation.

3. For foreign rescuers and medics it was the first experience of interaction with psychologists at the site of an emergency. For them it was new and unusual that there was a group of specialists whose work greatly facilitates the work of rescuers, medics and headquarters. Psychological service for them for the first time acted as a participant in the liquidation of the consequences of emergencies.

5.2. Use of unmanned aerial systems

Analysis of the actions and capabilities of officers involved in aviation systems management, specification of unmanned aerial systems and also the practical experience received during the exercise, it should be noted:

1. In order to provide online broadcasting from the place of emergency purposely for fastest and full assessment of an operational situation also for organization of day-and-night duty of divisions operating the unmanned aircraft, it is rational to divide functions between divisions of Crisis management center and divisions of specialized rescue and fire station;

2. During the work in the place of emergency when using of several drones it's necessary to coordinate the work of operators. According to the requirements of aviation rules of the State Aviation and aviation engineering support, the group can't be less than three people;

3. During the work of drones groups from different subdivisions of EMERCOM of Russia at the same place of emergency a need arises to appoint responsible person (air traffic manager) who is well-informed with the territory and classification of air space of the place of emergency and specification of drones.

5.2. The press and mass media

At the exercise a lot of attention was paid to work with mass media.

The exercise was covered by 20 various mass media sources, including social media ("Twitter" and "Facebook"), regional TV channels, news agencies and printed media.

During the exercise the current activities was covered by 30 mass media sources including Federal information agencies, official websites of EMERCOM of Russia, of Federal Customs Service, social media, regional TV channels, news agencies and print media.

5.3. Innovations



One of the main goals of the exercise was to demonstrate new technologies and methods of work in the field of elimination and prevention of emergencies in the Barents region.

Following the results of the exercise it should be noted the following perspective types of equipment and methods of work:

- portable backpack individual fire-extinguishing equipment – used by motorcycle special rescue and fire division of the Main Directorate of EMERCOM of Russia for Novgorod region and Sweden fire and rescue crew;
 - module fire engineering (container vehicle) – used by Swedish and Finnish fire and rescue crews. In general, our future lies with the transformed universal engineering, portable individual equipment for extinguishing and means for remote (distance) suppression of fires (such as clusters, grenades, robots etc.);
 - indication and visualization of rescuers and vehicles. Swedish fire and rescue crews used the special alarm telescopic masts on fire trucks allowing to define visually the location of rescue divisions, especially in the night-time conditions and bad weather conditions;
 - mobile smoke exhaust system for fire and rescue crews – were used by Swedish rescue and fire crews;
 - modern individual equipment of rescuers, medical workers and paramedics. The individual equipment of medics of National Air Ambulance Services of Norway should be an example – all the things needed are at hand (special harness systems and backpacks);
 - active using of unmanned aviation systems by Russian side for the solution a set of applied tasks. Air traffic control when using the drones and helicopters during elimination of emergency;
- method for evaluation of emergency medical response efficiency developed by the All-Russian center for Disaster Medicine



6. CONCLUSION

Close international cooperation provide for creating a space of stability, trust and sustainable development of rescue activity in the Barents region.

Overall impression

Head of the delegation of Finland Esko Tapio Koskinen emphasized that the exercise was carried out at the high level.

«We spent three fruitful training days here in Petrozavodsk, – Esko Tapio noted. – It should be noted an excellent organization of exercises. On behalf of the Finnish fire and rescue service and on behalf of my colleagues I can tell that they are very satisfied how the exercise was held. It is very important that neighboring states have possibility to perform such joint drills. On such events we study and we recognize each other. In conclusion let me to thank exercise organizers, staff of fire and rescue divisions for good works».



Representative of the Kingdom of Norway Sicily Doo noted: «Dear exercises organizers, let me express gratitude for inviting to participate on exercises. I and my delegation are impressed by the planned and organized event. In our wide region opportunity to stage similar drills is necessary. In our wide region such exercises are necessary. Regional cooperation such as in the Barents region plays very important role. To be able to response quickly to emergencies, we need to support and to develop cooperation between services which take part in their elimination. Cooperation between Russia, Finland, Norway and Sweden in the sphere of safety in emergency situations is very important especially in Barents Region. Barents Rescue is a good example of importance of further cooperation in modern conditions. Hopefully that all of us will make the contribution to assessment of exercises as present as will the future».

Sweden representative Sicily Lustrem noted: «On behalf of our national agency I would like first of all to thank warmly the participants of the exercises, special gratitude to organizers for preparatory work. Sweden will become the next host country for the “Barents Rescue”. There are a lot of things which we can use during future preparation of exercises. During discussions of stages of exercises the



representatives of delegation noted that each participant, each party perfectly knew those tasks. We want to keep it and in the upcoming exercise».

Following the results of exercises the participants noted a perfect organization of all stages of the exercises by colleagues from the Main Directorate of EMERCOM of Russia for the Republic of Karelia and North-West Regional Center of EMERCOM of Russia. Also it was noted the leading role of deputy chief of North-West Regional Center of EMERCOM of Russia colonel of internal service A.I. Bondar and deputy chief of the Main Directorate of EMERCOM of Russia for the Republic of Karelia colonel of internal service S.G. Nemchinov.



All forces of participating countries in general worked were well-coordinated. Exercises allowed to check the level of preparation of all forces and to train those situations which can occur. It showed that in case of emergencies there will be no problem with coordination and cooperation.

It was also noted that the exercises gave important experience in using methods of carrying out of rescue works and of information exchange between participants. There was an opportunity to test the new equipment. All this points emphasized the importance of carrying out exercises for a large number of participants, and also use

of different types of equipment, methods of rendering medical and psychological assistance.

High level of cooperation and high level of professional behavior were shown by each country. Participants from different countries worked together well easily and quickly, their heads didn't spend a lot of time for decision-making. This fact emphasizes the importance of exercises because only while working together it is possible to achieve understanding. Also the high level was shown by students of the State University of Petrozavodsk who was playing the role of injured people. 60 students and 5 teachers of university were involved in the action.



The students were involved in various stages of exercises: preparation, a road accident rescue operation, a hotel collapse and in the sea accident ship collision with the subsequent fire on the passenger ship. The invaluable contribution to the exercises was made by the staff of the linguistic center of the State University of Petrozavodsk under the leadership of the director of the center Kulikovskaya Lyudmila Yurjevna and also by the staff of the Center for international cooperation and information policy of Saint-Petersburg University of State Fire Service of EMERCOM of Russia. Their high-quality interpretation gave valuable help to organizers and participants of exercises in communication. The exercises were supported by police, rescue services, teams for search and rescue, medical service, psychologists, dog specialists etc.

Of course, sometimes it was necessary to cancel some operations because of some difficulties at interaction of teams. But generally all operations were performed successfully and in time that once again shows the high level of exercises preparation.

Planning recommendations for the next exercises Barents Rescue-2019

1. It seems advisable to plan one practical stage per day. It will allow to evaluate deeply all the activities done;
2. Daily, after practical stage it is necessary to provide conclusive discussion in the working groups. It will allow to introduce amendments on the following stage of exercises will increase their efficiency;
3. At the next exercises it is reasonable to involve participants of the previous exercises for possibility of comparison and accumulation of experience;
4. In some stages it was involved too many participants and evaluatoters. It is necessary to dispose proportional participants that all were equally involved in work.

Proposals for organization of the next Barents Rescue-2019 exercise

At the organization of the Barents Rescue-2019 exercise the following topics could be interesting for all members:

1. Modern technologies and methods of searching people including:
 - search and rescue missing people on wilderness (woods) on vast areas;
 - search and rescue missing people on water area;
 - rescue and evacuation of injured from hard-to-reach places: natural environments, water area, close spaces;
2. Modern technologies for remote (distance) suppression of fires, rescue operations which includes:
 - modern (electronic, infra-red, hyper acoustic etc.) surveillance systems, searching people in buildings, a-smoke, zero view, under debris;
 - fire extinguishing and rescue operations on special hazard conditions (explosive hazard, collapse, electricity hazard or dangerous substances) using robotic tools (surveillance, threat analysis, localization of secondary dangerous factors of fires), means for remote (distance) suppression of fires (such as clusters, grenades etc.);
3. Modern technologies for rescuing people and fire extinguishing on high-rise buildings including:
 - rescue operations on high-rise buildings using aircraft and transporting rescue capsule;
 - delivery of fire-fighting crews and equipment on high;
 - technology of fire suppression at heights exceeding possibilities of pump installations of the main fire trucks.

The problem to be studied is the legislative basis of the first aid on the territory of Russian Federation by foreign medical personnel. It's necessary to initiate consideration of this question at federal level.

For the entrance of rescuers from the Kingdom of Sweden to the territory of Russian Federation (in the simplified order) it's necessary to arrange for the relevant intergovernmental agreement.

Conclusions

1. The objectives of exercises are achieved, and tasks were successfully carried out.

2. The parties gained practical knowledge in the field of interaction of rescue and firefighting divisions, medical, psychological and dog services, and also governing bodies and staffs of member countries of the Barents region.

3. Communication in the field of emergency response assistance requests, grouping of forces and means participating in elimination of emergencies were trained.

4. Issues on the simplified border-crossing regime for rescue and firefighting divisions were exercised.

5. Participants had got operational teamwork knowledge.



*October 2017
Petrozavodsk*



7. LIST OF ABBREVIATIONS

Barents region – Barents Euro-Arctic Region;

ES – Emergency situation;

Exercises – International exercises for rescue services of Barents Region countries «Barents Rescue 2017»;

NWRC of EMERCOM of Russia – North West Regional Center of EMERCOM of Russia;

BEAR agreement – agreement between countries-members of Barents Euro-Arctic Region Council in the field of emergency prevention and elimination;

MD of EMERCOM of Russia – The Main Directorate of EMERCOM of Russia;

S-Pb University of EMERCOM of Russia – Saint-Petersburg University of State Fire Service of EMERCOM of Russia;

BJM – Barents Joint Manual

RTA – Road traffic accident;

NCCM of EMERCOM of Russia– National Center for Crisis Management of EMERCOM of Russia;

CCM – Center for Crisis Management;

MIA – Ministry of Internal Affairs;

FSB – Federal Security Service of Russian Federation;

FH – Federal highway;

UAS – Unmanned aircraft system;

ACERM of EMERCOM of Russia – All Russian Center of Emergency and radiation medicine named after A.M. Nikiforov;

SISV of EMERCOM of Russia – State Inspection for Small Vessels of EMERCOM of Russia;

CEPA of EMERCOM of Russia – Center of Emergency Psychological Aid of EMERCOM of Russia;

Spec. – Specifications;

SRFS – Specialized Rescue and Fire Station;

FRS – Fire and rescue station;

PGU – State University of Petrozavodsk;

TRC – Transporting rescue capsules;

CPSC – Ruza's command post supporting center of EMERCOM of Russia;

Nevskiy RC – Nevskiy Rescue Center;

NTS – National telephone network;

MDCN – Ministry digital communication network;

VC – video conference;

PCN – public communication network;

MMRF – Motor maintenance and repair factory;

**RN HMD of EMERCOM of Russia – Radio network of the Head of the
Main Directorate of EMERCOM of Russia;
TCDM – Territorial Center for Disaster Medicine;
SRS of Republic of Karelia – Search and Rescue Service of Republic of
Karelia
EMS – Emergency Medical Service**

