

МИНИСТЕРСТВО ОБРАЗОВАНИЯ И НАУКИ РОССИЙСКОЙ ФЕДЕРАЦИИ
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Кафедра иностранных языков для технических направлений

АНГЛИЙСКИЙ ЯЗЫК

Методические указания
по развитию навыков и умений чтения,
аудирования и устной речи
по теме

“PROFESSIONAL ENGLISH IN EMERGENCY”

Факультет: экологии

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Методические указания, состоящие из четырёх частей, приложения и электронного носителя, предназначены для студентов факультета экологии, изучающих английский язык в рамках дисциплины «Иностранный язык» по направлению: 20.03.01 Техносферная безопасность. Их целью является развитие у студентов навыков и умений чтения, аудирования и устной речи по теме “Professional English in Emergency”.

Утверждено редакционно-издательским советом ВоГУ

Составитель: Л. Н. Смирнова, доцент

Рецензент: канд. фил. наук, доцент кафедры массовых коммуникаций
Вологодского филиала Международной академии бизнеса и
новых технологий (МУБиНТ) Н. В. Мрвич

UNIT 1. GENERAL CONCEPTS ON EMERGENCY

1. Learn the pronunciation and meaning of the words:

imply [im'plai] подразумевать означать

measure ['meʒə] мера

hazardous ['hæzədəs] рискованный, опасный

earthquake ['ə:θkweik] землетрясение

tsunami [tsu'na:mi] цунами; громадная (сейсмическая) морская волна

hurricane ['hʌrikən] ураган

flood [flʌd] наводнение

eruption [i'rʌpʃ(ə)n] of извержение (вулкана)

volcano [vɒl'keinou] вулкан

drought [draʊt] засуха

swampy [swɒmpi] заболачивание

avalanche ['ævələ:nʃ] лавина, снежный обвал

poisonous ['pɔiznəs] ядовитый

drowning [drauniŋ] утопление, потопление

negligence ['neglidʒəns] небрежность

notify of smth. ['noutifai] сообщать, уведомлять

arable ['ærəbl] пахотный (о земле)

superfluous [sju:'pə:fluəs] излишний, чрезмерный

withering ['wiðəriŋ] увядание, иссушение

contamination [kən,tæmi'neiʃən] загрязнение, заражение

disease [di'zi:z] болезнь

asthma ['æsmə] астма (приступ удушья)

catarrh [kə'tɑ:] катар (воспаление слизистой оболочки дыхательных путей)

silicosis ['silikosis] силикоз (болезнь, возникающая вследствие вдыхания пыли, содержащей силикаты кремния)

environment [In'vaiənmənt] окружающая среда

be caused by smth. быть вызванным, иметь причиной что-либо
belong to smth./smb. зд. относиться к чему-либо, кому-либо
need for smth. надобность, нужда в чём-либо
poison with smth. отравлять чем-либо
result in smth. кончатся, иметь результатом что-либо
be exposed to smth. подвергаться (опасности, риску и т.д.)
be based on smth. быть основанным на чём-либо
be connected with smb./smth. быть связанным с кем-либо/чем-либо
impact on smb./smth. влияние, воздействие на кого-либо/что-либо
contribute to smth. делать вклад во что-либо
depend on smb./smth. зависеть от кого-либо/чего-либо
worth заслуживающий; стоящий затраченного времени или труда

2. Explain the formation of the words given below, translate them into Russian:

expression, desirable, extremity, hazardous, natural, explosion, negligence, superfluous, contamination, environmental, gaseous, contributor, combustion, proliferation.

3. Translate the following word combinations:

Carbon dioxide, carbon monoxide, volatile organic compounds, health and energy policies, household energy.

4. Translate the Participle I and II in the following word combinations:

An adjective **applied** to speaking of space; **swampy** (marshy) soils; **burning** chemical substances **resulting** in poisonous fumes and smokes; the hazards **caused** by a man; **drying up** rivers; **withering** plants; **dwelling** houses; clashes of transport vehicles **entailing** death accidents; **delivered** energy; **based** on the latest surveys the specialists say; **suspended** solids; carbon **created** from household burning of biofuels; the **specialized** subjects **studied** by the students of this proliferation.

5. What natural and humanitarian hazards do you know? Read the text «Life-secure in extreme situations». Answer the following questions:

- 1) What is the definition of the word “extreme”?
- 2) What does the word “extremity” mean?
- 3) What are the reasons of extreme situations?
- 4) What are the natural hazards?
- 5) How does negligence and man’s activity influence the environment?
- 6) What hazards can be caused by men?
- 7) What can the pollution of the nature result in?
- 8) What are specialized subjects studied at the faculty?
- 9) Is it possible to prevent natural and humanitarian hazards?

Text A

Life-secure in extreme situations

The word “extreme” as an adjective applied to speaking of space (at or near the end or edge); time (earliest or latest), quality (highest or greatest; reaching a high degree), person (very advanced; not moderate), action (very drastic); as a noun the word extreme means something unusual. Expression “to go to extremes” implies “to take extreme measures; to do more than is usual, necessary or desirable”. The derivative noun “extremity” also means “the extreme point or end” and the word – combination “extreme measures” is equal to “to go (to proceed) to extremities” or “adopt very strong or unusual measures”.

The extreme situations are hazardous ones, they may be caused by nature or by man. To the natural factors may belong: earthquakes, storms, tornadoes, tsunamies, hurricanes, floods, eruptions of volcanoes, droughts, damages of roads, bridges, buildings, ships sinking, swampying (marshying) soils, avalanches, explosions at chemical enterprises, burning chemical substances resulting in poisonous fumes and smokes, lightning, landslides, glacierslides, ice storms, radiation, drowning, epidemics.

Some of these hazards are long-term, the others are sudden. Some may happen because of the negligence of competent structures, which should notify the citizens and official services of the need for special care in order to avoid losses or reduce the number of victims. To the hazards caused by a man may belong: fires, peril of arable soils in the result of superfluous fertilizes, drying up rivers and other basins, withering plants, crashes of airplanes, poisoning water basins with chemicals, crashes of dwelling houses, disrepair everything connected with electric current, terror acts, strikes, damages of pipelines, clashes of transport vehicles entailing death accidents.

Some extreme situations are not destructive as such, but they damage humans health: air and water contamination, noise, fumes, smokes; all these may result in various diseases, including acute respiratory infections and asthma, nasal catarrh, major skin diseases, silicosis and other.

Most of the population is exposed to another danger of environmental pollution – to pesticides. It has been long known that they may be toxic and effect the human health.

Besides, the scientists note, that total emissions per unit of delivered energy were substantially greater from burning solid fuels than from burning liquid or gaseous fuels. Based on the latest surveys the specialists say, that the use of biofuels for cooking and heating can be a major contributor to air pollution. During combustion, carbon in biofuels is converted to suspended solids and gases, including carbon dioxide, carbon monoxide and volatile organic compounds. Black

carbon (soot) created from household burning of biofuels, is another pollutant that can have major impacts on the environment. In the result, the challenge for health and energy policies is to increase access to clean energy, minding that household energy, technologies largely depend on the behavior of people who use them.

One of the specialized subjects studied by the students of this proliferation is physiology, which is closely connected with the medicine of catastrophes. It is worth mentioning that the main purpose of the specialists of such qualification is to forecast and prevent extreme situations. For this it is necessary to reveal the reasons of the hazards.

6. Find in the text English equivalents for the following word combinations.

Learn them by heart: небрежность компетентных структур, уведомить граждан и официальные сервисные службы о необходимости обратить особое внимание на что-либо; избежать потерь, уменьшить количество жертв, наносить ущерб здоровью человека, предсказывать и предотвращать чрезвычайные ситуации, обнаруживать причины возникновения опасных ситуаций.

7. Insert the proper prepositions and conjunctions into the sentences:

1) The extreme situations may be caused ... nature or by man. 2) ... the natural factors may belong earthquakes, floods, eruptions of volcanoes, droughts, damages of roads, explosions ... chemical enterprises. 3) Some hazards happen ... the negligence of competent structures, which should notify the citizens and official services ... the need ... special care ... to avoid losses or reduce the number of victims. 4) Air and water contamination, noise, fumes, smokes may result ... various diseases. 5) Most of the population is exposed ... pesticides. 6) The scientists note, that total emissions ... unit of delivered energy were substantially greater ... burning solid fuels than from burning liquid or gaseous fuels. Based ... the latest surveys the specialists say, that the use of biofuels ... cooking and heating can be a major contributor ... air pollution. 7) Black carbon can have major impacts ... the environment. 8) Technologies largely depend ... the behavior of people who use them. 9) Physiology is closely connected ... the medicine of catastrophes.

8. Point out sentences with Indefinite Passive and Present Perfect Passive.

9. 1) Translate the sentence: It is worth mentioning that the main purpose of the specialists of such qualification is to forecast and prevent extreme situations.

2) Express your opinion: What books are worth reading and why? What films are worth watching? What places in the world are worth seeing? and so on.

Text B

Mitigating the emergency consequences

1. Learn the pronunciation and meaning of the words:

mitigate ['mitigeɪt] смягчать, уменьшать, облегчать
explosion [iks'pləʊzən] взрыв
release [ri'li:s] выход, освобождение
disruption [dɪstrʌpʃən] разрушение
identification [aɪ,deɪntɪfɪ'keɪʃən] выяснение, установление
scenario pl. os [-ouz] [si'nɑ:riou] сценарий, ход событий
failure ['feɪljə] авария, повреждение
breach ['bri:tʃ] нарушение
circumstance ['sə:kəmstəns] обстоятельство

2. Explain the formation of the words given below, translate them into Russian:

Emergency, disruption, planning, identification, preparedness, accidentally, criticality, accessible, systematically, likelihood, fundamental.

3. Find an inappropriate word:

- 1) disease, asthma, catarrh, silicosis
- 2) avalanche, earth-quake, hurricane, drought, poisoning water basins with chemicals
- 3) hazardous, superfluous, poisonous, destructive, arable
- 4) assess, evaluate, prepare, respond, manage
- 5) multigate, damage, disrupt, poison, threaten

4. Translate the following word combinations:

The emergency consequences, an aircraft or rail accident, emergency management, hazard identification, the reactor containment building, safety and control equipment failure, the key question, the assembly points, the recovery process.

5. Write the sentence correctly:

emergency management is a vast discipline that includes planning hazard identification mitigation preparedness training testing and coordination proper and effective emergency management can only be done with a wider ranging understanding and experience of the subject.

6. Translate the following sentences. Mind the verb *would*.

- 1) The first step in any emergency plan is to identify what **would** constitute an emergency for a given business, workforce or local population.
- 2) Other prominent threats **would** be external events such as fire or floods.

7. Translate the sentences. Mind the word *once* and the Infinitive Passive *to be asked* 1) **Once** the hazards are identified, the risks prioritized and the failure scenarios developed, teams and persons responsible for each stage of events must be arranged. 2) In planning the response to an emergency, some of the key questions that need **to be asked** are: communication, equipment, evacuation plan and training.

8. How can you mitigate the emergency consequences? Read the text. Answer the following questions:

- 1) What circumstances may cause an emergency situation?
- 2) How is it possible to mitigate threats of emergency?
- 3) What are internal and external threats?
- 4) What is emergency management and why is it important?
- 5) What are the stages of mitigating the hazard?
- 6) What is it necessary to undertake under emergency conditions?
- 7) Can the recovery stage be fully realized?

An emergency is a situation arising from an event or set of circumstances (such as an aircraft or rail accident, fire, explosion, radioactive or toxic release, major storm or flooding), which threatens or causes serious disruption to life, property, businesses or the environment. Emergency management is the process of mitigating threats and preparing for, responding to, and recovering from an emergency.

Emergency management is a vast discipline that includes planning, hazard identification, mitigation, preparedness, training, testing and coordination. Proper and effective emergency management can only be done with a wideranging understanding and experience of the subject.

The process can be broken up into the following steps:

assess: identification and classification of all threats;

evaluate: assess likelihood and impact of each threat;

mitigate: identify actions that may reduce the risks in advance or mitigate the consequences;

prepare: plan for contingent operations;

respond: take the necessary actions to minimize the impact of the risks that materialize;

recover: return to normal as soon as possible.

The first step in any emergency plan is to identify what would constitute an emergency for a given business, workforce or local population. For example, in a nuclear facility a worst-case scenario might be a heavy aircraft crashing into the reactor containment building.

Other prominent threats would be external events such as fire or floods. Internal threats could be safety and control equipment failure, accidental criticality or loss

of coolant. For other industries, the threats could include a breach of security, loss of workforce or loss of services.

The level of threat must then be evaluated. An understanding of how failures occur and progress can be a valuable tool. Once the hazards are identified, the risks prioritized and the failure scenarios developed, teams and persons responsible for each stage of events must be arranged.

In planning the response to an emergency, some of the key questions that need to be asked are:

communication: do the staff know one another, where the telephone is, what to say and if there is sufficient signage;

equipment: do the people who need access to safety equipment know where it is and how to use it; is it accessible at all times;

evacuation plan: do the staff know the alarms and how to respond, where the assembly points are and to whom they should report?

training: are key staff trained to understand and carry out the emergency procedures; do they have the necessary skills and experience; are the procedures rehearsed and who is responsible for the recovery process?

The recovery stage begins as soon as the consequences of the incident are known. Emergency management is a valuable tool, which if done systematically will enable an organization to reduce the likelihood of an emergency, mitigate its consequence, and ultimately recover. Although industrial accidents are less common, the threat of terrorist attack is growing. But by adopting these fundamental principles, the impact of emergencies can be minimized.

9. Write out from the text English equivalents for the following word combinations. Learn them by heart:

Идентифицировать и классифицировать угрозы, осуществить необходимые действия для минимизации воздействия, оценить и уменьшить вероятность аварии, чрезвычайной ситуации; подготовить план условных действий, смягчить её последствия, полностью поправиться, воздействие чрезвычайных ситуаций может быть минимизировано.

10. Insert the proper words into the sentences:

1) Natural and humanitarian hazards such as (землетрясение, наводнение, извержение вулкана, засуха, разрушение дорог, мостов и зданий, взрывы на химических предприятиях) are caused by nature and man. 2) Some of them happen because of (небрежность компетентных структур), which should (уведомить граждан и официальные сервисные службы о необходимости обратить особое внимание) in order (избежать потерь) or (уменьшить количество жертв). 3) Some extreme situations (наносят ущерб здоровью человека). 4) That's why it is important (предсказывать и предотвращать чрезвычайные ситуации), (обнаруживать причины возникновения опасных

ситуаций). 5) An emergency situations engineers must be able (идентифицировать и классифицировать угрозы), (оценить и уменьшить вероятность чрезвычайной ситуации); (подготовить план условных действий), смягчить последствия чрезвычайной ситуации.

11. Transform the questions into instructions.

F.e.: Do the staff know one another, where the telephone is, what to say and if there is sufficient signage? - One must know one another, where the telephone is, what to say and if there is sufficient signage.

- Do the people who need access to safety equipment know where it is and how to use it; is it accessible at all times?
- Do the staff know the alarms and how to respond, where the assembly points are and to whom they should report?
- Are key staff trained to understand and carry out the emergency procedures? Do they have the necessary skills and experience?
- Are the procedures rehearsed and who is responsible for the recovery process?

12. Translate into English:

Такие бедствия, как землетрясение, наводнение, извержение вулкана, засуха, разрушение дорог, мостов и зданий, взрывы на химических предприятиях могут быть вызваны природными факторами и человеком. Некоторые из них происходят из-за небрежности компетентных структур, которые должны уведомить граждан и официальные сервисные службы о необходимости обратить особое внимание, чтобы избежать потерь или уменьшить количество жертв. Некоторые чрезвычайные ситуации наносят ущерб здоровью человека. Вот почему важно обнаруживать причины возникновения опасных ситуаций, чтобы их предотвращать. Инженер, обучавшийся по направлению «Безопасность техносферы», должен уметь идентифицировать и классифицировать угрозы, оценить и уменьшить вероятность чрезвычайной ситуации, подготовить план условных действий, смягчить последствия чрезвычайной ситуации.

13. Speak on your speciality touching the following items:

What natural and humanitarian hazards do the extreme situations engineers encounter with?

What are the responsibilities of extreme situations engineers?

How are the medicine of catastrophes and emergency management connected with your speciality?

Why did you choose this speciality?

14. 1) Watch the video “Golf Coast Emergency Industrial Training Academy”.

Answer the questions:

1) What is the Golf Coast Emergency Industrial Training Academy? What is its area?

2) What do the areas of training include?

NB:

acre акр (0,4 га)

response ответ; отклик, реакция

facilities оборудование; приспособления; аппаратура

rescue спасение; избавление

confined space ограниченное пространство

incident происшествие; инцидент

trench-collapse обрушение грунта в траншеях, котлованах

high-angle rope спасательный трос (для работы на высоте)

medical first responder человек, оказывающий первую медицинскую помощь

technician специалист; человек, хорошо знающий своё дело

2) Do internet research (www.fireservicecollege.ac.uk) and present the Fire Service College from the UK (facilities, courses, training).

3) Are there similar academies and colleges in Russia? Please do library or internet research and present them (f.e. on www.padlet.com).

4) Make a movie about your department and studied courses using Windows MovieMaker.

UNIT 2. EARTHQUAKES

1. Learn the pronunciation and meaning of the words:

bench [bentʃ] скамья; карниз

exist [ɪg'zɪst] существовать; находиться, быть

exit ['eksɪt] зд. выход

alongside [ə'lɒŋ'saɪd] рядом с

exterior [eks'tɪəriə] внешняя, наружная сторона

casualties ['kæʒjuəlti] несчастный случай; авария

collapse [kə'læps] обвал, разрушение; крушение, гибель

glass [glɑ:s] стекло

ahead [ə'hɛd] вперёд

advance [əd'vɑ:ns] успе́х; продвиже́ние
injury ['ɪndʒərɪ] поврежде́ние; ране́ние; тра́вма
inside ['ɪn'saɪd] вну́тренняя часть
sudden ['sʌdn] внеза́пный
rapid ['ræpɪd] стремíteльный
shake [ʃeɪk] трясти́
shift [ʃɪft] перемещать, передвигать
rock [rɒk] (го́рная) поро́да
beneath [bɪ'ni:θ] под
disrupt [dɪs'rʌpt] наруша́ть
landslides ['lændslaɪd] земля, суша
huge [hju:dʒ] большой, гигантский
rest [rest] отдыхать
consolidate [kən'sɒlɪdeɪt] укрепля́ть(ся)
landfill земля, суша; местность, территория
trailer ['treɪlə] прице́п
tie [taɪ] привязать
anchor ['æŋkə] я́корь
occur [ə'kʊ:] случаться, происходить
trapp [træp] останавливать, задерживать
wound [wu:nd] ранить
appropriate [prəʊpɹɪət] подходящий, пригодный
drop [drɒp] ронять, уронить
cover [kʌvə] укрывать
hold [həʊld] держать; держаться; сжимать
head [hed] голова
neck [nek] шея
kit [kɪt] снаряжение; ранец, сумка; сумка с инструментом, комплект, набор
fire extinguisher [fɪks'tɪŋgwɪʃə] огнетушитель

2. Open the brackets. What word is correct?

1) An earthquake is a (huge, appropriate, rapid) shaking of the Earth caused by the breaking and shifting of rock beneath the Earth surface. 2) This shaking can cause buildings and bridges to (disrupt, collapse, drop). 3) Earthquakes can (cover, hold, occur) at any time of the year. 4) Identifying potential hazards ahead of time and advance planning can (exist, reduce, wound) the dangers of serious injury or loss of life inside an earthquake. 5) Give injured people (kit, fire extinguisher, first aid) where appropriate.

3. Translate the following word combinations into Russian:

Shaking of the Earth **caused** by the breaking and shifting of rock; foundations **resting** on **unconsolidated** landfill; **manufactured** homes; a **reinforced** foundation **anchored** to the ground; **collapsing** walls, **flying** glass, and **falling** objects; **weakened** structures; **injured/ trapped** or **wounded** persons.

4. Translate the sentence. Mind the word *since*: Buildings or trailers and manufactured homes not tied to a reinforced foundation anchored to the ground are also at risk **since** they can be shaken off their mountings during an earthquake.

5. What do you know about earthquakes? Read the text. Answer the questions:

- 1) What is an earthquake? When can it occur?
- 2) What can it cause?
- 3) What buildings are most at risk?
- 4) What can aftershocks cause?

An earthquake is a sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the Earth surface. This shaking can cause buildings and bridges to collapse; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and huge, destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill, old waterways, or other unstable soil are most at risk. Buildings or trailers and manufactured homes not tied to a reinforced foundation anchored to the ground are also at risk since they can be shaken off their mountings during an earthquake. Earthquakes can occur at any time of the year.

The best protection during an earthquake is to get under heavy furniture such as a desk, table, or bench.

The greatest danger exists directly in buildings, at exits, and alongside exterior walls.

Most earthquake-related casualties result from collapsing walls, flying glass, and falling objects.

Identifying potential hazards ahead of time and advance planning can reduce the dangers of serious injury or loss of life inside an earthquake.

Be prepared for aftershocks. Although smaller than the main shock, aftershocks cause additional shaking and may bring weakened structures down. Aftershocks can occur in the first hours, days, weeks, or even months after the quake.

Help injured or trapped persons: Give first aid where appropriate. Do not move seriously wounded persons unless they are in immediate danger of further injury.

6. Watch the video “What to do in an earthquake”. What should you do if an earthquake happens?

7. Watch the video “What to do in the first 30 minutes after an earthquake”.

1) Match the beginnings of the sentences from the left with their ends from the right:

A If you smell gas or hear blowing or hissing noise,	1 turn off the electricity at the main fuse box or circuit breaker. If you have to step in water to get to the fuse box or circuit breaker, call an electrician for advice.
B If you see sparks or broken or frayed wires, or if you smell hot insulation,	2 avoid using the toilets and call a plumber, contact the Water Company and avoid the water from the tap. You can obtain safe water by melting ice cubes.
C If you suspect sewage lines are damaged,	3 open a window and quickly leave the building. Turn off the gas at the outside main valve if you can (use the gas shut off wrench) and call the Gas Company from a neighbor's home.

2) Explain in English what is an emergency kit?

In case of an emergency situation, it is important to have an individual emergency kit prepared and on hand prior to the emergency. An emergency kit is a container of ..., and other supplies that can be used to sustain an individual during lag time. Lag time is the period between the actual occurrence of an emergency and when organized help becomes available, generally 72 hours, though this can vary from a few hours to several days.

UNIT 3. FLOOD

1. Learn the pronunciation and meaning of the words:

flood [flʌd] (of water) наводнение

thaw [θɔ:] оттепель
 dam [dæm] дамба;
 failure ['feɪljə] неудача, провал
 event [ɪ'vent] событие, происшествие
 neglect [nɪ'ɡlekt] забрасывать
 loose [lu:s] свободный, непривязанный
 path [pɑ:ðz] тропа, дорожка; путь
 swiftly ['swɪftli] стремительно
 knock off закругляться, сбавлять, стянуть
 shelter ['ʃeltə] убежище, укрытие
 sweep (swept, swept) away сметать, уносить
 abandoned [ə'bændənd] покинутый; безудержный
 flash [flæʃ] вспышка
 brief [bri:f] короткий
 roll [rəʊl] катиться; перекатывать
 boulder ['bəʊldə] валун
 tear out [tɪə] вырваться
 destroy [dis'trɔɪ] разрушать, уничтожать
 obliterate [ə'blɪtəreɪt] уничтожать
 height [haɪt] высота
 deadly cargo of debris ['dedli 'kɑ:gəʊ 'debri:s] смертоносный груз обломков
 clean up уборка, чистка
 taper off сужаться, зд.: прекращаться, утихать
 recede [ri'si:d] спадать, угасать, слабеть, отступать
 cease [si:s] прекращать
 dislodge удалять, смещать

2. Explain the formation of the words given below, translate them into Russian:

seemingly, endless, illnesses, rearrange, immediately, potentially, inhalation,
 protective, clothing, electrocution, breaker, inadvertent, energization, shielding,
 portable, secondary.

3. Translate the following word combinations: structural damage **caused** by a major event such as an earthquake; water is suddenly let loose downstream, **destroying** anything in its path; six inches of swiftly **moving** water; intense storms **dropping** large amounts of rain, hazards **associated** with cleanup activities; **water-damaged** structures, **rushing** flood waters, a **flood-damaged** building, **unidentified dislodged** containers, flood cleanup work, hazardous material team; utility line workers, a **qualified** electrician, **flooded** areas, a **downed** power line, **de-energized** power line; cleaning branches from a power line; a line **thought** to be de-energized; a **fused** switch.

4. Translate the Participle I in the sentences:

If working in potentially contaminated areas, avoid skin contact or inhalation of vapors by wearing appropriate protective clothing and respirators.

Extreme caution is necessary **when moving** ladders and other equipment.

The employers must take extreme caution **while attempting** to restore power near downed power lines.

When using gasoline and diesel generators, switch the main breaker on the service panel to the “off”.

While inspecting the completed work, one man was electrocuted by “feedback” energy from a backup generator.

5. What do you know about floods? Read the text. Answer the questions:

- 1) What is a flood?
- 2) What is the worst flood event and why?
- 3) Why can floodwaters be extremely dangerous?
- 4) What is the best protection during a flood?
- 5) What should be done, if floodwaters rise around a car and why?
- 6) What is a flash flood?
- 7) What heights can walls of water reach?
- 8) What do you know about warning the hazards of flood cleanup work?

Floods

Floods are the most common and widespread of all natural disasters - except fire. One can experience some kind of flooding after spring rains, heavy thunderstorms, or winter snow thaws. Floods can be slow or fast rising but generally develop over a period of days.

Dam failures are potentially the worst flood events. A dam failure is usually the result of neglect, poor design, or structural damage caused by a major event such as an earthquake. When a dam fails, a gigantic quantity of water is suddenly let loose downstream, destroying anything in its path. Floodwaters can be extremely dangerous. The force of six inches of swiftly moving water can knock people off their feet. The best protection during a flood is to leave the area and go to shelter on higher ground.

Cars can be easily swept away in just 2 feet of moving water. If floodwaters rise around a car, it should be abandoned. Passengers should climb to higher ground.

Flash floods usually result from intense storms dropping large amounts of rain within a brief period. Flash floods occur with little or no warning and can reach full peak in only a few minutes. Flash flood waters move at very fast speeds and can roll boulders, tear out trees, destroy buildings, and obliterate bridges. Walls of water can reach heights of 10 to 20 feet and generally are accompanied by a deadly cargo of debris. The best response to any signs of flash flooding is to move immediately and quickly to higher ground.

Warning the hazards of flood cleanup work

Working in flooded areas it should be remembered that when the seemingly endless rain tapers off and the flood waters recede, professional engineers will continue to face a number of hazards associated with cleanup activities. Unfortunately, the danger of a flood does not end when the rains cease and it is necessary to prevent illnesses and injuries that can accompany cleanup efforts.

Flood waters can rearrange and damage natural walkways, as well as sidewalks, parking lots, roads, buildings, and open fields. Never assume that water-damaged structures or ground are stable. Buildings that have been submerged or have withstood rushing flood waters may have suffered structural damage and could be dangerous. Don't work in or around any flood-damaged building until it has been examined and certified as safe for work by a registered professional engineer or architect. Assume all stairs, floors, and roofs are unsafe until they are inspected. Leave immediately if shifting or unusual noises signal a possible collapse.

Flood waters can also dislodge tanks, drums, pipes, and equipment, which may contain hazardous materials such as pesticides or propane. Do not attempt to move unidentified dislodged containers without first contacting the local fire department or hazardous material team. If working in potentially contaminated areas, avoid skin contact or inhalation of vapors by wearing appropriate protective clothing and respirators.

To prevent future electrocutions in cleanup activities one should take the following steps: if water has been present anywhere near electrical circuits and electrical equipment, turn off the power at the main breaker or fuse on the service panel. Do not turn the power back on until electrical equipment has been inspected by a qualified electrician. Never enter flooded areas or touch electrical equipment if the ground is wet, unless you are certain that the power is off. Never handle a downed power line.

When using gasoline and diesel generators to supply power to a building, switch the main breaker or fuse on the service panel to the "off" position prior to starting the generator. This will prevent inadvertent energization of power lines from

backfeed electrical energy from the generators, and help to protect utility line workers from possible electrocution.

If clearing or other work must be performed near a downed power line, contact the utility company to discuss de-energizing and grounding or shielding the power lines. Extreme caution is necessary when moving ladders and other equipment near overhead power lines to avoid inadvertent contact. If you are working on or near power lines, it is necessary to take into account that workers and employers must take extreme caution while attempting to restore power or clear areas near downed power lines. In one instance, a worker lost his life following Hurricane Hugo after removing trees from de-energized power line that had been knocked down by storm. While inspecting the completed work, the man stepped on the line and was electrocuted by “feedback” energy from a portable backup generator at a nearby gas station. Feedback energy occurs when a de-energized line becomes energized by a secondary power source.

A year later, another worker died cleaning branches from a power line, following a tropical storm. He was electrocuted after falling from a tree onto a line thought to be de-energized. Although the workers had opened a fused switch on a transformer, the line remained energized through another transformer.

6. Point out sentences with Present Continuous and Past Perfect.

7. Transform the sentences:

F.e.: Never assume that water-damaged structures or ground are stable. Buildings that have been submerged or have withstood rushing flood waters may have suffered structural damage and could be dangerous. - **One should** remember that water-damaged structures or ground are not stable and buildings that have been submerged or have withstood rushing flood waters may have suffered structural damage and could be dangerous.

- Don't work in or around any flood-damaged building until it has been examined and certified as safe for work by a registered professional engineer or architect.
- Assume all stairs, floors, and roofs are unsafe until they are inspected.
- Leave immediately if shifting or unusual noises signal a possible collapse.
- Do not attempt to move unidentified dislodged containers without first contacting the local fire department or hazardous material team.
- If water has been present anywhere near electrical circuits and electrical equipment, turn off the power at the main breaker or fire on the service panel. Do not turn the power back on until electrical equipment has been inspected by a qualified electrician.
- Never enter flooded areas or touch electrical equipment if the ground is wet, unless you are certain that the power is off.
- Never handle a downed power line.

8. 1) Write down some key words and expressions from the text.

the reasons of floods	
the consequences of tsunami and flood waters	
the possibility to avoid damages	
the opportunity to save people	
the danger in the water-damaged areas	
safety measures in cleanup work zones	

2) Make an abstract of the text, using key vocabulary and tell about this hazard.

9. Watch the video “Hurricane, Tornado and Flood Emergency Training”. Write down some instructions for the public. F.e.: Stock food, water and emergency supplies.

UNIT 4. NOISE

1. Learn the pronunciation and meaning of the words:

sound [saʊnd] звук

scale [skeɪl] ступень, уровень; масштаб

faint [feɪnt] слабый, смутный, едва заметный

detect [dɪ'tekt] обнаруживать

label ['leɪbl] прикреплять ярлык

whisper ['wɪspəʃ] шёпот

sew [seʊ] шить

typewriter ['taɪpraɪtəʃ] пишущая машинка

lawnmower [lɔ:nməʊəʃ] газонокосилка

truck [trʌk] грузовик, открытая товарная платформа; тележка

chainsaw ['tʃeɪn,sɔ:] бензопила

sandblast ['sændblɑ:st] подвергать пескоструйной обработке

pain [peɪn] боль

notion [nəʊʃn] понятие

confuse смешивать, спутывать, приводить в беспорядок
 disagreeable [disə'gri:əbl] неприятный
 interfere [intə'fiə] вмешиваться
 interruption [intə'rʌpʃən] прерывание
 fatigue [fə'tl:g] усталость, утомление
 thunderstorm ['θʌndəstɔ:m] гроза, буря
 lightning молния
 emit излучать, испускать
 cause [kɔ:z] быть причиной, вызывать
 crackle потрескивание, треск
 keep calm [kɑ:m] сохранять спокойствие
 get asleep [ə'sli:p] засыпать
 upset расстраивать, огорчать, выводить из душевного равновесия
 expose подвергать
 pitch [pɪtʃ] высота
 duration [djuə'reɪʃən] продолжительность
 tinnitus ['tɪnɪtəs] звон в ушах
 stomach acid ['stʌmək 'æsid] желудочная кислота
 run the risk рисковать
 deaf [dɛf] глухой
 become aware [ə'weɪə] of smth. осознавать
 earplug ['tɜplʌgz] затычки для ушей
 earmuff ['tɜmʌf] наушник для защиты от холода

2. Explain the formation of the words given below, translate them into Russian:

disagreeable, continual, scientifically, interruption, receiver, electromagnetically,
 unpleasant, harmful, nervous, sensitivity, anxiety, irritability, pressure, react,
 excessively

3. Translate the Participle II in the word combinations:

unprotected ears, defined notion, confused sound, scientifically – based noise, life –
 conditioned noise, emitted light, caused crackle, noticed fatigue, being transmitted
 message.

4. Translate the following word combinations:

noise-related hearing loss, hearing protectors, gun muzzle blast, jet engine, auto horn, the Occupational Safety and Health Administration's limit, pulse rate, blood pressure

5. 1) Do you know how is the intensity of sound measured?

There are different sounds around us. Decibels (dB) measure the intensity of sound. The scale runs from the faintest sound the human ear can detect, which is labeled 0 dB, to more than 180 dB, the noise at a rocket pad during launch. Most experts agree that continual exposure to more than 85 decibels is dangerous. Recent studies show an alarming increase in noise-related hearing loss in young people.

Approximate examples of decibel levels:

- Faintest sound heard by human ear – 0 dB
- Whisper, quiet library – 30 dB
- Normal conversation, sewing machine, typewriter – 60 dB
- Lawnmower, shop tools, truck traffic – 90 dB
- Chainsaw, pneumatic drill, snowmobile – 100 dB
- Sandblasting, loud rock concert, auto horn – 115 dB
- Gun muzzle blast, jet engine (such noise can cause pain and even brief exposure injures unprotected ears) – 149 dB
- The Occupational Safety and Health Administration's limit for noise without hearing protectors – 140 dB

2) Soundcheck. What sounds make your life pleasant/unpleasant? Mark with a plus, if a sound is loud and unpleasant (-) for you, with a minus, if a sound is pleasant (+) for you.



3) Listen to some sounds. What sounds are loud?

- 1) http://www.bmu.de/laermschutz/ueberblick/akustische_beispiele/doc/41436.php
- 2) <http://www.hoerpfad.ch/wasklingtwie/index.html>
- 3) http://www.laermorama.ch/m5_krachmacher/eisenbahnlaerm_v.html

6. Read the text “Noise”. Answer the following questions:

- 1) What is noise? When can it occur?
- 2) What are the noise natural sources?
- 3) What noise makes life not so pleasant for thousands of people? Why? How do people react to loud noise? What do we have to do?
- 4) Why is it necessary to become aware of noise?
- 5) How can you protect yourself against noise?

Noise

The notion “noise” can be defined as any loud and unpleasant sound, especially confused or disagreeable. Noise may be scientifically – based or life – conditioned. The former refers to as any factor in the communication process that interferes with exchanging messages and achieving common meaning. Noise can range from interruptions while the sender is encoding a message being transmitted to fatigue on the part of receiver while decoding takes place. Thus, noise can occur during any stage of the communication process.

The other noise natural sources are thunderstorms and lightnings. Thunderstorms are considered to be electromagnetically noisy environments. Lightning, in particular, emits large amounts of radio-frequency noise, causing the familiar crackle on AM radios many kilometers away.

In ordinary life noise is all around us and usually we do not notice it. But sometimes it gets too loud for comfort. The noise of traffic in cities, of motorways through the country, of aeroplanes makes life not so pleasant for thousands of people. Loud music is not just unpleasant, it can make people ill. Some people become very nervous and upset because of all these noises. They may have to take drugs to keep calm and get asleep at night.

Noise may be of production origin and people who are exposed to loud noises during productive process all the time run the risk of going deaf. It is necessary to become aware of the threats to our environment. Although noise is not a chemical and cannot be seen, it is a kind of pollution, because it is harmful to the health.

People differ in their sensitivity to noise. As a general rule, noise may damage your hearing if you are at arm’s length and have to shout to make yourself heard. If noise is hurting your ears, your ears may ring, or you may have difficulty hearing

for several hours after exposure to the noise. Noise is characterized by intensity, measured in decibels; pitch, measured in hertz or kilohertz; and duration.

A ringing in the ears, called tinnitus, commonly occurs after noise exposure, and often becomes permanent. Some people react to loud noise with anxiety and irritability, an increase in pulse rate and blood pressure, or an increase in stomach acid. Very loud noise can reduce efficiency in performing difficult tasks by diverting attention from the job.

Wear hearing protectors, especially if you must work in an excessively noisy environment. You should also wear them when using power tools, noisy yard equipment, or firearms, or riding a motorcycle or snowmobile. Hearing protectors come in two forms: earplugs and earmuffs that can be found at most pharmacies.

7. Define the form and function of the –ing words in the text: exchanging, achieving, meaning, hearing, ringing, encoding, being transmitted, decoding, lightning, causing, performing.

8. Insert the proper words into the sentences:

(Понятие шум) can be defined as any loud and unpleasant sound.

Noise can (случиться) during any stage of the communication process.

The other noise natural sources are (гроза) and (молния).

Lightning can (вызывать) (щелчки) on radio-sets.

Many people become (расстроенный) because of the noise.

Some people (подвергаться) to loud production noises and their (здоровье) is becoming worse.

Noise is considered to be (вредный) to the people's health.

9. Translate into English:

- 1) Шум считается одним из видов загрязнения окружающей среды.
- 2) Шум от транспорта, самолетов, громкой музыки выводит людей из равновесия.
- 3) Слишком громкий шум является неприятным для людей.
- 4) Источником шума могут быть аппараты, передающие сообщения.
- 5) Природными источниками шума являются гром и молния.
- 6) Молния, излучающая радиочастотные помехи (шум) вызывает треск в приборах.
- 7) Громкий шум является неприятным и вредным для здоровья, так как он создает дискомфорт и расстраивает людей.
- 8) Некоторые люди подвергаются воздействию громкого шума на производстве.
- 9) Шум — это угроза окружающей среде.

10. 1) Write down some key words and expressions from the text.

what is noise	
the types of noise	
the sources of noise	
the influence of noise the people's mood	

2) Make an abstract of the text, using key vocabulary and tell about noise.

Supplementary reading

Earthquake kills hundreds in Peru

A powerful 7.9 – magnitude earthquake shook Peru's coast near the capital, killing at least 387 people and injuring more 1050 others. 17 people were killed when a church collapsed in the city of Ica, south of Lima. Mayor of the town Pisco told that they did not have lights, water, communications. Most houses have fallen, churches, stores, hotels, everything is destroyed.

The government rushed police, soldiers, doctors and aid to Ica, but the traffic was paralyzed on the Pan American Highway by giant cracks in the pavement and fallen power lines. Hundreds of vehicles were backed up.

It was reported that dozens of people were seeking help in the hospitals even though they had suffered cracks and other structural damage. The walls of homes had fallen in and numerous people had been hurt by falling bricks and broken glass. Some homes had collapsed in the centre of Lima and many people had fled into the streets for safety.

The U.S. Geological Survey said that the earthquake hit at 6.40 p.m. about 145 kilometers southeast of Lima at a depth of about 40 kilometers. Four strong aftershocks ranging from magnitudes of 5.4 to 5.9 were felt afterward.

The prediction of hurricanes and earthquakes

On September 9, 1999 a rather puzzling fax came in to the Turkish Embassy in Moscow, signed by Tula State University Professor Oleg Martynov: "Since August 3 of this year, precursors of a powerful earthquake have been observed in an area with the following geographic coordinates: 40N28 to 30E. Should your government get Turkish meteorologists and seismologist to contact us, we will be able to provide an accurate forecast about the time and the coordinates".

Embassy officials decided that it was some kind of prank, but called the Russian Academy of Sciences. "Pay no attention – these are charlatans", the ambassador was assured. A week later Turkey was shaken by a natural catastrophe. Turkish journalists rushed to Tula to interview the clairvoyant professor. Martynov asked them to draw their government's attention to the fact that more earthquakes should

be expected in a month's time. On November 12, 1999, Turkey unfortunately saw that the scientist's second forecast was also accurate.

The pattern was repeated with Greece. A storm warning to the incredulous government arrived on September 2, while five days later the country was shaken. Prof. Martynov has more than a dozen officially confirmed forecasts: Azerbaijan, Bulgaria, France, Great Britain, Italy, etc.

Prof. Martynov receives signals about imminent meteorological and seismic upheavals from the invented instrument, a steel drum packed with sensitive antennas. The instrument is called a broad-band gradientometer, which records disturbances in the gravitational equilibrium between the earth's core and its atmosphere every second. Sensors show fluctuations on the video display terminal, and with some decoding procedure, the professor says, it is quite easy to determine the time and place of an upcoming hurricane, typhoon, or some other devastating natural phenomenon.

In the course of his studies, Martynov came to conclusion, that the earth's gravitational balance is periodically disturbed, but our planet recovers the equilibrium. However, cataclysms continue to occur.

Scientists warn: more bad storms on the way

Not long ago our planet has been hit by two powerful tropical storms – Katrina and Nabi. The first devastated New Orleans on August 29, 2005, while the second struck Japan and Russia's Far East. Next in line was Malaysia. A meteorologist with the UN Economic and Social Commission for Asia and the Pacific announced that the country was going to be swept by a powerful typhoon with devastation similar to that of the United States and Japan. The UN expert links this turn to global changes in the earth's climate. Unlike these two countries, Malaysia is unprepared for the onslaught of tropical storms.

There was a lively discussion about the impact of global warming on natural catastrophes. One of the issues of "Nature" published an article titled "After the Flood" with the reading: "Academic experts say they were all too aware of the devastation that would claim New Orleans and its surroundings in the wake of a fierce hurricane". Extreme weather phenomena are becoming commonplace. Scientists believe that the synoptic catastrophes are due to global warming.

The world experienced a series of record – breaking weather events in early 2007, from flooding in Asia to heatwaves in Europe and snowfall in South Africa. The World Meteorological Organization (WMO) said global land surface temperatures in January and April were likely the warmest since records began in 1880, at more than 1 degree Celsius higher than average for those months.

Most scientists believe extreme weather events will be more frequent as heat – trapping carbon dioxide emissions cause global temperatures to rise. The WMO is

working to set up an early warning system for extreme weather events. The agency is also seeking to improve monitoring of the impacts of climate change, particularly in poorer countries which are expected to bear the brunt of floods, droughts and storms.

How scientists forecast hurricanes and typhoons

Weathermen have yet to learn to predict accurately the moment when tropical hurricane or typhoon is born. The places on earth where this typically happens are well known, however typhoon motion paths are not. In other words, scientists know where but do not know when. Nevertheless, from the moment a hurricane is born, its movement is closely tracked. This is done with the help of weather satellites and cyclone monitoring aircraft that patrol areas hundreds of kilometers from the coast line, often penetrating into the centre of a cyclone to get more accurate data.

The basic criteria used to assess the danger of a particular hurricane are wind speed, the height of waves, the impact on ground - based installations and the coast line, and pressure at the eye of the hurricane. By the level of pressure, Katrina ranks third on the list of the most devastating hurricanes in history, recorded since 1851. Katrina was a Category Five storm, the highest ranking on the five-point scale.

Электронные ресурсы:

1. YouTube [Электронный ресурс]: [сайт]. - Режим доступа: www.youtube.com.
2. The Moscow News [Электронный ресурс]: [газета]. - Режим доступа: <http://www.themoscownews.com>.
3. Студопедия [Электронный ресурс]: [сайт]. - Режим доступа: www.studopedia.info.

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АНГЛИЙСКИЙ ЯЗЫК

Методические указания по развитию навыков и умений чтения,
аудирования и устной речи по теме
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