Search and rescue exercise
“Arctic-2014”
Exercise Location and the legend

Location of the exercise: the Barents sea area with the center in the point with coordinates Lantitude-69° 15,57 N Longitude-57° 17,17 E (the coordinates of the “Prirazlomnaya” Offshore Ice-resistant Oil-Producing Platform radius 25 kbl (4630 m). Severe weather conditions: North-West wind up to 12 meters/sec, haze, visibility 1-2 km, air temperature +7+9 °C. Wave height up to 0.7-0.8 meters.

Exercise legend:
Tanker with crude oil that just left “Prirazlomnaya” Offshore Ice-resistant Oil-Producing Platform collided the service boat, the tanker is ruptured, there are suffered, five crew members fell overboard, oil spill about 1,200 tons, there is fire on board the tanker

There are several places of action: simulated fire fighting on a tanker; fell overboard were searched in all adjacent to the platform area; elimination of oil spills was carried out not far from the platform and on shore nearby settlement Varandey
Four stages

Stage 1. Search and rescue of persons in disaster at sea

Stage 2. Assistance to the ships in distress

Stage 3. Oil spill response at sea

Stage 4. Protection and clean up of shoreline from oil pollution
Stage 1
Search and rescue of persons in disaster at sea

Means involved:

- aircraft Il-38 with the aeronautical rescue container of the Northern fleet marine aviation;
- aircraft An-26 with the parachute group (3 persons) of the Northern fleet naval aviation;
- rescue towboat “Altai” of the Northern fleet;
- patrol boat of the Federal Security Service of Russia;
- helicopter with electric winch equipment;
- aircraft Be-200 of the EMERCOM of Russia;
- 3 rescue swimmers
PLAN
Conduction Stage 1
Search and Rescue Exercise "Arctic-2014"

Topic: Search and rescue of persons floating at sea in individual life-saving appliances

Exercise objectives:
1. Check the actions of controls authorities, response capabilities and equipment of functional subsystem organization and coordination of search and rescue services (both Russian and foreign) on search and rescue of persons in distress at sea and ship in distress at sea in search and rescue regions of the Russian Federation of a uniform state system of prevention and liquidation of emergency situations;
2. Exercise interaction of the operational and emergency dispatch services of the Russian Federation with neighboring states in the aviation and maritime search and rescue of persons in distress at sea in the Arctic zone of the Russian Federation;
3. Check level of preparedness of the rescue teams to the liquidation of consequences of a maritime accident.

Time of exercise: H+00.00 – H+00.40.

Area of exercise: Barents sea, OISP Prirazlomnaya.

List of participants of Stage 1 exercise:
- salvage tug "PAMIR" project 1452 Northern Fleet;
- aircraft An-26 with contingency rescue paratrooper group (3 persons) naval aviation of the Northern Fleet;
- aircraft IL-38 (reserve - TU-142) with aviation rescue container CAS-150 of the naval aviation of the Northern Fleet;
- ship, project 745, CG, BD FSB of Russia (BD FSB of Russia on the Murmansk region);
- aircraft Be-200 (under favorable hydrometeoconditions).

Reserve:
- helicopter Mi-8 with DLP-150;
- 3 swimmer-rescuers from Murmansk FSI "Ukhtinskaya RSRB" (FSI "Ukhtinskaya RSRB").

Scenario of Stage 1 exercise:
Accordingly to the request of MRCC Arkhangelsk IL -38 of Northern Fleet takes off from an airport, goes to the area of the accident, produces scout the area of the accident, finds persons floating at sea, resets CAS-150 and orients AN-26 of Northern Fleet to persons floating on the water. After transmitting the information, aircraft IL-38 comes from area of the exercise and returns to its base. The AN-26 of Northern Fleet goes to the point of finding 3 persons at sea, resets rescue paratrooper group of 3 persons. Then it takes off on the assigned altitude and directs the rescue capabilities on persons floating on the water.

The ships, which are involved in the SAR operation, act on the instructions (Ins) of the on-scene coordinator, detect and raise persons floating on the water.

Rescue tugboat "PAMIR", project 1452, of the Northern Fleet raises rescued persons on board (3 mannequins) as well as three rescuers-parachutists and liferaft of CAS-150.

Ships, project 745, CG, BD FSB of Russia raise persons floating on sea on board.

Accordingly to the instruction of the Coordinator SAR-operation (MRSC Arkhangelsk) and after the receiving relevant permission of the Head flight the helicopter Mi-8 takes off from airport Varandej and performs aircraft search following the data from the aircraft AN-26. Upon detection of a person floating in the water, it reports about its location to the on-scene coordinator. Accordingly to the instruction of the on-scene coordinator, it produces the lifting one person floating in the water (actually one mannequin). After lifting the mannequin out of the water it returns to the airport of departure to transfer the injured to the clinic.

- under favorable hydrometeoconditions:
  - Aircraft Be-200 of EMERCOM of Russian produces the landing on water, takes on board one seriously injured members of the tanker crew who is delivered to a specialized medical facility in Moscow. Sea rescue tug "NEOTRASIMUY" of EMERCOM of Russia provides the landing of aircraft Be-200 in the area of the accident.

Area of finding the persons floating at sea
Testing the actions of contingency rescue paratrooper group from An-26
Finding and lifting of persons floating at sea on board of ship

List of participants of Stage 1 exercise:
- 3 swimmer-rescuers from Murmansk FSI "Ukhtinskaya RSRB".

Area of exercise with center 69.91557 N Long-57.1717 E (OISP) R-25 cables (4630 m) Circle centered OISP and 500 m radius is FORBIDDEN for navigation.
Stage 2
Assistance to the ships in distress

At the command of the Head of the exercise the smoke flare was ignited on board the tanker to simulate the fire.

The crew of the damaged vessel cannot cope with fire on their own. Threats to the vessel, cargo and crew are assessed and the rescue equipment is prepared for descending.

For carrying out the rescue works to extinguish the fire on the tanker msv “Karaev” of State Maritime Rescue Coordination Centre (SMRCC) was allocated.
Conduction Stage 2
Search and Rescue Exercise "Arctic-2014"

**Topic:** Assistance to ship in distress

**Exercise objectives:**
1. Check the readiness of the management authorities, response capabilities and equipment of the operational and emergency dispatch services of the Russian Federation to liquidation of consequences of a maritime accident in the Arctic zone of the Russian Federation;
2. Check the practical experience of the government officials of the management authorities in the decision-making, organization of applying and management of response capabilities and equipment on during the providing of assistance to ship in distress at sea in firefighting;
3. Check level of preparedness of the rescue teams to the liquidation of consequences of a maritime accidents.

**Time of exercise:** H+00.00 – H+00.20

**Area of exercise:** Barents sea, OiSP Prirazlomnaya

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Response capabilities for providing assistance to ship in distress in firefighting

**msv "SPASATEL ZABORSCHIKOV" project – MPSV07**

- Special water extinguishing system
  - 3 fire monitors (1000 m³/h for water or 300 m³/h for foam jet length 120 m, jet height 55 m at a distance of 70 m);
  - 2 pumps (1450 m³/h each);
  - 4 valve boxes for connection of fire-sleeveless.

- Special water extinguishing system for hand water barrels.

- Special foam extinguishing system consisting of:
  - 2 pump-foamer (18 m³/h each);
  - 3 batchers (300 L/min each);
  - fire monitors (140 m³/h each);

- Special powder extinguishing system
  - setting powder extinguishing (reservoir powder - 1130 kg, nitrogen cylinders, pipes and fittings);
  - fire monitors (40 kg/s);
  - 2 fire monitors with sleeves.

- System of water-screen
  Provides water supply at least 70 l/min for 1 m length screen.

- Fire protection supplies
  - portable fire extinguishers OP, P, OU;
  - sets of fire tools;
  - gas detection system of flammable vapors and gases.

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Area of exercise with center 69º15,57 N Long-57º17,17 E (OiSP) R-25 cables (4630 m)

Forbidden area for navigation of ships and aviation R-500m

**OiSP Prirazlomnaya**

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**Simulation fire**

**Notification about incident**

**Prospecting of emergency situation, liquidation of incident consequences**

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**Arrival msv in the area of incident**

**Extinguish the fire on ship in distress**

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**SD t “MIKHAIL ULYANOV”**

(reserve – t “KIRILL LAVROV”)

**Arrival msv in the area of incident**

**msv "SPASATEL KAREV"**

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**Appendix 4**
Stage 3
Oil spill response at sea

As a result of collision with a service boat South-East of "Prirazlomnaya", the tanker was damaged and there was oil spill, estimated volume up to 1200 tons, ship’s general alarm was announced at the damaged tanker and the crew took measures to prevent further spill.
**Topic:** Oil spill response at sea as a result of tanker accident.

**Exercise objective:**
Exercise interaction of the control authorities, response capabilities and equipment of the functional subsystem organization of work on the prevention and elimination of oil spills at sea from vessels and facilities regardless of their departmental or national origin during the oil spill response in sea as a result of tanker accidents.

**Time of exercise:** H+00.00 – H+01.00.

**Area of exercise:** Barents sea, OISP Prirazlomnaya.

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**Forbidden area for navigation of ships and aviation R-500m**

**Area of exercise with center 69°15,57 N Long-57°17,17 E (OISP) R-25 cables (4630 m)**

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**Response capabilities and equipment**

**SMRCS:**
- Operational group, SMRCC.
- (msv) "SPASATEL KAREV".
- Northern Branch of SMRCS:
  - FSI “Murman Maritime Port Administration”:
    - MRCC Murmansk;
    - LLC “Gasprom Neft Shelf”;
    - mics "YURY TONCHEV" (relief), "VLADISLAV STRISHEV" and supply ship standby (ship standby) in the area of OISP "Prirazlomnaya".

**JSK "LUKOIL":**
- supply vessel (sv) "TOBOY";
- boom laying boat "YUSHAR".

**JSK “SOVCOMFLOT”:**
- tanker "MIKHAIL ULYANOV" (reserve - tanker "KIRILL LAVROV") for imitation of the ship in distress.

**EMERCOM of Russia:**
- NCMC, Crisis Management Centers (CMC) of EMERCOM of Russia on the Murmansk region, Arkhangelsk region and Nenets Autonomous District,
- CSJK "Transac":
  - analytical information group
  - situation Centre of the Governor of the Nenets Autonomous Okrug.

**Boat for pollution monitoring working boat PK 700**

**Ship in distress "MIKHAIL ULYANOV" (reserve - t "KIRILL LAVROV")**

**Boom order # 1**

**Boom order # 2**

**Oil slick drifts towards the shore**

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**Topic:** Oil spill response at sea as a result of tanker accident.

**Exercise objective:**
Exercise interaction of the control authorities, response capabilities and equipment of the functional subsystem organization of work on the prevention and elimination of oil spills at sea from vessels and facilities regardless of their departmental or national origin during the oil spill response in sea as a result of tanker accidents.

**Time of exercise:** H+00.00 – H+01.00.

**Area of exercise:** Barents sea, OISP Prirazlomnaya.
Notification of Norwegian and American sides of the oil spill was done via MRCC Murmansk and MRCC Vladivostok directed by SMRCC in accordance with the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic
Operator organized construction of oil collecting means according to the simulation results of the spread pollution and prediction of its development taking into account the actual hydro meteorological conditions.

| Boom Order No. 1. |
| J-configuration consisting of: multifunctional ice resistant ship (MPLS) "Yuri Topchev" and "Vladislav Strizhov“, heavy marine booms LAMOR HDB 2000 mm, 400 meters, skimmer Lamor Free Floating Offshore |

| Boom Order No. 2. |
| J-configuration consisting of: service vessel “Toboj“ and boom laying boat “Yushar“, heavy marine booms LAMOR HDB 1500 mm, 250 m skimmer Lamor Arctic. |

| Boom Order No. 3. |
| Offshore rescue vessel “Karaev“ after assisting the injured vessel in extinguishing the fire using wide side oil gathering system collects oil spots of pollution after orders No. 1 and No. 2 (in the path of the oil spills drift) |
Stage 4
Protection and clean up of shoreline from oil pollution

Collected oil-water mix, oil-contaminated soil and waste in accordance with the plans for the prevention and elimination of oil spills of the LLC "Varandey terminal" and LLC "Gazprom Neft shelf" were disposed of (conditionally) as follows:
- oil-water mix was transferred to shore facilities;
- oil-contaminated soil and waste — for the heat treatment in recycling plants, transportation and disposal of residues on special landfills.
**PLAN**

**Conduction Stage 4**

**Search and Rescue Exercise "Arctic-2014"**

**Topic:** Protection and cleanup of coastal line from oil pollution.

**Exercise objective:**

Exercise interaction of control authorities, response capabilities and equipment of the functional subsystem organization of work on the prevention and elimination of oil spills at sea from vessels and facilities regardless of their departmental or national origin as well as territorial subsystem of Nenets Autonomous District in oil spills in sea as a result of tanker accidents, protection and cleanup of the coastal line from oil pollution.

**Time of exercise:** H+00.00 – H+01.00.

**Area of exercise:** Barents sea, OISP Prirazlomnaya.

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**Forbidden area for navigation of ships and aviation**

R-500m

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**Area of exercise with center 69º15,57 N Long-57º17,17 E (OISP) R-25 cables (4630 m)**

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**Ship in distress** «MIKHAIL ULYANOV» (reserve - t «KIRILL LAVROV»)

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**Boat for pollution monitoring** working boat PK 700

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**Protection of coastal line**

**Cleanup of coastal line**

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**Boom trap**

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**Oil slick drifts towards the shore**

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**Response capabilities and equipment**

- **Northern Branch of SMRCs:**
  - emergency-rescue unit for protection and cleanup of shoreline from oil pollution.

- **LLC «Gasprom Neft Shelf»:**
  - oil spill response team «Coast» LLC «Ecoshelf Balt».

- **JSK «LUKOL»:**
  - emergency-rescue unit for protection and cleanup of shoreline from oil pollution.

- **LLC «Poshservice Pirant»:**
  - emergency-salvage unit with fire appliances and equipment.

- **EMERCOM of Russia:**
  - rescue workers of the Northern West search and rescue teams (6 rescuers);
  - State Central Airmobile Rescue Unit (Centrospas) (10 rescuers);
  - GOSAKVASPAS (10 rescuers);
  - equipment for protection and cleanup of shoreline from oil pollution;
  - fire brigade of the St "Specialized Department" of the Federal Fire Service number 48 EMERCOM of Russia.

- **Nenets Autonomous Okrug:**
  - Emergency-Rescue unit with capabilities and equipment of protection and cleanup of the coastal line from oil pollution of General Directorate of the Nenets Autonomous Okrug. Search and Rescue Service of the Nenets Autonomous District.

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**Topic:** Protection and cleanup of coastal line from oil pollution.

**Exercise objective:**

Exercise interaction of control authorities, response capabilities and equipment of the functional subsystem organization of work on the prevention and elimination of oil spills at sea from vessels and facilities regardless of their departmental or national origin as well as territorial subsystem of Nenets Autonomous District in oil spills in sea as a result of tanker accidents, protection and cleanup of the coastal line from oil pollution.

**Time of exercise:** H+00.00 – H+01.00.

**Area of exercise:** Barents sea, OISP Prirazlomnaya.

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Conclusions:

The plan of exercise has been fully completed, set tasks were accomplished.

Were marked highly skilled actions of the professional emergency rescue formations staff on localization and liquidation of the oil spill in the sea and the protection and clean-up of coastal strip from oil pollution, competent actions of the directing staff.

The exercise gave a good marine practice.
Problem issues

The analysis of the exercise revealed the following drawbacks:

During the exercises there were cases of unstable VHF communication of "Prirazlomnaya" with the Committee for Emergency Response and Ensuring Fire Safety of LLC "Varandey terminal", which were eliminated by the transition to the backup channel of communication "Varandey Radio -5".