Министерство Российской Федерации
по делам гражданской обороны, чрезвычайным ситуациям
и ликвидации последствий стихийных бедствий

Ивановский институт государственной противопожарной службы
МЧС России

ОРГАНИЗАЦИЯ ПОЖАРОТУШЕНИЯ В США

УЧЕБНОЕ ПОСОБИЕ
ДЛЯ ИНЖЕНЕРОВ ПОЖАРНОЙ БЕЗОПАСНОСТИ
(НА АНГЛИЙСКОМ ЯЗЫКЕ)

Иваново 2007

УДК 614.842.83.05
ББК 38.96
О-75

Организация пожаротушения в США: Учебное пособие для инженеров пожарной безопасности (на английском языке)// Автор: старший преподаватель кафедры «Профессиональная этика и культурология» майор внутренней службы Немчанинова О.Л.

В данном пособии, являющемся результатом совместного со специалистами пожарной части Северного Канзас-Сити (Миссури, США) проекта, представлены аутентичные материалы, раскрывающие особенности организации тушения пожаров в США. Пособие включает в себя десять тематических разделов; раздел реферативного анализа случаев пожаров, приведенных в отчетах Администрации пожарной безопасности США; прозаические и поэтические посвящения подвигам пожарных; тексты для дополнительного чтения; терминологический словарь-минимум по пожарной безопасности.

Учебное пособие предназначено для курсантов и слушателей специальности 280 104.65 «Пожарная безопасность».

Учебное пособие рассмотрено и рекомендовано к публикации
кафедрой «Профессиональная этика и культурология»,
протокол № 9 от 12 марта 2007 г.

Печатается по решению организационно-научной и редакционно-издательской группы Ивановского института ГПС МЧС России.

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ВВЕДЕНИЕ

Международная интеграция на современном этапе предполагает взаимообмен профессиональной информацией, а также участие в совместных международных проектах по ликвидации последствий чрезвычайных ситуаций, международных специализированных выставках и конференциях. Для решения этих важных задач будущим инженерам пожарной безопасности необходимо владеть иностранным языком в рамках профессионально ориентированной терминологии, чтобы пользоваться им как средством расширения профессиональных знаний и совершенствования профессионального опыта. Современный специалист должен быть вооружен не просто знаниями в области пожарной тактики, а обязан знать особенности ведения боевых тактических действий пожарными подразделениями других стран.

Именно с этой целью данное учебное пособие построено на современном аутентичном материале, ***содержание*** которого охватывает особенности организации тушения пожаров в США. В пособии изложены ключевые вопросы теории горения; дана классификация пожаров в зависимости от вида горящих материалов с целью детального изучения пожаров и разработки тактики борьбы с ними; приведен сравнительный анализ классификации пожаров в соответствии с Международной организацией по стандартизации, Национальной ассоциацией противопожарной защиты США и Британским стандартом; рассмотрены боевые действия при тушении пожаров; подчеркнута разница между стратегическими и тактическими действиями; указаны особенности укомплектования пожарных частей США личным составом, а также состава сил и средств пожарного караула.

Структуру пособия составляет а) текстовой материал и тренировочные задания, объединенные в десять тематических разделов по вышеперечисленной тематике; б) тексты для дополнительного чтения, имеющие своей целью расширить информацию основных разделов; в) раздел реферативного анализа конкретных случаев пожаров, взятых из отчетов Администрации пожарной безопасности США; г) прозаические и поэтические посвящения подвигам пожарных; д) терминологический словарь-минимум по пожарной безопасности, отобранный на основе текстового материала пособия.

Каждый из десяти тематических разделов состоит из двух или трех текстов, объединенных общей тематикой, а также системы заданий на развитие умений сравнивать, анализировать, классифицировать и обобщать информацию не только одного текста, но и текстового материала всего раздела. Следует отметить, что система упражнений включает однотипные задания для каждого раздела.

В пособии использованы адаптированные и отредактированные профессиональным пожарным-парамедиком пожарной части Северного Канзас-Сити (Миссури, США) Ричардом Дж. Батом аутентичные тексты, дополненные графическим материалом и представленные в порядке логического развертывания исходных принципов и понятий.

Пособие включает ряд проблемных заданий, соответствующих психолого-педагогическому принципу обучения будущих инженеров пожарной безопасности, а именно, достигать освоения знаний, понятий и принципов через применение соответствующих им знаковых систем. Это проблемные задания на сведение информации текста в графическое изображение, сопоставление текстового материала и графического изображения и др. Развитию таких психических процессов, как профессиональная память, профессиональное мышление, внимание, наблюдательность и т.д., способствуют предложенные в пособии мыслительные задачи на выборку, сопоставление, восстановление логической последовательности, сравнение, обобщение и пр.

Раздел «Посвящения пожарным» имеет глубокое воспитательное значение, поскольку предлагает обучаемым обсудить материал, раскрывающий не только специфику опасной, но столь необходимой работы пожарного, но и те качества, которыми он должен обладать.

Для снятия лексических трудностей в конце пособия представлен терминологический словарь-минимум, содержащий около 700 профессионально ориентированных слов и словосочетаний, отобранных из текстового материала пособия. Выбор соответствующих русских эквивалентов основан на анализе терминов и терминологических сочетаний специализированных словарей (“Иллюстрированный словарь по пожарной безопасности” - М.: ВНИИПО МВД России, 1999; “Англо-русский пожарно-технический словарь” - М.: Воениздат, 1980); “Англо-русский словарь по чрезвычайным ситуациям” - М.: СПЕЦТЕХНИКА, 2003), а также согласован с преподавателями профилирующих кафедр ИвИ ГПС МЧС России.

Учебное пособие снабжено аудиоматериалом, начитанным профессиональным американским пожарным, что способствует более глубокому проникновению в культуру США.

Учебное пособие составлено в соответствии с требованиями Программы и на основании тематического плана по дисциплине «Пожарная тактика» для курсантов и слушателей специальности 280 104. 65 «Пожарная безопасность» Ивановского института ГПС МЧС России, а также принципом взаимосвязи учебных дисциплин («Пожарная тактика», «Пожарная техника», «Пожарная автоматика», «Пожарная профилактика», «Иностранный язык (английский)».

ACKNOWLEDGEMENT

I would like to particularly thank Richard George Bath, Firefighter/Paramedic of North Kansas City Fire Department, Missouri, USA, for his support, encouragement, editing, and assistance with details too numerous to mention.

FIREFIGHTER PLEDGE

I ***promise*** concern for others.
A willingness to help all those in need.
Promise courage – courage to face
And conquer my fears.
Courage to share and endure
The ordeal of those who need me.

I ***promise*** strength – strength of heart
To bear whatever burdens
Might be placed upon me.
Strength of body to deliver
To safety all those
Placed within my care.

I ***promise*** the wisdom to lead,
The compassion to comfort,
And the love to serve unselfishly
Whenever I am called.

Author unknown

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UNIT 1

Topic: **COMBUSTION PROCESS**
FIRE TRIANGLE OR FIRE TETRAHEDRON?
METHODS OF FIRE EXTINCTION

Introductory Practice

I. Arrange the following words alphabetically and translate them using a dictionary:

triangle, inhibit, enough, raise, heat, fire, sustain, extinction, supply, liquid, flow

II. Restore the dictionary form of the following words:

combines, taken, cooling, removed, properties, excluding, pumped, inhibiting, occurs

III. Translate the following groups of root words paying attention to the formation means of various parts of speech:

active - activate - activity
basis - basic - basically
combustion - combustible - combustibility
extinguish - extinguisher - extinguishment
flame - flammable
frequent - frequently - frequency
ignite - ignition - ignitable - ignitability
oxide - oxidize - oxidation
produce - product - production - productive
rapid - rapidly - rapidity
remove - removal – removable

IV. Translate the following words with international roots:

element, reaction, agent, reduce, evolution, limit, reaction, temperature, basis, product, chemical, form, component, method, absorb, generate

V. Name both principle and attributive components in the following noun combinations:

ignition temperature, fire extinction, fuel supply, fuel removal

VI. Define forms and functions of the infinitives in the following sentences.
1. To produce fire four things must be present at the same time.
2. The components of the fire triangle help us to understand methods of fire extinction.
3. Heat can be taken away by cooling.
4. To start a fire there must be enough oxygen to sustain combustion.

VII. Divide the following sentences into three categories containing: 1) Gerund; 2) Participle I; 3) Participle II.

1. Oxygen can be taken away by excluding air.
2. Water has great absorbing properties.
3. Cooling with water will extinguish a fire by absorbing heat.
4. The fuel source may be removed by stopping a gas or liquid flow.
5. The contents of a flammable liquid tank can be pumped to an isolated empty reservoir.
6. These extinguishing agents inactivate intermediate products of a chemical reaction resulting in reducing the combustion rate.

VIII. Read *Text A* and decide on a more precise definition of fire production – ***fire triangle*** or ***fire tetrahedron.***

Note:

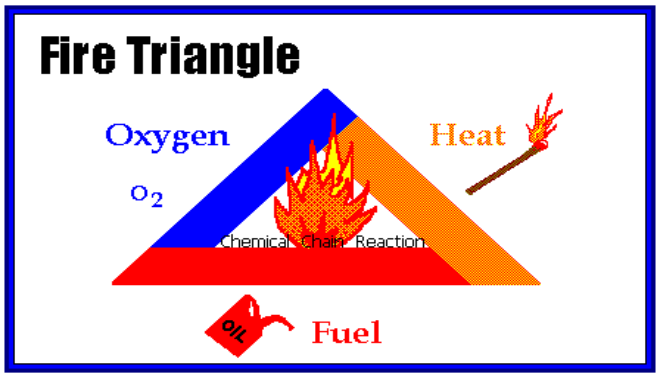
tetrahedron - тетраэдр (четырехгранник, у которого все грани - треугольники, т.е. треугольная пирамида), от греч. *tetra* (четыре) и *herda* (основание, поверхность, сторона)

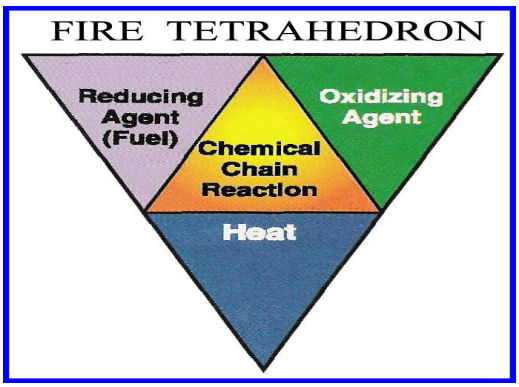
exothermic - экзотермический (с выделением тепла)

Text A

FIRE TRIANGLE OR FIRE TETRAHEDRON?

Fire burns because three elements are present—heat, fuel and oxygen. In technical language, ***fire*** is a chemical chain reaction known as combustion, which occurs when a fuel combines with oxygen (air) and heat so rapidly that it produces flame. Oxygen, heat, and fuel form a ***"fire triangle"***.





But to be more exact, to produce fire four things must be present at the same time:

1) enough ***oxygen*** to sustain combustion;
2) enough ***heat*** to raise the material to its ignition temperature;
3) some sort of ***fuel*** or combustible material;
4) a ***chemical, exothermic chain reaction*** that is fire.

The fourth element – a chemical chain reaction – changes a "fire triangle" into "fire tetrahedron". If anyone of these four elements is taken away, the fire goes out. This is the basis for fire extinguishment. Oxygen can be removed by excluding air,

heat - by cooling, fuel can be removed to a place where there is no flame, a chemical chain reaction can be stopped by inhibiting the oxidation of the fuel.

Active Vocabulary

fire triangle - пожарный треугольник
fire tetrahedron - пожарный тетраэдр
heat - тепло
fuel - топливо, горючее
oxygen - кислород
oxidation – окисление
combustion – горение
combustible material – горючий материал
flame – пламя
burn (burnt, burnt) – гореть
occur – иметь место, происходить, случаться
sustain – поддерживать
ignition – зажигание, загорание, воспламенение
exothermic chain reaction – экзотермическая цепная реакция
extinguishment – тушение
exclude – исключать
cool – охлаждать
remove - удалять
removal - удаление
inhibit – тормозить, сдерживать

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A		***B***	
1.	поддержать горение	1.	remove fuel
2.	поднять температуру горения	2.	inhibit oxidation
3.	исключить доступ воздуха	3.	sustain combustion
4.	удалить топливо	4.	exclude air
5.	затормозить реакцию окисления	5.	raise ignition temperature

II. Find an “alien” word in each set.

1. fire, ignition, extinguishment, flame, combustion
2. exclude, raise, remove, take away
3. sustain , stop, go out
4. air, fuel, oxygen

III. Read ***fire*** definitions. Which one is more suitable?

1. Fire is an exothermic chain reaction between oxygen and fuel.
2. Fire is a chemical chain reaction in which fuel, heat, and oxygen are combined.

3. Fire is a chemical chain reaction with no flame.

IV. Name the functions of the fire triangle components choosing a suitable ending for each statement.

Fire requires	***oxygen***	to raise the ignition temperature of the fuel.
	heat	to start the exothermic reaction.
	fuel	to sustain combustion.

V. Choose the right set of fire tetrahedron components.

1.

chemical reaction
oxygen
heat
air

2.

heat
fuel
oxygen
chemical reaction

3.

chemical reaction
heat
flame
fuel

VI. Formulate four conditions of ceasing an exothermic chain reaction putting the verb in the adverbial clause of condition into the correct form.

An exothermic reaction will stop if	oxygen (to be excluded).
	heat (to be removed).
	fuel (to betaken away).
	fuel oxidation (to be inhibited).

VII. Give four ways of collapsing a fire tetrahedron properly completing each statement.

1. Oxygen can be excluded	by	being removed to an out-of-flame place.
2. Fuel can be taken away		cooling.
3. Heat can be removed		inhibiting the fuel oxidation.
4. A chemical reaction can be stopped		excluding air.

VIII. Read *Text B* and explain the connection between fire tetrahedron and methods of extinction.

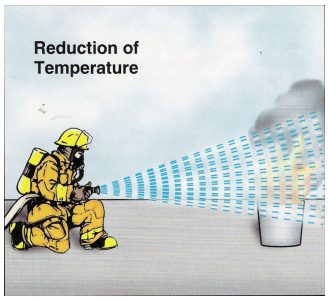
Note: halogenated hydrocarbons – галогенпроизводные углеводородов

dry chemical – сухое огнетушащее вещество (порошок)

Text B

METHODS OF FIRE EXTINCTION

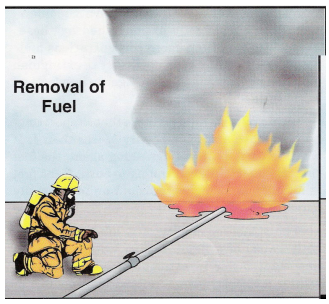
The four components of the fire tetrahedron help us to understand methods of fire extinction. Fire can be extinguished if anyone of these components is removed. The following four basic methods are employed.



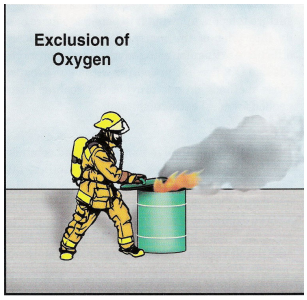
Removal of Heat (Cooling)

Water is most commonly used for cooling a fire. It has great heat absorbing properties. Cooling with water will extinguish a fire by absorbing more heat than the fire is generating. This process depends on reducing the fuel temperature.

Removal of Fuel (Starvation)



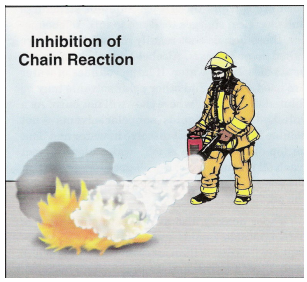
A fire will go out if deprived of its fuel supply by stopping a gas or liquid flow or by removing a fuel to an out-of-flame place. Another method of fuel removal is to allow a fire to burn until all fuel is consumed.



Exclusion of Oxygen (Diluting & Blanketing)

A fire can be extinguished by excluding or limiting its oxygen supply. The oxygen content can be reduced by flooding an area with an inert gas such as carbon dioxide, which dilutes the oxygen. Oxygen can also be separated from fuel by blanketing the fuel with chemical or mechanical foam.

Inhibition of Chain Reaction



A special case of fire extinguishment suggests the usage of dry chemicals or halogenated hydrocarbons as extinguishing agents. These agents inactivate intermediate products of the ***exothermic reaction*** resulting in reducing the combustion rate (the rate of heat evolution) and extinguishing the fire.

Active Vocabulary

extinction – тушение
methods of extinction – способы тушения
property – свойство
absorb – поглощать
absorption – поглощение
starvation – тушение пожара за счет ограничения горючего в зоне горения
supply – подача, поставка; снабжать
consume - потреблять
inhibition – ингибирование, торможение
flammable – горючий, воспламеняющийся
blanket – покрытие, покрывало; покрывать, изолировать
dilute – разбавлять
cover with foam – покрывать пеной
extinguishing agent – огнетушащее вещество
combustion rate – скорость горения

Vocabulary Practice

I. Match Russian names for extinction methods from ***A*** for English equivalents from ***B***.

A
1. охлаждение
2. изоляция (например, пеной)
3. тушение за счет ограничения горючего
4. химическое торможение реакции

B
1. inhibition of a chemical reaction
2. starvation
3. cooling
4. blanketing (e.g. with foam)

II. Generalize the text information in *Table 1* filling in the columns for ***principles of fire extinguishment*** and ***means of fire extinguishment*** with variants given below.

Table 1

Methods of Fire Extinction	**Principals of Fire Extinguishment**	**Means of Fire Extinguishment**
Cooling		
Diluting & Blan-keting		
Starvation		
Inhibition of Chemical Chain Reaction		
	reduction of fuel exclusion of oxygen reduction of combustion rate heat absorption	dry chemicals, halogenated hydrocarbons water stopping a gas or liquid flow diluting or covering with a blanket or foam

III. Define each of the extinction methods using the information under ***A*** and ***B***.

1. ***Cooling*** is A with B.
2. ***Diluting & blanketing*** is A by B.
3. ***Starvation*** is A by B.
4. ***Inhibition of a chemical reaction*** is A with B.

A - *reduction of fuel supply*
- *absorption of heat*
- *reduction of combustion rate*
- *exclusion of oxygen*

B - *flooding the area with an inert as or covering it with a blanket or foam*
- *halogenated hydrocarbons.*
- *water*
- *stopping a gas or liquid flow*

IV. Find in *Text B* answers to the following questions.

1. Why is water most commonly used for cooling a fire?
2. What are principle methods of fuel removal?
3. How do halogenated hydrocarbons reduce the combustion rate?

V. Give summary of *Texts A* and *B* properly completing each sentence.

1. ***Fire*** is a chemical reaction which requires … .
2. The ***four components of the fire tetrahedron*** are … .
3. ***To extinguish a fire*** any of these four elements must be … .
4. ***Methods*** by which they are removed are called … .
5. There are the following ***extinction methods*** … .
6. ***Cooling*** is … .
7. ***Diluting*** & ***blanketing*** is … .
8. ***Starvation*** is … .
9. ***Inhibition of a chemical chain reaction*** is … .

VII. Give a corresponding Russian equivalent for the following saying*: "There's no smoke without fire"*.

VIII. Read *Supplementary Texts* №№ 1 and 2, and discuss new ideas for fire and fundamentals of fire extinguishment.

.UNIT 2

Topic: **CLASSIFICATION OF FIRES AND SELECTION OF EXTINGUISHING AGENT**

CLASSIFICATION OF FIRES
EXTINGUISHING AGENTS

Introductory Practice

I. Arrange the following words alphabetically and translate them using a dictionary:

determine, include, occur, sign, liquid, involve, surface, molten, constitute, source

II. Restore the dictionary form of the following words:

grouped, burning, waxes, fused, safest, emulsifying, fought

III. Guess the meaning of the following words by their roots and word-building elements:

combustible, flammable, reduction, medical, industrial, non-conducting, effectively, extinguisher, unnecessary, corrosive, non-toxic, reignition

IV. Translate the following words with international roots:

classification, agent, type, gasoline, electricity, isolate, contain, dioxide, concentration, substance

V. Name both principle and attributive components in the following noun combinations:

fire class, oxygen reduction, flammable liquids and gases fires, liquid surface, heat absorption, cooking oils fires

VI. Define *–ing* forms in the following sentences (Participle I, Gerund, Verbal Noun).

1. Smothering and blanketing effects of oxygen reduction are most effective in extinguishing Class B fires.
2. Cooking oils fires are a new class of fires dealing with high temperature cooking oils.
3. Selecting the appropriate type of fire extinguisher it's important to take extinguishing agents into account.
4. The following is a list of commonly used fire extinguishing agents.

VII. Divide the following sentences containing Participle II into two categories: 1) Participle II as an attribute, 2) Participle II as a predicative.

1. Fires classification makes it possible to use the type of extinguisher best suited for a particular type of the fire.
2. These foams are well suited for flammable liquids and gases.
3. Water is the most commonly used agent.
4. Extinguishers with sodium bicarbonate are used in Classes B and C, and electrical fires.

VIII. Define the types of syndetical (with a conjunction) and asyndetical (without a conjunction) subordinate clauses in the following complex sentences.

1. Electricity is a source of ignition that will feed the fire until removed.
2. Every extinguisher has a label identifying classes of fires it can be used for, and the type of fire extinguishing agent it contains.

IX. Read *Text A* and say why classification of fires is so important.

Note: auto-ignition – самовоспламенение
ISO (International Standards Organization) – Международная организация по стандартизации
LPG (Liquid Petroleum Gas) – сжиженный углеводородный (нефтяной) газ

Text A

CLASSIFICATION OF FIRES

Fires are grouped into four general classifications, each of which can be extinguished with a particular agent. As all types of extinguishing agents may not be effective on all types of fires, this classification system makes it possible to determine and use the type of extinguisher best suited for fighting a particular type of fire. Below you can see the classification of fires under ISO (International Standards Organization).

Class A fires include ordinary combustible materials such as wood, paper, fabrics, upholstery, rubber, and plastics. To reduce the temperature of the burning material the best method of extinction is cooling.

Class B fires occur in flammable liquids and solids such as gasoline, oils, solvents, paints, waxes. Diluting and blanketing effects are most effective in extinguishing this class of fires.

Class C fires involve flammable gases such as natural gas, LPG (Liquid Petroleum Gases: butane, propane, etc.), medical and industrial gases. This type of fire is also best extinguished by blanketing and diluting.

Class D fires involve combustible metals such as magnesium, titanium, sodium, potassium, zirconium. The main method of extinguishment is to remove oxygen from the surface of the molten mass by blanketing it with a special powder which inhibits or “breaks” a chemical chain reaction.

Electrical fires do not constitute a fire class on their own, as electricity is a source of ignition that will feed the fire until removed. The safest way to put out the fire is to isolate the electrical supply or, if this is not possible, use a special non-conducting extinguishing agent with blanketing or diluting effects.

Cooking oils fires, which have previously entered Class B, are today a new type of fires dealing with high temperature cooking oils (vegetable and animal) and fats, although ISO doesn't define a separate classification for this fire type. Because of their auto-ignition temperature, cooking oils fires are difficult to extinguish. Fires of this class are effectively and safely fought by cooling and blanketing methods of extinction.

Active Vocabulary

fight (fought, fought) a fire – тушить пожар
suit – подходить, соответствовать
ordinary – обычный
combustible – горючий; горючий материал
flammable – воспламеняемый, воспламеняющийся
liquid – жидкий; жидкость
solid – твердый; твердое тело
powder – порошок
dilute - разбавлять
dilution (diluting) – разбавление
involve – включать в себя
include – включать, заключать в себе
molten mass – расплавленная масса
ignition – возгорание, воспламенение
auto-ignition – самовоспламенение
isolate – изолировать
put (put, put) out – тушить (пожар)
electrical equipment – электрическое оборудование
electrical supply – электроснабжение
non-conducting - неэлектропроводный
cooking oil – масло, используемое при приготовлении пищи

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A 1.уменьшить температуру горящего материала
2. источник возгорания
3. обычные горючие материалы
4 самый надежный способ потушить пожар
5. выделять в отдельную классификацию

B 1. ordinary combustible materials
2. define a separate classification

3. reduce the temperature of the burning material
4. the safest way to put out the fire
5. source of ignition

II. Find an "alien" word in each set.

1. smothering, auto-ignition, oxygen dilution, blanketing
2. include, determine, involve, contain
3. gasoline, solvent, sodium, liquid
4. fight, put out, reduce, extinguish

III. Study signs and pictograms of fire classes given in *Table 2*. Fill in the columns for ***description of fires*** and ***methods of extinction*** choosing appropriate information from the box below the table.

Note: pictogram – пиктограмма (отображение общего содержания сообщения в виде рисунка)

NFPA (National Fire Protection Association) – Национальная ассоциация противопожарной защиты в США

Table 2

Sign and Pictogram	Description of Fires	ISO	NFPA	British Standard	Method of Extinction
1	2	3	4	5	6
		Class A	Class A	Class A	
		Class B	Class B	Class B	
		Class C	Class B	Class C	
		no classification	Class C	no classification	
		Class D	Class D	Class D	
		no classification	Class K	Class F	

Description of Fires	Method of Extinction
flammable gases fires	blanketing
fires involving energized electrical equipment	cooling

fires including cooking oils, fats and greases	diluting inhibiting a chemical chain reaction
fires occurring in burning metals	
ordinary combustible materials fires	
fires involving flammable liquids and solids	

IV. Give classification of fires under ISO, NFPA and UK standards using information of *Table 2*. Use the models and information given under ***A*** (combustibles) and ***B*** (classes of fires).

1.Under ISO fires involving ***A*** → are listed in ***B*** .
→ are not defined as a separate classification.

2.Under NFPA fires involving ***A*** are listed in ***B*** .

3.Under UK standard fires involving ***A*** → are listed in ***B*** .
→ are not defined as a separate classificaion.

A ***Combustibles:***	***B*** ***Classes of Fires:***
energized electrical equipment	Class A fires
cooking oils, fats and greases	Class B fires
ordinary combustible materials	Class C fires
flammable gases	Class D fires
burning metals	Class F fires
flammable liquids	Class K fires

V. Give examples of ***(a)*** combustibles of each Class of fires and ***(b)*** methods of their extinction. Use suggested variants given in the boxes.

(a) The examples of | ordinary combustibles
flammable liquids and solids
flammable gases
energized electrical equipment
combustible metals
flammable cooking materials | are … .

Combustibles

magnesium	gasoline	upholstery	vegetable oil	natural gas	wiring
titanium	solvents	paper	animal oil	butane	electrical machinery and appliances
sodium	paints	wood	fats	propane	
potassium	waxes	fabrics	grease	medical gas	
zirconium	alcohols	plastics		industrial gas	

(b) Fires involving	flammable gases energized electrical equipment cooking oils, fats and greases burning metals ordinary combustible materials flammable liquids and solids	are best fought by …

Methods of Extinction

cooling	blanketing	inhibiting a chemical reaction	diluting

VI. Characterize each Class of fires after the following model:

Under ISO, Class ***A (B, C, D)/ electrical/ cooking oils*** *fires* are fires involving … such as … which can be best extinguished by … .

VII. Read *Text B* and find its logical connection with *Text A*.

Note:

carbon dioxide – двуокись углерода

multi-purpose dry chemical – универсальный сухой порошок

mono ammonium phosphate dry powder – сухой порошок на основе фосфатов аммония

sodium bicarbonate dry powder – сухой порошок на основе бикарбоната натрия

ordinary dry chemical – обычный сухой порошок (общего назначения)

wet chemical – влажное химическое огнетушащее вещество

aqueous film-forming foam (AFFF) – пленкообразующий пенообразователь на водной основе

film-forming fluoroprotein foam (FFFF) – пленкообразующая фторпротеиновая пена

halogenated – галогенизированный; галоидоуглеводороды

halon – хладон

Text B

EXTINGUISHING AGENTS

Selecting the appropriate type of fire extinguisher it's important to take extinguishing agents into account. Each class of fire is best fought with a specific extinguishing agent. Every extinguisher has a label identifying classes of fires it can be used for, and the type of fire extinguishing agent it contains.

The following is a list of commonly used fire extinguishing agents.

Water

Cooling is the most common method of fire extinguishment, and water is the most effective cooling agent because it has the greatest capacity for heat absorption. However, it can't be used for all classes of fires because it's conductive. Water-based

fire extinguishers are usually used in fighting Class A fires.

Carbon Dioxide (CO2)

Carbon dioxide is an effective agent for extinguishing fires by the method of *dilution*. Carbon dioxide can be used in extinguishing Classes B and C fires, as well as electrical fires.

Multi-Purpose Dry Chemical (Powder)

This is a dry chemical agent called mono ammonium phosphate. The main extinction method with powders is *blanketing* but it may be effectively combined with other methods: *cooling, blanketing, dilution, inhibiting a chemical reaction.* These powders are mostly used in fighting Class A fires.

Ordinary Dry Chemical (Powder)

This dry chemical agent called sodium bicarbonate extinguishes a fire mostly by *blanketing* and *inhibition.* Extinguishers with sodium bicarbonate are usually used in Classes B and C, and electrical fires.

Special Powders

There is no type of extinguishing agent best suited for all Class D fires. Every hazard should be regarded separately. Still, commonly used are special powders such as sodium chloride, dry graphite and dry copper, etc. with the same extinction methods as other powders.

Foam (AFFF, FFFP)

Foam is a highly effective extinguishing agent for *blanketing* fires. Aqueous film-forming foam (AFFF) (known as "light water") and film-forming fluoroprotein foam (FFFF) are particularly well suited for use on flammable liquids and gases fires due to the ability of the agent to float on the liquid surface and break the interaction between the fuel and the flame, thus preventing reignition.

Wet Chemical (Wet Potassium Salts)

Wet chemical is typically based on the solution of potassium acetate. It has *blanketing* and *cooling* effects on fires involving cooking oils, fats and grease.

Halogenated Agents (Halon)

Halogenated agents extinguish fires by *inhibiting a chemical reaction*. They are similar to CO_2, but still more effective because they require a lower concentration of an agent for extinguishment. Halon fire extinguishers are listed for Classes A, B, C, and electrical fires.

Active Vocabulary

appropriate – соответствующий
take into account – принять во внимание
common – общий; распространенный
conductive - электропроводный
carbon dioxide – двуокись углерода
powder - порошок
dry chemical – сухое огнетушащее вещество (порошок)
multi-purpose dry chemical – универсальный сухой порошок
ordinary dry chemical – обычный сухой порошок

hazard – опасность
reignition – повторное возгорание
wet chemical – влажное химическое огнетушащее вещество
halogenated – галогенизированный; галоидоуглеводороды
halon – хладон
be listed for – быть занесенным в список

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A 1. плавать на поверхности жидкости
2. разрушить взаимодействие между топливом и пламенем
3. способность поглощать тепло
4. более низкая концентрация огнетушащего вещества для тушения

B 1. capacity for heat absorption
2. lower concentration of an agent for extinguishment
3. float on the liquid surface
4. break the interaction between the fuel and the flame

II. Fill in *Table 3* with ***extinction methods*** for each extinguishing agent, and ***Classes of fires*** these agents are used for. Use versions given below.

Table 3

Extinguishing Agent	Methods of Extinction	ISO Classes of Fires
Water		
Carbon dioxide		
Multi-purpose dry chemical		
Ordinary dry chemical		
Wet chemical		
Special powders		
Foam		
Halogenated		
	cooling dilution inhibiting a chemical reaction blanketing	A B C D electrical cooking oils

III. Mark the statements below ***True*** or ***False*** and correct false ones.

1. Water has a blanketing effect on fire.
2. The main extinguishing method with chemicals is cooling.
3. Carbon dioxide extinguishes fires by the method of dilution.
4. Wet chemicals have the same extinction method as halogenated agents.
5. Halon inhibits a chemical reaction.

IV. Make up proper statements correlating extinguishing agents to the Classes of fires they are used for. Use the model (under ***A***, ***B***, ***C***, ***D***) given.

A	***B***	***C***	***D***
Water		best suited for	Class A fires.
Carbon dioxide		appropriate in extinguishing	Class B fires.
Dry chemicals	is/are	effective in	Class C fires.
Wet chemicals		mostly used in fighting	Class D fires.
Special powders		listed for	electrical fires.
Foams		mainly used in	cooking oils fires.
Halon		a good extinguishing agent for.	

V. Complete *Table 4* with ***extinguishing agents*** suited for each Class of fires. Use the information of *Text B* and *Table 3*.

Table 4

Classes of fires	Extinguishing agents
Class A (ordinary combustibles)	
Class B (flammable liquids)	
Class C (flammable gases)	
Class D (combustible metals)	
Electrical	
Cooking oils	

VI. Use the information of *Table 4* to complete the following sentences.

1. ***Class A fires*** are best extinguished with … .
2. ***Flammable liquids and gases*** are safely put out with … .
3. ***Combustible metals*** are effectively fought with … .
4. ***Electrical fires*** are usually extinguished with … .
5. ***Cooking oils fires*** are effectively and safely put out with … .

VII. Generalize the information of *Texts A* and *B* in the following statements filling in the gaps.

1. Water having a … effect on fire is best suited for class … fires including … combustibles such as … .
2. Classes B and C fires involving flammable … and … are effectively fought by a method of … with … .
3. Wet chemicals with their … and … effects on fire are appropriate for fires involving … .
4. Special powders such as … and … are effectively used in fighting combustible … .
5. Non-conducting extinguishing agents such as …, are appropriate for … fires.

VIII. Give a corresponding Russian equivalent for the following proverb*: "He will never set the Thames on fire".*

IX. Read *Supplementary Texts* №№ 3 and 4, and discuss new ideas for fires and fire hazards classifications.

UNIT 3

Topic: **FIRST-AID APPLIANCES: FIRE EXTINGUISHERS**
TYPES OF PORTABLE FIRE EXTINGUISHERS
FIRE EXTINGUISHERS MARKING
HOW TO USE A FIRE EXTINGUISHER

Introductory Practice

1. Arrange the following words alphabetically and translate them using a dictionary:

mist, employ, solution, residue, label, available, charge, squeeze, handle, designate.

II. Restore the dictionary form of the following words:

rated, reignites, newer, energized, indicating, drawn, sizes, accidentally, pressurized.

III. Translate the following groups of root words paying attention to the formation means of various parts of speech:

effect - effective - effectively
sense - sensitive
extinguish - extinguisher
designate - designator - designation
suit - suitable – suitability
value - valuable

IV. Guess the meaning of the following words by their roots and word-building elements:

user, discharge, designator, suitability, extinguisher

V. Translate the following words with international roots:

operate, protect, type, marking, design, diagonal, line, manner, base, start, safe

VI. Name both principle and attributive components in the following noun combinations:

water spray, water mist, multiple purpose use, picture designator, letter (буква) designation, fire extinguisher user.

VII. Define the meaning of the word *"both"* in each of the following sentences.

1. Some extinguishers use both the old symbols and modern pictograms.
2. Both of these types of labels are shown below.

VIII. Note types of asyndetical (without a conjunction) subordinate clauses in the following complex sentences.

1. These types of labels are shown with the description of fire classes they are used on.
2. Keep an eye on the area in case the fire reignites.

IX. Read *Text A* and note types of extinguishers suitable for each class of fires.

Note: ammonium phosphate – фосфорно-аммонийные соли
sodium bicarbonate – бикарбонат натрия
sodium chloride – хлорид натрия
dry graphite – сухой графит
dry copper – сухая медь
potassium acetate – ацетат калия
water spray – распыленная вода
water mist – водяной туман

Text A

TYPES OF PORTABLE FIRE EXTINGUISHERS

Water-based Extinguishers include water, water spray, water mist, aqueous film-forming foam (AFFF) and film-forming fluoroprotein foam (FFFF). *Water* extinguishers are suitable for Class A fires. *Foam* extinguishers are mostly effective on fires involving flammable liquids and gases.

Dry Chemical Extinguishers are usually rated for multiple purpose use. *Multipurpose dry powder* (ammonium phosphate) is mostly used on Class A fires. *Ordinary dry chemical* extinguishers employing sodium bicarbonate are not listed for class A fires, but are effective on flammable liquids and gases and electrical fires. *Special dry chemical* extinguishers employing sodium chloride, dry graphite or dry copper are effective on fires involving burning metals.

Wet Chemical Extinguishers are based on a solution of potassium chloride having the effect of turning cooking oil into a soap-like substance, and smothering the fire. These extinguishers are used for fighting fires in kitchens, and effective on fires involving cooking oils, fats and grease.

Carbon Dioxide (CO2) Extinguishers are listed for flammable liquids and gases fires. Moreover, these extinguishers are well suited for fires involving sensitive electrical equipment because CO_2 does not leave any residues after use.

Halon (Halogenated) Extinguishers contain a gas that inhibits a chemical reaction that takes place when fuels burn. These types of extinguishers are often used to put out Classes A and B fires, as well as to protect valuable electrical equipment since halon leaves no residues to clean up.

Active Vocabulary

fire extinguisher:
portable ~ – переносный огнетушитель
water-based ~ – огнетушитель на водной основе
foam ~ – пенный огнетушитель
multi-purpose dry chemical ~ - многоцелевой огнетушитель
ordinary dry chemical ~ - огнетушитель общего назначения
special dry chemical ~ - специальный порошковый огнетушитель
carbon dioxide ~ - углекислотный огнетушитель
halon (halogenated) ~ - хладоновый огнетушитель
water spray – распыленная вода
water mist – водяной туман
be rated – относиться к какому-либо классу
employ – использовать, применять
residues – остатки (после пожара)
contain – содержать
protect – защищать

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A 1.мылоподобное вещество
2. чувствительное электрооборудование
3. быть внесенным в список (предназначаться для)
4 защитить дорогостоящее электрооборудование

B 1. sensitive electrical equipment
2. protect valuable electrical equipment
3.soap-like substance
4. be listed (for)

II. Find an “alien” word in each set.

1. be rated, be suited, be based, be listed
2. ordinary dry chemical, multi-purpose dry powder, halon
4. contain, use, employ
5. AFFF, carbon dioxide, water spray, water mist

III. Correlate extinguishing agents ***(A)*** with types of extinguishers ***(C)*** using one of the synonymous verbal form ***(B).***

A	Sodium bicarbonate Halon Chemicals based on a solution of potassium acetate Water spray, water mist, AFFF, FFFF Carbon dioxide Dry copper, dry graphite Ammonium phosphate

B	is/are contained in is/are employed in

C	foam extinguishers. multi-purpose dry chemical extinguishers. water extinguishers. ordinary dry chemical extinguishers. wet chemical extinguishers. halon extinguishers. special powder extinguishers.

IV. Complete the following statements (classification of fires is given under NFPA standard) choosing appropriate variant/s.

1. Carbon dioxide extinguishers are rated for Classes… .
   1) A and B fires
   2) B and C fires
   3) B and D fires
2. … extinguishers are safe in fighting electrical fires.
   1) foam
   2) water
   3) *carbon dioxide*
3. Wet chemical extinguishers are based on solution of … .
   1) sodium bicarbonate
   2) potassium acetate
   3) sodium chloride
4. Foam extinguishers are not listed for Class … .
   1) A fires
   2) B fires
   3) C fires

V. Match types of extinguishers given in *Table 5* for each ***Class of Fires***.

NFPA Fire Extinguishers Guide *Table 5*

Type of Extinguisher	**A**	**B**	**C**	**D**	**K**
Water					
Foam (AFFF, FFFF)					
Multi-Purpose Dry Chemical					
Ordinary Dry Chemical					
Special Powder					
Wet Chemical					
Carbon Dioxide					
Halon					

VI. Characterize fire extinguishers and their usage completing the following sentences with necessary information of *Text A*.

1. Water-based extinguishers include … .
2. Water extinguishers are effective for Class … fires.
3. Foam extinguishers containing … are suitable for Class … fires.
4. Multi-purpose dry chemical employing … is mostly used in extinguishing … combustibles.
5. Ordinary dry chemical extinguishers using … are listed for … .
6. Special dry chemical extinguishers containing … are rated for fires involving … .
7. Class K fires are safely extinguished with … extinguishers based on … .
8. Carbon dioxide extinguishers are well suited for … fires.
9. Halon extinguishers are used to put out Classes …. fires.

VII. Read *Text B* and note both newer and older fire extinguishers marking under NFPA.

Text B

FIRE EXTINGUISHERS MARKING

Fire extinguishers in the US are not color coded, though most Class D extinguishers are colored yellow. Older fire extinguishers are labeled with colored geometrical symbols (green triangle, red square, blue circle, yellow star, black hexagon) and letter designations. Newer extinguishers are marked with pictograms. Some extinguishers use both old symbols and modern pictograms. No official pictogram exists for Class D extinguishers. Both of these types of labels are shown below with the description of classes they are used on.

Class A extinguishers put out fires in ordinary combustibles, such as wood, paper, fabrics, plastics, etc.

Class B extinguishers should be used on fires involving flammable liquids, such as grease, gasoline, oil, etc., and flammable natural, industrial and medical gases.

Class C extinguishers are suitable for use on electrically energized fires.

Class D extinguishers are designed for use on flammable metals, such as magnesium, titanium, potassium, etc. There is no picture designator for Class D extinguishers.

Class K extinguishers are appropriate in fighting fires involving cooking oils, fats and greases.

Many extinguishers available today can be used on different types of fires and are labeled with more than one designator, e.g. A-B, B-C, A-B-C.

This is the old style of labeling indicating suitability for use on Classes A, B and C fires.

This new style of labeling with a diagonal line drawn through one of the pictures shows that this extinguisher may be used on ordinary combustibles, flammable liquids and gases, and **NOT** suitable for electrical equipment fires.

Active Vocabulary

label – этикетка (огнетушителя)
square – квадрат
circle – круг
star – звезда
hexagon – шестигранник
letter designation – буквенное обозначение
designator – значок
indicate – указывать; показывать
suitability – пригодность

Vocabulary Practice

I. Mark the statements below ***True*** or ***False*** and correct false ones.

1. All newer extinguishers in the USA are color coded.
2. Older fire extinguishers are labeled with pictograms.
3. Today most Class D extinguishers are colored.
4. Pictograms have letter designations.
5. Some modern extinguishers use both geometrical symbols and pictograms.
6. Class D extinguishers have no official pictogram.

II. Fill in *Table 6* with ***older marking for each Class of extinguishers***. Use information given below.

Table 6

Older Fire Extinguishers Marking

Classes of Extinguishers	Colored Geometrical Symbols
Class A	
Class B	
Class C	
Class D	
Class K	
	blue circle black hexagon green triangle yellow star red square

III. Discuss the color (***B***) and geometrical symbol (***C***) of each Class of extinguishers (***A***) using the information of *Table 6* and the model given.

Class ***A*** extinguishers are colored ***B*** and labeled with a ***C*** .

A	***B***	***C***
A, B, C, D, K	yellow, green, black, blue, red	hexagon, square, star, circle, triangle

IV. Study the following pictograms and geometrical symbols of fire extinguishers and explain what they indicate. Use the model given.

This pictogram (this geometrical symbol) indicates suitability for use on class … fires.


a)

b)


c)

d)


e)

f)

g)

V. Make the following sentences complete matching them for the pictograms given below.

1. This extinguisher can be used only on Class … fires.
2. This extinguisher is listed for Classes …and … fires.
3. This extinguisher is not suitable for Class … fires.
4. This extinguisher is effective on Classes … and … fires, and can't be used on Class … fires.


a)


b)

c)


d)

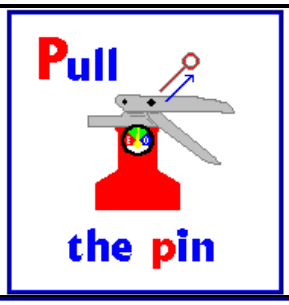
VI. Read *Text C* and interpret the ***PASS*** instruction for a fire extinguisher user.
Note: acronym – акроним (*зд.* слово-правило, составленное из начальных букв основных глаголов, обозначающих действия пользователя огнетушителем)

Text C

HOW TO USE A FIRE EXTINGUISHER

Even though extinguishers come in a number of shapes and sizes, they all operate in a similar manner. Here's an easy acronym for a fire extinguisher user:

P A S S - **P**ull, **A**im, **S**queeze, **S**weep

	***Pull the pin.*** This will allow you to discharge the extinguisher.
	***Aim at the base of the fire.*** If you aim at the flames, the extinguishing agent will fly right through and do no good.
	***Squeeze the top handle or lever.*** This depresses a button that releases the pressurized extinguishing agent in the extinguisher.
	***Sweep from side to side*** until the fire is completely out. Start using the extinguisher from a safe distance away, then move forward. Once the fire is out, keep an eye on the area in case it reignites.

Active Vocabulary

shape – форма
size – размер
pull the pin – выдернуть чеку
discharge the extinguisher – разгрузить выход огнетушащего вещества, осуществить выброс заряда огнетушителя

aim – целиться
base of the fire – очаг пожара
squeeze – нажимать, надавливать
handle – рукоятка
lever – рычаг
sweep from side to side – водить из стороны в сторону

Vocabulary Practice

I. Write instructions for a fire extinguisher user in order of priority.

1. Aim at the base of the fire.
2. Sweep from side to side.
3. Pull the pin.
4. Squeeze the top handle or lever.

II. Complete the following sentences with one of the components of PASS acronym.

1. To discharge the extinguisher … .
2. To make the extinguishing more effective … .
3. To release the pressurized extinguishing agent … .
4. To fight the flame … .

III. Work out a full instruction for a fire extinguisher user completing the following statements with appropriate information given below.

1. Every fire extinguisher user should remember the acronym "PASS" which stands for … .
2. First, you are to pull the pin … .
3. Second, aim at the base of the fire , … .
4. Third, you are to squeeze the top handle … .
5. At last, sweep from side to side … until the fire is out.

1. *starting the extinguishment from a safe distance and then moving forward*
2. *pull, aim, squeeze, sweep*
3. *to release the pressurized extinguishing agent*
4. *not at the flame*
5. *to discharge the extinguisher …*

IV. Give a corresponding Russian equivalent for the following proverb*: "A burnt child dreads the fire"*.

V. Read *Supplementary Texts* №№ *5 - 9*, and discuss new information for fire extinguishers and one more first-aid appliance (IFEX-3000).

UNIT 4

Topic: **FIREFIGHTING ACTIONS**
FIREFIGHTING STRATEGY
FIREFIGHTING TACTICS

Introductory Practice

I. Arrange the following words alphabetically and translate them using a dictionary:

goal, direct, area, confinement, spread, property, establish, guide, activity, support, complete, rescue, consider

II. Restore the dictionary form of the following words:

priorities, relocation, neighboring, completed, smoldering, activities, separately, establishes

III. Translate the following words with international roots:

process, incident, conservation, action, strategy, protection, individual, structure, situation, occupant, safe, attack, operation, tactics, select, control, report, scenario, horizontal, limit

IV. Form six groups of root words and give their Russian equivalents.

extinguish, ventilator, rescuer, locate, removal, extinguishment, hazard, location, remove, hazardous, ventilate, relocation, rescue, extinguisher, ventilation, localized

V. Name verbs/nouns the following words are formed of, and give their Russian equivalents:

definition, stabilization, evacuation, strategic, elimination, commander, safety, ventilation, dangerous, reduction

VI. Name both principle and attributive components in the following noun combinations:

life safety, incident stabilization, property conservation, action plan

VII. Divide the following sentences into three categories containing: 1) Gerund; 2) Participle I; 3) Participle II.

1. Firefighting is the process of extinguishing fires involving three main goals.

2. Extinguishment is reduction of the fully involved areas to a localized fire and smoldering sections.
3. Confinement is activity directed at limiting the spread of fire.

VIII. Choose the correct Russian variant for each of the following sentences. Mind Grammar, and give reasons for your choices.

1. Salvage is protection of property during the fire and after firefighting operations have been completed.
   1) *Спасение имущества – это его защита во время пожара и после операций по пожаротушению.*
   2) *Спасение имущества – это его защита во время пожара и после того, как операции по пожаротушению были завершены.*
   3) *Спасение имущества – это его защита во время пожара и поле окончания пожаротушения.*
2. A fire has been reported on the first floor, and is spreading very quickly.
   1) *Сообщается, что пожар происходит на первом этаже и распространяется очень быстро.*
   2) *Сообщалось, что пожар был на первом этаже и распространялся очень быстро.*
   3) *Сообщили, что пожар происходит на первом этаже и распространяется очень быстро.*
3. A victim is reported on the second floor.
   1) *Жертва сообщила, что она находится на втором этаже.*
   2) *Сообщается, что жертва находится на втором этаже.*
   3) *Сообщили, что жертва находится на втором этаже.*
4. This acronym outlines the priorities that need to be considered before strategy is created.
   1) *Этот акроним подчеркивает приоритеты, которые нужно рассмотреть до того, как стратегия будет разработана.*
   2) *Этот акроним подчеркивает приоритеты, которые будут рассмотрены до того, как стратегия будет разработана.*
   3) *Этот акроним подчеркивает приоритеты, которые будут рассмотрены до разработки стратегии.*

IX. Read *Text A* and explain what ***firefighting*** and ***strategy*** mean, and what ***RECEO VC*** stands for.

Note: (fire) incident – пожар, процесс горения
property conservation - сохранение имущества
guide – руководство
be on fire – гореть
exposure protection - защита соседних зданий, сооружений, имущества от воздействия факторов пожара
overhauling – окончательное тушение всех тлеющих участков
(fire) attack – тушение пожара

Text A

FIREFIGHTING STRATEGY

Firefighting is the process of extinguishing fires involving three main goals: life safety, incident stabilization, and property conservation.

The first part of the action plan in fire fighting is ***strategy*** which establishes *"what"* should be done. The basic guide for developing a strategy is known as RECEO VS. This acronym outlines the priorities hat need to be considered before a strategy is created. They are as follows: rescue, exposure, confinement, extinguishment, overhaul, ventilation, and salvage.

Rescue is simply protection of life which may involve removal of individuals from a burning structure or other dangerous situation, evacuation of a hazardous area, and relocation of occupants to a safe area.

Exposure protection is the process of protecting neighboring structures, or property from the structure that's on fire.

Confinement is activity directed at limiting the spread of fire. Firefighters should protect all six sides surrounding the fire: over, under, in front of, behind, to the left, and to the right of the fire.

Extinguishment is elimination of the flame and reduction of the fully involved areas to a localized fire and smoldering sections.

Overhauling is complete extinguishment of all smoldering fires.

Ventilation aimed at removing heat, smoke and toxic gases from a structure is usually done to support other activities, such as rescue and fire attack.

Salvage is protection of property during the fire and after firefighting operations have been completed.

Every hazard should be considered separately because the order of these priorities depends on the situation.

Active Vocabulary

firefighting – тушение пожаров
life safety – спасение жизни
incident stabilization – стабилизация процесса горения
property conservation – сохранение имущества
strategy – стратегия
priority – приоритет
hazard – опасность
hazardous – опасный
be on fire - гореть
rescue – спасение (жизней)
exposure - защита соседних зданий, сооружений, имущества от воздействия факторов пожара
confinement – ограничение распространения пожара
spread of fire – распространение пожара
elimination of flame – устранение пламени

smolder – тлеть
overhauling - окончательное тушение всех тлеющих участков
ventilation – вентиляция
salvage – спасение имущества

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A 1. эвакуация людей из опасной зоны
2. порядок выполнения приоритетов (при борьбе с пожаром)
3. основное руководство к разработке стратегии
4. переразмещение жителей (в безопасной зоне)
5. способствовать выполнению других видов работ (деятельности)

B 1. basic guide for developing strategy
2. evacuation of a hazardous area
3. relocation of occupants
4. support other activities
5. order of the priorities

II. Choose the right variant of strategy definition from the variants available.

Strategy can be defined as … .

1. "*how*" things will be done.
2. "*when*" things will be done.
3. "*what*" things will be done.
4. "*why*" things will be done.

III. Choose the right answer to the following questions.

1. What are incident priorities?
   1. *life safety, incident stabilization, and public relations*
   2. *life safety, incident stabilization, and building inspection*
   3. *life safety, incident stabilization, and property conservation*
2. Which one of the items is NOT a part of RECEO VS?
   1. *control*
   2. *salvage*
   3. *rescue*
3. How is overhauling achieved during an incident?
   1. *by early ventilation*
   2. *by the quick attack on the fire*
   3. *by extinguishing all of the smoldering fires.*
4. What activities does ventilation support*?*
   1. *property conservation*
   2. *life safety*
   3. *incident stabilization*

IV. Mark the definitions of strategy priorities given below ***True*** or ***False*** and correct false ones.

1. *Rescue* is complete extinguishment.
2. *Extinguishment* is reduction of flame to smoldering sections.
3. *Salvage* is protection of life.
4. *Exposure* protection is protection of property.
5. *Confinement* is limiting the spread of fire.
6. *Ventilation* is aimed at removing heat, smoke, and toxic gases from a structure.
7. *Overhauling* is protection of surroundings from the structure that's on fire.

V. Choose the most suitable ending from the versions given to complete each of the following sentences.

1. The process of extinguishing fires involves … .
2. Protection of life means … .
3. Limiting the spread of fire consists of … .
4. Protection of surroundings is … .

1.protection of all six sides surrounding the fire.
2.life safety, incident stabilization, property conservation.
3.protection of neighboring structures and property from the structure that's on fire.
4.removal of victims from a dangerous situation, evacuation of a hazardous area, and relocation of occupants to a safe area.

VI. Decide on the best strategy for the following situation.

A two-storey, single-family house is on fire. A victim is trapped on the second floor. What should be the first strategic priority?

1. ventilation
2. confinement
3. rescue
4. extinguishment

VII. Generalize the information of *Text A* completing the following sentences.

1. ***Firefighting*** is the process of … which involves … .
2. ***Strategy*** can be defined as "…" will be done.
3. ***The priorities of strategy*** are RECEO VS which stand for … .
4. ***Rescue*** is protection of … involving … .
5. ***Protection of property*** is called … .
6. ***Exposure protection*** is protection of … from the structure that's on … .
7. ***Confinement*** is directed at … .
8. ***Extinguishment*** is reduction of … to … sections.
9. ***Complete extinguishment*** of all smoldering fires is called … .
10. ***Ventilation*** supports … and is aimed at removing … .

VIII. Read *Text B* and mark the difference between strategy and tactics.
Note: incident commander – руководитель тушения пожара
room of (fire) origin – источник пожара

Text B

FIRE FIGHTING TACTICS

After defining the strategy the incident commander should select the tactics which establishes *"how"* and *"where"* the fire will be attacked. For example, if the strategy is to ventilate, then the tactics will consist of who is going to perform the task, whether it will be cross or roof ventilation, and what tools will be used to accomplish it.

Imagine, a fire has been reported on the first floor of a two-storey, single-family house, and is spreading very quickly. A victim is reported on the second floor. The main problems in this case are:

1) rescuing a possible victim;
2) fire on the first floor;
3) spread of heat, smoke, and fire to the second floor;
4) additional damage to the structure.

The *strategy* for this scenario will be rescue, confinement/extinguishment, and ventilation.

The ***tactics*** used to accomplish the strategy includes:

1) confinement of the fire to the room of origin;
2) protection of the stairway for rescuers and possible removal of victims;
3) conduction of the primary search starting with sleeping areas;
4) performance of horizontal ventilation;
5) check for the spreading of the fire to the second floor.

Active Vocabulary

tactics – тактика
incident commander – руководитель тушения пожара
attack a fire – тушить пожар
perform a task – выполнять задачу
performance – выполнение, осуществление
victim – жертва, пострадавший
damage – повреждение, разрушение; ущерб
accomplish – совершать, выполнять
room of (fire) origin – источник пожара
rescuer – спасатель
search – поиск

Vocabulary Practice

I. Study the fire case given in *Text B* and complete *Table 7* finding ***tactical solution*** for each strategic task.

Table 7

Strategy	Tactics
Rescue	
Confinement/Extinguishment	
Ventilation	

II. Using the information of *Text B* and *Table 7*, find tactics to accomplish each strategy given.

1. To accomplish the *strategy of rescuing* the *tactics* should be … .
2. To accomplish the *strategy of confinement/extinguishment* the *tactics* should be … .
3. To accomplish the *strategy of ventilation* the *tactics* should be … .

III. Read the following sentences and mark those matching the contents of *Text B*.

1. Selecting strategy and tactics, safety must be taken into account.
2. Primary search should be started with sleeping areas.
3. Ventilating a structure for property conservation allows firefighters to salvage unburned property.
4. Confinement is limiting the spread of fire to the room of origin.
6. Protection of stairway supports such activities as rescue and removal of victims.
7. During search and rescue operations victims are usually found in bedrooms and behind doors.

IV. Write summary of *Texts A* and *B* completing the following statements with appropriate versions given below.

1. The definition of strategy and selection of tactics is done by the … .
2. Strategy establishes … .
3. The incident priorities are … .
4. The order of the priorities depends on … .
5. Tactics consists of who is going to accomplish the strategy and … .

    1. *rescue, exposure, confinement, extinguishment, overhauling, ventilation, salvage*
    2. *what tools should be used*
    3. *incident commander*
    4. *“what” should be done*
    5. *the situation*

V. Give a corresponding Russian equivalent for the following proverb*: ”You should know a man seven years before you stir his fire”.*

VI. Read *Supplementary Texts* №№ *10, 11, 12* and discuss new ideas they give you on strategic operations.

UNIT 5

Topic: **FIRE VEHICLES**

BRIEF HISTORY OF FIRE ENGINES
FIRE ENGINES AND FIRE TRUCKS

Introductory Practice

I. Arrange the following words alphabetically and translate them using a dictionary:

record, opinion, emergency, staff, downfall, throw, well (n), fill, range, advance, invention, capable, storey, tool, enclose, prove, shape

II. Restore the dictionary form of the following words:

referred, engines, carried, forgotten, equipped, hoses, sliding

III. Translate the following words with international roots:

empire, colonial, reservoir, apparatus, method, operational, hydraulic, platform, specialized, incident, mobile, management, assist

IV. Make four groups of root words out of the following:

dangerous, management, necessary, introduction, dangerously, manager, necessitate, introduce, danger, manage

V. Guess the meaning of the following words by their roots and word-building elements:

reintroduce, inefficient, uncomfortable, interchangeable, pumper, powerful

VI. Name both principle and attributive components in the following noun combinations:

incident management, fire service specialist, water supply, rescue tools

VII. Define functions of Participle II in the following sentences: 1) Participle II as an attribute, 2) Participle II as a predicative.

1. The first fire engines are still referred to as pumpers.
2. In large fires, the reservoir was kept filled by a “bucket brigade”.
3. Early fire engines were hand pumps equipped with reservoirs and moved to the scene of fire by human or animal power.

VIII. Analyze the following sentences and mark those containing Infinitive Constructions (*Complex Object, Complex Subject, for-to-Infinitive Construction*).

1. The only way to take water to a fire was to carry it in buckets.
2. This arrangement (firefighters sat on the sides of fire engines) proved to be both uncomfortable and dangerous.
3. Colonial laws in America required each house to have a bucket of water in front of the house, for a "bucket brigade" to throw the water at flames in case of fire.
4. Water had to be carried to the pumper from a well or other place that had enough water to be used.

IX. Read *Text A* and note the ***principle of the early fire engine operation*** and ***position of firefighters on a vehicle***.

Note: B.C. (before Christ) – до нашей эры
A.D. (*лат*. Anno Domini) – нашей эры
rear of the vehicle – задняя часть пожарного автомобиля
fully enclosed seatings – места (для боевого расчета), находящиеся внутри автомобиля
self-propelled steam engine – самоходный паровой (пожарный) автомобиль

Text A

BRIEF HISTORY OF FIRE ENGINES

The first fire engines pumped water and are still referred to as pumpers. While the exact date is not known, it is recorded that early fire engines were designed by Egyptians about 200 B.C. But there's another opinion according to which it was done by Greeks in 4 B.C. The design was used by Romans up to the downfall of the empire as long as the year 400 A.D.

In the time that followed, up to 1100 A.D., almost everything about fire engines was forgotten. The only way to take water to a fire was to carry it in buckets. Colonial laws in America required each house to have a bucket of water in front of the house (especially at night), for a "bucket brigade" to throw the water at flames in case of fire.

When the fire engine was reintroduced, water still had to be carried to the pumper from a well or other place that had enough water to be used. Early fire engines were hand pumps equipped with reservoirs and moved to the scene of fire by human or animal power. In case of big fires, the reservoir was kept filled by a "bucket brigade", but the method was inefficient, moreover, a short range of a stream of water necessitated positioning the apparatus dangerously close to the fire.

The introduction of more powerful pumps and flexible hose solved this problem, and a great advance was made with the introduction of a steam-powered pump. The first self-propelled steam engine was built in New York in 1841. Steam fire engines were used in the Chicago Fire of 1871. A steam engine remained in use by the New

York Fire Department as late as 1932.

For many years firefighters sat on the sides of fire engines, or even stood on the rear of vehicles, which proved to be both uncomfortable and dangerous. Today all fire engines have fully enclosed seatings for their crews.

Active Vocabulary

engine – двигатель, мотор; автомобиль
fire ~ – пожарный автомобиль
pump – насос; накачивать воду
pumper – автонасос
"bucket brigade" – «ведерная команда»
equip with – оборудовать (чем-либо)
move by human/animal power – передвигать с помощью человеческой/ животной силы
scene of fire – место пожара
stream of water – струя воды
hose – рукав
steam-powered pump/engine – паровой насос/автомобиль
crew – пожарная команда, подразделение, расчет

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A 1. заставлять располагать насос на опасно близком расстоянии к огню
2. внедрение парового насоса
3. выливать воду на пламя в случае пожара
4. ручные насосы, снабженные резервуарами

B 1. introduction of a steam-powered pump
2. hand pumps equipped with reservoirs
3. necessitate positioning the apparatus dangerously close to the fire
4. throw the water at flames in case of fire

II. Find an "alien" word in each set.

1. crew, "bucket brigade", hose, team
2. apparatus, scene of fire, pumper, fire engine, vehicle
3. bucket of water , reservoir, seating, pumper

III. Choose the most suitable or most exhaustive answer to each of the following questions.

1. What was the function of early fire engines?
   1. *Early fire engines carried water.*
   2. *They pumped water.*
   3. *Early fire engines pumped and carried water, as well.*

2. How was water taken to the scene of fire during the period that followed the year 400 A.D.?

1. *Water was carried by hand pumps.*
2. *It was taken in reservoirs.*
3. *It was carried in buckets.*

3. How were fires extinguished in colonial America?

1. *Fires were fought by pumps.*
2. *They were extinguished by a "bucket brigade".*
3. *Each house had to keep a bucket of water in front of the house, for a "bucket brigade" to throw the water at flames in case of fire.*

4. What was the task of a "bucket brigade"?

1. *A "bucket brigade" had to pump water.*
2. *It had to fill reservoirs with water.*
3. *It had to move a fire engine to the scene of fire.*

5. Why were early fire engines positioned close to the fire?

It was so because *1. water had to be carries from a well or other water place.*
2. reservoirs had to be kept filled by a "bucket brigade".
3. the range of the stream of water was too short.

6. Why do modern fire engines have fully enclosed seatings for their crews in comparison with early models?

1. Modern fire engines have fully enclosed seatings for the crew not to be caught by rain or snow.
2. Modern fire engines have fully enclosed seatings for the crew because to sit on the sides of fire engines, or stand on the rear of vehicles is very uncomfortable and dangerous.

IV. Complete *Table 8* correlating ***facts from the history of fire engines*** given below the table with time periods.

Table 8

Time Period	Facts from the History of Fire Engines
200 B.C.	
4 B.C.	
the period from 4 B.C. to 400 A.D.	
the period between 400 A.D. and 1100 A.D.	
1100 A.D.	
1841	
1871	
the period from 1841 to 1932	

The first design of the fire engine was used by Romans.
The fire engine was reintroduced.
Steam fire engines were used in the Chicago Fire.
The first fire engine is recorded to be designed by Egyptians.
The first self-propelled steam engine appeared in New York.
Fire engines were not in use.
New York Fire Department used steam fire engines.
Early fire engines are considered to appear in Greece.

V. Match characteristics available for ***disadvantages of an early fire engine*** and ***advantages of a later steam fire engine***, and discuss them using the following models:

1. The disadvantages of ***an early fire engine*** were as follows: … .
2. ***A steam engine*** had the following advantages: … .

Characteristics:

1.a range of the water stream was quite short
2. flexible hoses
3. reservoirs had to be filled by a "bucket brigade"
3. water had to be carried from a well or other water place
4. more powerful engine
5. positioning of the engine farther from the fire
6. fire engines were moved to the scene of fire by human or animal power

VI. Give a brief history of fire engines filling in the gaps of the sentences with appropriate versions given below.

1. The first fire engine is considered to be designed either by … about 200 B.C. or … in 4 B.C.
2. In the period that followed 400 A.D. fire engines were not … .
3. During that time water was taken to the scene of fire in … .
4. In 1100 A.D. the fire engine was … .
5. It was equipped with … which, in case of fire, were filled by a … .
6. At first, a fire engine was moved to the … by … .
7. In 1841 the first … was built in New York and remained in use in New York Fire Department till 1932.

human or animal power, reintroduced, Egyptians, in use, self-propelled steam engine, Greeks, reservoirs, buckets, scene of fire, "bucket brigade"

VII. Read *Text B* and mark the difference between the terms ***"fire engine"*** and ***"fire truck"***.

Note: nozzle – (пожарный) ствол
gear - снаряжение
firefighter ~ – боевое снаряжение пожарного
emergency ~ – аварийное снаряжение
water tender (tanker) - автоцистерна
HazVat (hazardous materials) van – автомобиль для тушения опасных материалов
rescue unit – спасательный автомобиль
control unit – штабной автомобиль
mobile communications vehicle – пожарный автомобиль связи
hydraulic platform – платформа на гидравлическом автоподъемнике
aerial appliance – пожарный автоподъемник
turntable ladder – автомеханическая лестница
telescoping boom – телескопическая (выдвижная)стрела автоподъемника
basket – люлька
staff of a fire headquarters – личный состав штаба пожаротушения

Text B

FIRE ENGINES AND FIRE TRUCKS

To an American fire service specialist, the words “fire engine” and “fire truck” are not interchangeable. ***Fire engines*** are also known as ***pumpers*** as they are employed to pump water using an engine and onboard water supply. Fire engines are equipped with a large pump capable of pumping thousands of liters of water per minute. Pumpers may also carry such operational equipment as hoses, nozzles, ladders, breathing apparatus, chemical protection suits, and other firefighter gear.

Like pumpers, ***water tenders***, or ***tankers***, are designed to carry a large water tank. They are valuable in country areas where water supplies are limited.

A ***fire truck*** is different from a fire engine in that it has no onboard water supply. Instead, fire trucks may be equipped with long ladders, hydraulic platforms, additional firefighting equipment, heavy rescue tools, and other emergency gear.

The best-known forms of fire trucks are two types of ***aerial appliances***: turntable ladders and hydraulic platforms. ***Turntable ladders*** have sliding ladder sections that are attached to each other and pulled upward by an extension mechanism.

A more recent invention is the ***hydraulic platform***. This fire truck, capable of reaching several storeys in the air, has a large telescoping boom that extends out with a basket or “bucket” attached to its tip.

There are specialized trucks which are designed for one purpose, like ***rescue units*** used to rescue people involved in accidents and having a large amount of rescue equipment, ***HazMat (hazardous materials) van*** for incidents in which chemicals and other hazardous substances are present, ***mobile communications vehicles*** assisting communications and incident management, ***control units*** taking the staff of a fire headquarters to the site of fire, and others.

Fire trucks come in many different colors, sizes, and shapes, and have many uses.

Active Vocabulary

water supply – водоснабжение
nozzle – (пожарный) ствол
breathing apparatus – дыхательный аппарат
gear - снаряжение
firefighter ~ – боевое снаряжение пожарного
emergency ~ – аварийное снаряжение

truck (van, unit, vehicle, tender) автомобиль
fire truck – пожарный автомобиль
water tender (tanker) - автоцистерна
specialized truck – специальный (пожарный) автомобиль
HazVat (hazardous materials) van – автомобиль для тушения опасных материалов
rescue unit – спасательный автомобиль
control unit – штабной автомобиль
mobile communications vehicle – пожарный автомобиль связи
hydraulic platform – платформа на гидравлическом автоподъемнике
rescue tools – спасательные инструменты
aerial appliance – пожарный автоподъемник
turntable ladder – автомеханическая лестница
extension mechanism – механизм выдвижения (лестницы)
invention – изобретение
telescoping boom – телескопическая (выдвижная)стрела автоподъемника
extend out – выдвигаться
basket – люлька
staff of a fire headquarters – личный состав штаба пожаротушения
site of fire – место пожара

Vocabulary Practice

I. Choose the most appropriate characteristics for fire trucks from the versions available.

Fire trucks are vehicles which … .

1. *have onboard water, are equipped with a large pump and used to pump*
   a. water.
2. *have onboard water tank, and are used in extinguishing country fires.*
3. *have no onboard water supply, and are equipped with turntable ladders, hydraulic platforms, additional firefighting equipment and emergency gear.*

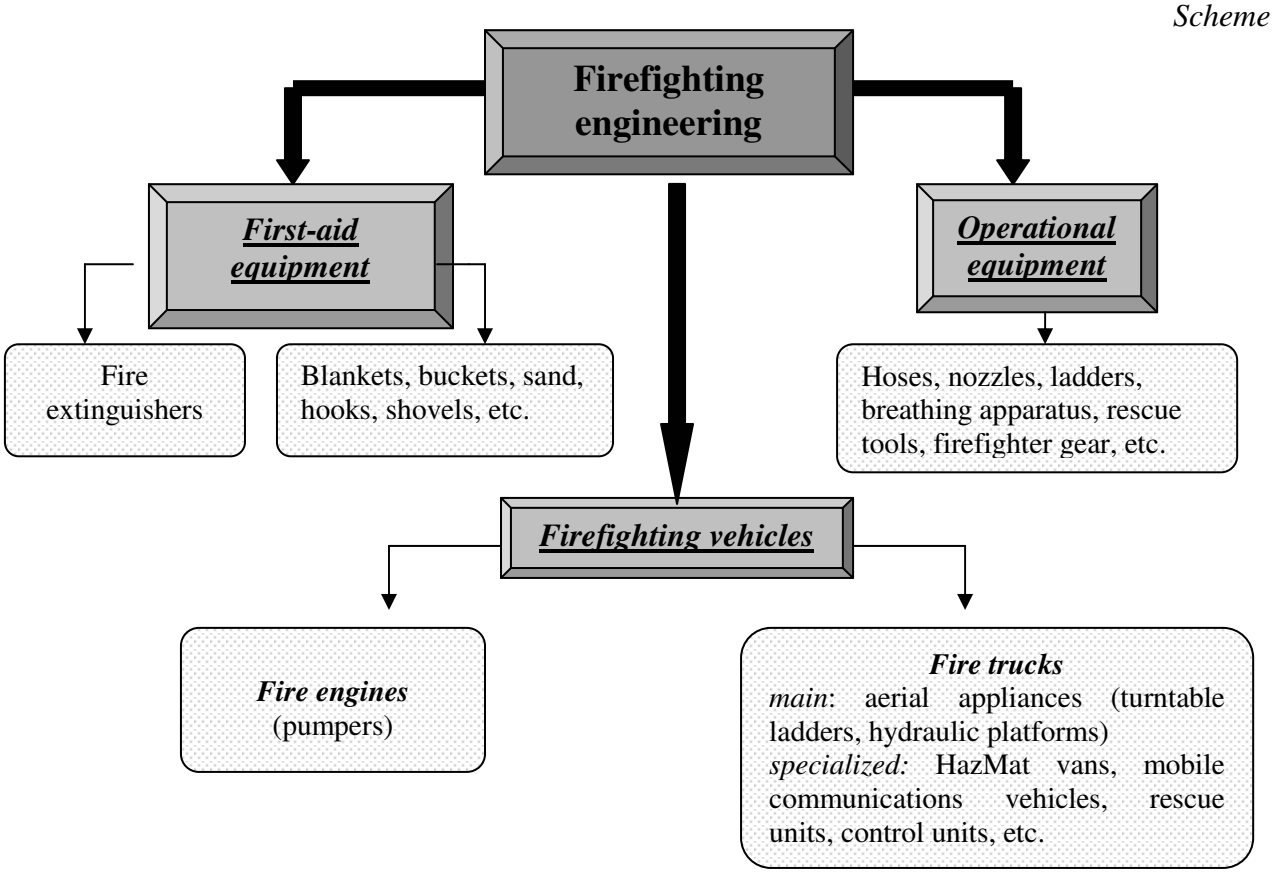
II. Study the following statements and say what type of fire truck each of them defines.

1. *This fire truck* has a large telescoping boom extending out with a basket.
2. *This firefighting vehicle* has a large water tank to be carried to the place with limited water supply.
3. *This unit* carrying different rescue equipment is used to rescue people involved in accidents.
4. *This vehicle* assists communications and incident management.
5. *This aerial appliance* has sliding ladder sections pulled upward by an extension mechanism.
6. *This unit* takes the staff of a fire headquarters to the site of fire.
7. *This van* is used in incidents with the presence of hazardous materials.

III. Study *Scheme 1* and say what new information for firefighting engineering it gives you in comparison with the information of *Text B.*

Note: firefighting engineering – пожарная техника
first-aid fire equipment – первичные средства пожаротушения
blanket – покрывало
hook – багор
shovel - лопата

Scheme 1



IV. Discuss firefighting engineering filling the gaps with appropriate information of *Text B* and *Scheme 1.*

1. ***Firefighting engineering*** includes … .
2. ***First-aid equipment*** involves … and assisting appliances at hand such as … .
3. The examples of ***operational equipment*** are … .
4. ***Firefighting vehicles*** are divided into … and … .
5. ***Fire engines***, or pumpers, have onboard … and are used … water.
6. ***Water tenders (tankers)*** also have … water and are especially valuable in areas where water supply is … .
7. ***Fire trucks*** have no … and may be equipped with … .
8. The main fire trucks are two types of ***aerial appliances***: … and … .
9. Fire trucks designed for one purpose are called … ones.
10. The examples of ***specialized vehicles*** are … .

V. Read *Supplementary Texts* №№ *13-20* and discuss new information they give you on the history of development and types of firefighting engineering.

UNIT 6

Topic: **BECOMING A FIREFIGHTER**

GENERAL REQUIREMENTS FOR BECOMING A FIREFIGHTER
GENERAL SELECTION PROCESS FOR FIRE DEPARTMENTS
EMERGENCY MEDICAL TECHNICIANS (EMTs)

Introductory Practice

I. Restore the dictionary form of the following words:

required, spaces, demanding, designed, solving, composed, qualified, higher, referred, duties, offered

II. Translate the following groups of root words paying attention to the formation means of various parts of speech:

require – requirement
employ – employer – employee – employment
investigate – investigator – investigation
respond – response – responsible – responsibility
probation – probationary
technique – technical – technician
fit - fitness
vision – visual
blind – blindness

III. Translate the following words with international roots:

function, crisis, general, interview, certificate, candidate, license, selection, examination, determine, psychologist, pharmacology, transportation

IV. Attribute a part of speech to each of the following words and guess their meaning by their roots and word-building elements:

interpersonal, colorblind, uncorrected, teamwork, responder, lifesaving

V. Name both principle and attributive components in the following noun combinations:

age requirement, fire suppression work, distance visual acuity, selection process, lie detector test, life support, first-aid responders, ambulance drivers

VI. Define a) *–ing* forms (Participle I, Gerund, Verbal Noun) and b) Participial Constructions in the following sentences.

1. No firefighting engineering is possible without a firefighter.
2. Requirements for obtaining a job as a firefighter in the USA vary by a fire department.
3. Firefighting and medical rescue is a physically demanding work.
4. Oral interview is designed to evaluate practical problem solving ability.
5. This examination usually includes psychological evaluation involving a written test sometimes followed by a clinical interview with a psychologist.
6. In the United States Emergency Medical Technicians (специалисты экстренной медицинской помощи) are classified according to their level of certification: EMT-B (Basic), EMT-I (Intermediate) and EMT-P (Paramedic), the levels of training being separated into BLS (Basic Life Support), ILS (Intermediate Life support) and ALS (Advanced Life Support).
7. Today almost all states forbid the staffing of ambulances by anyone with less than EMT-B level of certification.

VII. Define functions of Participle II in the following sentences: 1) Participle II as an attribute, 2) Participle II as a predicative.

1. Firefighting isn't for those who are seriously afraid of heights or confined spaces.
2. Prior to the 1970s, ambulances were staffed with advanced first-aid level responders who were frequently referred to as “ambulance drivers”.
3. If a candidate meets the conditions mentioned, fire departments usually schedule a test date for each of the candidates
4. A paramedic is an extension to the services offered by a medical doctor.
5. A U.S. high school diploma is always required by any fire department in the United States.

VIII. Divide the following sentences into two categories containing: 1) Infinitives and 2) Infinitive Constructions. Define forms and functions of Infinitives and types of Infinitive Constructions.

1. Candidates must have a good ability to safely perform fire suppression and rescue work..
2. If you get to this step (training and probation), you are supposed to have six month of comprehensive training (всесторонняя тренировка).
3. An Emergency Medical Technician (EMT) is an emergency responder trained to provide emergency medical services to the critically ill and injured.
4. Paramedics providing advanced life support care still require additional education to get a medical doctor's license.

IX. Study the following sentences and mark conjunctions used in them.

1. Medical examination determines whether the candidate is medically qualified to perform a firefighter’s duties.

2. There exist special standards for both corrected and uncorrected distance visual acuity.
3. Paramrdics often conduct diagnosing to determine whether a medical problem can be on-site treated or requires transportation to a hospital.

X. Read Text A and prove why firefighting is not for everyone.
Note: high school diploma – аттестат о среднем образовании
B.Sc. (Bachelor of Science) degree – степень бакалавра наук
EMT (Emergency Medical Technician) – специалист экстренной медицинской помощи

Text A

GENERAL REQUIREMENTS FOR BECOMING A FIREFIGHTER

No firefighting engineering is possible without a firefighter, but firefighting isn't for everyone. It's not for those who are seriously afraid of heights or confined spaces, and who don't function well in a crisis. Although requirements for obtaining a job as a firefighter in the USA vary by a fire department, ***general requirements*** are as follows:
1. ***Age***. Age requirement is generally at least 18 years of age at the time of the interview. Some fire departments, however, have the age requirement of 20 and a half at the time of the interview and 21 for employment.
2. ***Education***. A U.S. high school diploma is always required by any fire department in the United States. Some fire departments may require a B.Sc. degree in Fire Science or EMT (Emergency Medical Technician) or even a Paramedic certificate for employment.
3. ***Physical fitness***. Firefighting and medical rescue is a physically demanding work.. Candidates must be in excellent health and have a good ability to safely perform fire suppression and rescue work.
4. ***Vision***. There exist special standards for both corrected and uncorrected distance visual acuteness. Candidates must not be colorblind.
5. ***License.*** A valid Driver's License is usually required.

Active Vocabulary

require - требовать
requirement – требование
obtain a job – получить работу
vary – изменяться; разниться
age – возраст
interview – собеседование
employment – служба, работа
education – образование
high school diploma – аттестат о среднем образовании
certificate – удостоверение; свидетельство
fitness – (при)годность

rescue work – спасательные работы
fire suppression – подавление (тушение) пожара
vision – зрение
visual acuteness – острота зрения
colorblind – дальтоник
driver's license – водительские права
valid – действительный; имеющий силу

Vocabulary Practice

1. Match Russian word combinations from ***A*** for English ones from ***B***.

A 1. работа, требующая больших физических затрат
2. бояться высоты и ограниченных пространств
3. выполнять работу по тушению пожаров и спасению людей
4. получить работу в качестве пожарного

B 1. be afraid of heights and confined spaces
2. obtain a job as a firefighter
3. a physically demanding work
4. perform fire suppression and rescue work

II. Following the contents of *Text A* mark the statements below ***True*** or ***False*** and correct false ones.

1. Fire suppression and rescue work is for everyone.
2. All American fire departments have the same requirements to be met by a candidate.
3. An applicant (претендент) should be 20 years of age at the time of the interview.
4. For employment, EMT (Emergency Medical Technician) certificate and a valid Driver's License are always required.
5. Firefighting job demands of a candidate an excellent health and a good ability to safely perform fire suppression and rescue work.
6. An applicant should have an acute vision, colorblindness being permissible.

III. Study the answers USFA (United States Fire Administration) gives to the most common young people questions, and a) list ***the most important things for becoming a firefighter,*** and b) explain ***why a person with military experience has an advantage in civil firefighting.***

Young People Question	USFA Answer
1. I am a high school student, how can I prepare to become a firefighter?	Maintaining good physical condition by exercising and good nutrition is a good start. Joining your local Fire Department might get you valuable connections with firefighters, which will improve your hiring chances later. You might also think about taking EMT classes to get a head start. Remember that education is very important and more and more fire departments are looking for individuals with college education.
2. I am serving in the military, how do I become a civilian firefighter?	The steps for becoming a civilian firefighter are the same for those with military experience as for those without it. Military experience, however, might give one an advantage in civilian firefighting, because Fire Departments have a paramilitary structure and often value the skills provided by the military service.

IV. Discuss requirements for becoming an American firefighter completing the following sentences with appropriate information of *Text A* and *Task III.*

1. Firefighting is for those who … .
2. The most important things for becoming a firefighter include … .
3. General requirements for becoming a firefighter in the USA are … .
4. A candidate should be … years of age at the time of the interview and … for employment.
5. Fire departments require the following certificates: … .
6. Physical fitness means … .
7. A person with military experience has an advantage in civil firefighting because … .
8. Vision requirements should be met according to … .

V. Read *Text B* and compare ***general selection process for fire departments in the USA and Russia.***

Note: reading comprehension – изложение (понимание прочитанного)
background investigation – *зд.*анализ моральной устойчивости и противозаконных нарушений
employment record – запись о трудоустройстве
driving record – запись о нарушении правил дорожного движения

Text B

GENERAL SELECTION PROCESS FOR FIRE DEPARTMENTS

If a candidate meets the conditions mentioned in *Text A*, fire departments usually schedule a test date for each of the candidates. The selection process for most fire

departments includes:
1. ***Written test*** in reading comprehension, mathematics, and algebra.
2. ***Oral Interview***. It is designed to evaluate practical problem solving ability and interpersonal relations including teamwork and communicative skills.
3. ***Physical ability test***. Physical ability test is usually composed of eight events. This test is always designed to measure a candidate's strength, endurance and agility.
4. ***Background investigation***. This investigation is conducted to evaluate a candidate's honesty, respect for the law and the rights of others, employment record, financial responsibility, driving record, and the use of drugs. Lie Detector test is administered by some fire departments at this step.
5. ***Medical examination***. This examination determines whether the candidate is medically qualified to perform a firefighter's duties. This examination usually includes a drug and alcohol test and psychological evaluation involving a written test sometimes followed by a clinical interview with a psychologist.
6. ***Training and probation***. If a candidate gets to this step, he is supposed to have six months (usually) of comprehensive training at a Fire Academy. Then, after successful completion of a year probationary period you are a firefighter.

Active Vocabulary

meet conditions – удовлетворять условиям
selection – отбор
reading comprehension – изложение (понимание прочитанного)
oral interview – устное собеседование
evaluate – оценивать
solve practical problems – решать практические проблемы
interpersonal relations – межчеловеческие отношения
teamwork – совместная бригадная работа
communicative skills – навыки общения
physical ability – физическая способность
measure – оценивать; измерять
strength – сила
endurance – выносливость
agility – ловкость
conduct investigation – проводить исследование
background investigation – *зд.*анализ моральной устойчивости и противозаконных нарушений
honesty – честность
responsibility – ответственность
medical examination – медицинское обследование
determine – определять
perform a firefighter's duties – выполнять обязанности пожарного
psychological evaluation – психологический тест
comprehensive training – всесторонняя тренировка
probation – стажировка
probationary period – испытательный срок

Vocabulary Practice

I. Complete the following statements with appropriate information from *Text B.*

1. Before a fire department schedules a test date for a candidate he has to meet the following requirements: … .
2. A drug and alcohol test enters … examination.
3. A written psychological test is sometimes followed by … .
4. A Lie Detector test is included into … investigation.
5. To become a firefighter a candidate should have the following personal characteristics: … .
6. An American may become a firefighter after … of comprehensive training at a Fire Academy and … probationary period.

II. Study *Table 9* and characterize each stage of the selection process for the USA fire departments choosing a suitable verb and definition from the versions given in the table.

Table 9

Written Test	*evaluates*	a candidate's juridical and financial responsibility.
Oral Interview		skills a person has acquired during training and probationary periods.
Physical Ability Test	*measures*	a candidate's medical qualification to perform a firefighter's duties.
Background Investigation	*determines*	an applicant's knowledge in reading comprehension, mathematics, and algebra.
Medical Examination		a candidate's strength, endurance and agility.
Training and Probation		practical problem solving ability and interpersonal relations.

III. Discuss ***general requirements for becoming a cadet of a Russian Fire Service Institution*** filling in the gaps of the following statements with appropriate variant/s chosen from the versions available.

1. ***Age.*** Age requirement is … years of age at the time of the interview.
   1. 20-21
   2. 17-25
   3. 18-20
2. ***Education.*** A … or … school certificate is always required.
   1. *primary vocational*
   2. *secondary vocational*
   3. *secondary general*

3. ***Written tests.*** An applicant is to take written tests in … .
   1. *Russian language and literature, maths, chemistry*
   2. *reading comprehension, algebra, maths*
   3. *maths, physics, Russian language and literature (reading comprehension)*

4. ***Physical ability test.*** This test measuring an applicant's endurance, strength ability and agility is composed of … events.
   1. *eight*
   2. *three*
   3. *five*

5. ***Medical examination.*** Medical examination gives medical qualification of an applicant including … .
   1. *background investigation*
   2. *psychological evaluation*
   3. *physical ability test*

IV. Match the requirements for becoming a firefighter ***(A)*** with suitable interpretations ***(B)*** and mark those which are met in Russia. Give reasons for your choices. Discuss the requirements using the following models:

1. ***(A) is/are (not) required to become a firefighter in Russia.***
2. ***(A) requires of a candidate to … .***

A	***B***
1. Vocational Training	1. A firefighter should have a valid Driver's License.
2. Probationary Period	2.The investigation is conducted to evaluate a person's juridical and financial responsibility.
3. Oral Interview	3. The examination determines whether a candidate is medically qualified to perform a firefighter's duties.
4. Background Investigation	4. A candidate is supposed to have three or five years of comprehensive training at a Fire Service Institution.
5. Medical Examination	5. A firefighter should have an advanced level of medical service training.
6. Driver's License	6. This oral test evaluates practical problem solving ability, teamwork and communicative skills.
7. Physical Fitness	7. This period lasting for about two months is designed for a firefighter to get adapted to the working and climatic conditions, and to the present level of economic development of the region.
8.EMT/Paramedic Certificate	8. A person should have a good physical ability to safely perform firefighting and rescue work.

V. Read *Text C* and give definitions to "***ambulance drivers", EMT-B, EMT-I***, and ***Paramedics.***

Text C

EMERGENCY MEDICAL TECHNICIANS

An ***Emergency Medical Technician (EMT)*** is an emergency responder trained to provide emergency medical services to the critically ill and injured. In the United States EMTs are classified according to their level of certification: EMT-B (Basic), EMT-I (Intermediate) and EMT-P (Paramedic), the levels of training being separated into BLS (Basic Life Support), ILS (Intermediate Life support), and ALS (Advanced Life Support). Prior to the 1970s, ambulances were staffed with advanced first-aid level responders who were frequently referred to as "ambulance drivers". Today almost all states forbid the staffing of ambulances by anyone with less than EMT-B level of certification.

Star of Life, a global symbol for emergency medical service

Paramedics receive more advanced education and training. They respond to medical incidents and provide pre-hospital emergency treatment including instruction on pharmacology, the administration of lifesaving drugs, the technique of inserting a breathing tube into a person's lungs, and even some surgical techniques. Paramrdics often conduct diagnosing to determine whether a medical problem can be on-site treated or requires transportation to a hospital.

Paramedics providing advanced life support care still require additional education to get a medical doctor's license. In many ways, a paramedic is an extension to the services offered by a medical doctor.

Active Vocabulary

treatment - помощь
- emergency ~ – неотложная терапия
- first-aid ~ – оказание первой медицинской помощи
- medical doctor ~ – врачебная помощь
- on-site ~ – первая помощь на месте
- pre-hospital ~ – добольничная (доврачебная) медицинская помощь

provide treatment (care) оказывать медицинскую помощь
the injured – пострадавшие
life support – жизнеобеспечение
intermediate – промежуточный
advanced – продвинутый, повышенного типа
pharmacology – фармакология
surgery – хирургия
conduct diagnosing – проводить диагностику
transport to a hospital – доставить в больницу

Vocabulary Practice

I. Correlate each ***EMT level of certification (A)*** with an appropriate type of ***Life Support training (B)***.

A level of certification corresponds to ***B*** Life Support training.

A		***B***	
1.	*EMT-B*	*1.*	*Intermediate*
2.	*EMT-I*	*2.*	*Advanced*
3.	*IMT-P*	*3.*	*Basic*

II. Choose from the functions given below the ones common for all EMTs and specific for Paramedics. Use the following models:

1. All EMTs have the following common functions: … .
2. Paramedics provide the following specific services : … .

1. *respond to medical incidents*
2. *provide emergency medical service to the injured*
3. *provide pre-hospital emergency treatment*
4. *transport the injered to a hospital*
5. *conduct instruction on pharmacology*
6. *administrater lifesaving drugs*
7. *insert a breathing tube into a person's lungs*
8. *do some surgery*
9. *conduct diagnosing to determine whether a medical problem can be on-site treated or requires advanced life support care*

III. Using *Active Vocabulary* of *Text C* render the following ***Emergency Pre-Hospital Treatment Requirements*** for a Russian firefighter into English.

Пожарный должен быть способным оказать самопомощь (self-treatment) и первую добольничную медицинскую помощь пострадавшим. Он обязан провести возможную диагностику и решить, можно ли оказать помощь на месте или пострадавшего необходимо доставить в больницу.

Для оказания первой помощи по жизнеобеспечению пожарному необходимо знание основ фармакологии, неотложной терапии, хирургии и эпидемиологии.

IV. Read the following ***EMT's Prayer*** and mind an EMT's aspirations (желания).

God! Grant me the ability to give emergency care
With skillful hands, a knowledgeable mind and tender love and care.
Help me deal with everything, when lives are on the line
To see the worst, administer aid, and ease a worried mind.

V. Read *Supplementary Texts* №№ 21, 22 and discuss new ideas they give you on a) training American firefighters and b) six main rescuers' tasks being the symbols of the six branches of EMS Star of Life.

UNIT 7

Topic: **FIRE COMPANY PERSONNEL**
OCCUPATION OF A FIREFIGHTER
CREW ASSIGNMENT

Introductory Practice

I. Restore the dictionary form of the following words:

emergencies, duties, rescuing, trapped, threatening, volunteers, divided, manned

II. Attribute a part of speech to each of the following words:

occupation, immediately, survivor, dangerous, alertness, endurance, judgment, decision, obligation, frequently, definition, instance

III. Translate the following words with international roots:

natural, medical, service, course, career, standard, procedure, personnel, specific, personal, characteristic, initiative, brigade, industrial, complex, command, jurisdiction, structure, complex, mixture

IV. Translate the following groups of root words paying attention to the formation means of various parts of speech:

train – trainer – training
nature – natural – naturally
prevent – prevention – preventive
certify – certificate
technique – technician – technical
respond – response – responsible – responsibility – responsive
survive – survivor – survival
maintain – maintenance
practise – practice – practical
investigate – investigation – investigator
inspect – inspector – inspection

V. Name both principle and attributive components in the following noun combinations:

fire control, fire training organization, fire inspector, fire brigade, engine (fire) company, ladder (fire) company, rescue company

VI. Study the following complex sentences, define types of subordinate clauses, and the ways they join principle clauses (syndetically or asyndetically).

1. The main basis skills firefighters are to acquire involve fire prevention, self-preservation, rescue, salvage, and fire control.
2. The number of personnel at a fire station varies depending on whether it is full-time (штатный) or retained (наемный с повременной оплатой).
3. There are firefighters who are paid for the specific time they are responding to emergencies.

VII. Divide the following sentences into two categories containing: 1) Infinitives and 2) Infinitive Constructions. Define forms and functions of Infinitives and types of Infinitive Constructions.

1. When on duty, firefighters must be prepared to respond immediately to a fire.
2. A firefighter is supposed to respond to fire alarms and other emergencies for fire suppression, rescue, emergency medical services, etc.
3. Fire inspectors conduct inspections of structures to prevent fires.
4. Many fire departments require their personnel to be certified as emergency medical technicians (специалисты скорой помощи).
5. British fire brigades have a legal obligation to respond not only to fires, but also to every possible emergency.

VIII. Read *Text A* and note the problems it mentions.

Note: fire suppression – подавление (тушение) пожара
natural disaster – стихийное бедствие
emergency medical service – скорая медицинская помощь
salvage – спасение имущества (при пожаре)
fire control – борьба с пожаром, тушение пожара
fire investigator – дознаватель причины пожара
fire inspector – инспектор пожарной охраны
alertness – (боевая) готовность
aptitude – пригодность; способность
good judgment – здравый смысл

Text A
OCCUPATION OF A FIREFIGHTER

A firefighter is a person who is trained for firefighting activity and supposed to respond to fire alarms and other emergencies for fire suppression, rescue, emergency medical services, etc. Firefighters are sometimes referred to as *firemen*, although women also join firefighting units. There are also several nicknames for firefighters which include "*buckethead*", "*smokeate*r", "*leather lungs*", *"hose monkeys*", etc.

The basic skills firefighters are to acquire involve fire prevention, self-preservation, rescue, salvage, and fire control. Firefighters also get training in emergency medical procedures because many fire departments require their personnel to

be certified as EMT (Emergency Medical Technicians) to provide emergency medical service. These skills are regularly practised during training courses throughout a firefighter's career. The main fire training and standards organization in the United States is the National Fire Protection Association (NFPA).

When on duty, firefighters must be prepared to respond immediately to a fire or any other emergency that arises. In each case they perform specific duties assigned by a superior officer. Sometimes they have to remain at the site of a disaster for days rescuing trapped survivors. Between alarms firefighters clean and maintain equipment, have practical drills and practise physical activities. Some firefighters become fire investigators who determine the origin and causes of fires, or fire inspectors conducting inspections of structures to prevent fires. To act effectively in an extremely dangerous situation every firefighter has to possess such very important personal characteristics as alertness, self-discipline, courage, mechanical aptitude, endurance, and strength. Initiative and good judgment are also very significant because firefighters have to make quick decisions in emergencies.

Active Vocabulary

fire suppression – подавление (тушение) пожара
train – тренировать(ся)
natural disaster – стихийное бедствие
emergency – чрезвычайная ситуация
~ medical service – скорая медицинская помощь
~ medical technician (EMT) – специалист скорой помощи
fire prevention – пожарная профилактика
salvage – спасение имущества (при пожаре)
fire control – борьба с пожаром, тушение пожара
skill – навык, умение
duty – дежурство
respond to – выезд по сигналу тревоги; выезжать по сигналу тревоги
survivor – спасшийся, выживший
fire investigator – дознаватель причины пожара
fire inspector – инспектор пожарной охраны
alertness – (боевая) готовность
self-discipline – внутренняя дисциплина
aptitude – пригодность; способность
good judgment – здравый смысл

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A
1. обслуживать оборудование
2. принимать решения
3. источник и причины пожара
4. быть сертифицированным в качестве специалиста скорой помощи

B 1. origin and causes of a fire
2. be certified as an emergency medical technician
3. maintain equipment
4. make decisions

II. Find an "alien" word in each set.

1. protection of property, rescue, salvage
2. brigade, skill, department, crew
3. courage, endurance, good judgment, strength

III. Following the contents of *Text A* match verbs from ***A*** for appropriate words and word combinations from ***B.***

A	***B***
train	duties
rescue	physical activities
act	affectively in extremely dangerous situations
maintain	the origin and causes of fires
possess	personal characteristics
provide	skills
perform	equipment
practise	trapped survivors
determine	emergency medical service

IV. Characterize *a firefighter, a fire inspector*, and *a fire investigator* using the following model and suggested variants.

A firefighter/fire inspector/fire investigator is a person who … .

1. *determines the origin and causes of fires.*
2. *puts out fires, rescues people, conducts salvage and fire control, and provides emergency medical services.*
3. *conducts inspections of structures to prevent fires.*

V. Compare the plan given with the contents of *Text 1* and correct the succession of its items.

1. Firefighting training
2. Firefighter's personal characteristics
3. Firefighting skills
4. Functions of a firefighter and his nicknames
5. Nature of firefighting work

VI. Read the following statements and decide what plan items they supplement.

1. Firefighters' duties may change several times while the company is in action: firefighters connect hose lines to hydrants, operate a pump, rescue victims and provide

emergency medical attention if needed, ventilate smoke-filled areas, protect property, etc.
2. A number of American colleges and universities offer 2-or 4-year courses in fire service.
3. The three main goals in firefighting are (in order) life safety, incident stabilization, and property conservation.
4. Because of the fact that members of a crew live and work together under conditions of stress and danger, they must have ability to get along with each other (уживаться, ладить) very well.
5. Some firefighters acquire the skills of controlling forest and hazardous materials fires because these fires require specific methods.

VII. Following the contents of *Text A* mark the statements below ***True*** or ***False*** and correct false ones.

1. In the USA fire brigades are staffed only with men.
2. A “fireman” is a nickname for a “firefighter”.
3. Some firefighters specialized in fire inspection and fire investigation.
4. The main American fire training organization is ISO .
5. The order of fulfilling main goals in firefighting is salvage, life safety, and incident stabilization.
6. At fires, the task of firefighters is only to rescue people who are in danger, and it is professional emergency medical technicians who remain at the site of fire to help trapped survivors.
7. Making quick decisions is not very important for a firefighter because it’s the task of a superior officer.
8. Firefighters must be able to get along with each other very well.

VIII. Discuss what a firefighter does 1) *being on duty between alarms* and 2) *when at fires,* using the information of *Text A* and *Task VI* and the models available.

1. *Being on duty between alarms*, a firefighter must … .
2. *When at fires*, a firefighter does the following things: …

IX. Discuss a firefighter’s skills and personal characteristics completing the following statements with appropriate versions given below.

1. Every firefighter is to acquire such *skills* as … .
2. Very important *personal characteristics* of a firefighter are … .

good judgment, fire prevention, mechanical aptitude, strength, self-preservation, initiative, rescue, endurance, salvage, fire control, self-discipline, emergency medical service, courage, methods of controlling forest and hazardous materials fires, alertness

X. Tell about a firefighter’s occupation using all possible information you have to complete the following sentences.

1. The three ***main goals*** in firefighting are … .
2. A ***firefighter*** is a person who … .
3. Firefighters have several ***nicknames***: … .
4. Every firefighter is to acquire such ***skills*** as: … .
5. ***Being on duty*** between alarms, a firefighter must … .
6. ***When at fires***, a firefighter does the following things: …
7. Very important ***personal characteristics*** of a firefighter are …
8. Firefighters may ***specialize*** in fire investigation determining … or in fire inspection conducting … .

XI. Read *Text B* and choose for it the most suitable title from the following versions.

1. Private and Public Fire Departments
2. Paid and Non-Paid Firefighters
3. Types of Fire Brigades Manning

Note: man – укомплектовывать личным составом, снабжать людьми
manning – укомплектование личным составом
fire brigade – пожарная команда; пожарная часть; отряд
fire company – пожарная команда; боевой расчет
fire department – пожарная часть, подразделение
private ~ - частная или объектовая пожарная часть
public ~ - муниципальная пожарная часть
conduct fire station coverage – нести пожарную службу в части

Text B

Firefighting is a very dangerous occupation. But not all firefighters are paid for their services. In some countries, including *the United States, Canada, Finland, Australia*, and *New Zealand full-time* ***"career" firefighters (professionals)*** work alongside with *part-time* ***"call" firefighters*** (those who are paid hourly for the specific time they are responding to emergencies) and ***volunteers*** (non-paid). About 70% of all fire departments in the United States are volunteer.

In the *United Kingdom* and *Ireland*, the use of part-time firefighters is mostly spread. They are called ***retained firefighters*** who do the same job as full-time firefighters, i.e. conduct fire station coverage, and may be "on call" either 24 or fewer hours a day, due to prior arrangement, and are paid a retaining fee plus additional payment for every incident attended. British fire brigades have a legal obligation to respond not only to fires, but also to any emergency threatening to life and environment.

In *Germany,* ***volunteer*** fire departments are standard – 24,000 fire departments out of the total 25,000 are volunteer ones. There are also 800 ***private*** fire departments protecting large industrial complexes, and 200 ***public*** fire departments.

The largest firefighting force in *France* is ***Volunteer Fire Brigade*** with 190,000 firefighters. The ***Professional Fire Brigade*** numbers 30,000 firefighters. In some towns there's a mixture of professionals and volunteers. In Paris fire brigades are made up of military personnel.

Active Vocabulary

career firefighter – профессиональный пожарный
"call" firefighter – американские пожарные с почасовой оплатой за работу во время выезда по сигналу тревоги
retained firefighter – британские пожарные с повременной оплатой труда
volunteer firefighter – добровольный пожарный
full-time firefighter – пожарный, работающий на полной ставке
part-time firefighter – пожарный, занятый неполный рабочий день
man – укомплектовывать личным составом, снабжать людьми
manning – укомплектование личным составом
fire brigade – пожарная команда; пожарная часть; отряд
fire company – пожарная команда; боевой расчет
fire department – пожарная часть, подразделение
private ~ - частная или объектовая пожарная часть
public ~ - муниципальная пожарная часть
conduct fire station coverage – нести пожарную службу в части

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A
1. британские пожарные с повременной оплатой труда
2. добровольные пожарные
3. американские пожарные с почасовой оплатой за работу во время выезда по сигналу тревоги
4. штатные пожарные

B
1. "call" firefighters
2. retained firefighters
3. volunteers
4. "career" firefighters

II. Following the contents of *Text A* mark the statements below ***True*** or ***False*** and correct false ones.

1. Both retained and "call" firefighters are part-time and part-paid.
2. Retained firefighters are paid for the specific time they are responding to emergencies.
3. "Call" firefighters are compensated for fire station coverage.
4. "Career" firefighters are full-time and full-paid.
5. Volunteer fire brigades are manned with professionals.

III. Complete *Table 10* with **types of fire brigades** existing in the countries listed in the table. Use suggested variants given below.

Table 10

Countries	Types of Fire Brigades
Russia	
USA	
United Kingdom	
Germany	
France	
	volunteers retained firefighters “career” firefighters “call” firefighters

IV. Generalize information about manning of fire brigades of different countries in the following sentences translating the words and phrases in brackets into English.

1. In Russia all firefighters are *(штатные).* They are *(оплачиваемые за круглосуточную работу).*
2. In the USA there’s a mixture of *(штатные пожарные; добровольцы; пожарные с почасовой оплатой за работу во время выезда по сигналу тревоги).*
3. In the UK fire brigades are most commonly manned with *(наемные пожарные с повременной оплатой труда и выполняющие ту же работу, что и штатные пожарные).*
4. In Germany and France the largest firefighting force is *(добровольцы).* It’s interesting that in Paris fire brigades are made up of *(личный состав из числа военных).* The majority of fire departments in Germany are *(частные).*

V. Read *Text C* and compare its information with the contents of *Table 11.* Note incomplete or inaccurate facts given in the table.

Text C

CREW ASSIGNMENT

In *the United States*, firefighters generally work in ***fire companies*** specializing in certain tasks. Most common are engine companies and ladder companies. In addition, large cities frequently staff rescue companies. The number of a crew members depends on jurisdiction and a company type. In large cities, the number may vary from three to six persons.

In *the United Kingdom* firefighters are arranged in ***brigades*** which are divided into stations ranging in size and having at least one pumper. These general purpose engines stations may have specializes vehicles, such as turntable ladders, hydraulic platforms, foam tenders, etc. The number of personnel at a station varies depending on the size of the station and whether it is full-time or retained. As a rule, the crew of one pumper usually consists of five persons.

Table 11

Characteristic Features of Firefighting Crews	USA	UK
1. Units firefighters are arranged in	brigade, station	company
2. Type of a company/brigade	ladder companies	pumper station
3. Numper of personnel in a crew	five	from three to five
4. Facts the number of a crew depends on	jurisdiction and a company size	type of a station (full-time or retained)

VI. Give comparative characteristics of fire units in the USA and UK completing the following sentences with appropriate information of *Text C* and *Table 11*.

1. In the USA firefighters are arranged in …, and in the UK – in … and … .
2. In the USA fire companies may be of the following types: …, and the UK has general purpose stations (pumper stations) which may have specialized vehicles, such as …
3. An American crew numbers …persons, and a British crew usually has … members.
4. The number depends on … in the USA, and on … in the UK.

VII. Read the following jokes and suggest your titles for each of them.

An excited man calls the fire department and says, "Help me, my house is on fire!!!" The fireman says, "Where do you live?" The man replies, "I am too excited, I can't tell you the exact address." The fireman asks, "How do you expect us to get there?" The man replies, "What do you mean *"how"*? The big red truck.".

If the Chief and a Newbie (пожарный-новичок) both jumped out of a burning building at the same time, which one would hit the net first? - The Chief, because the Newbie would have to stop and ask for directions.

Chief Leaps tall buildings in a single bound,
Is more powerful than a locomotive,
Is faster than a speeding bullet,
Walks on water,
Gives policy to God.

Deputy Chief Leaps short buildings in a single bound,
Is more powerful than a switch engine,
Is just as fast as a speeding bullet,
Walks on water if the sea is calm,
Talks with God.

Firefighter Lifts buildings and walks under them,
Kicks locomotives off the tracks,
Catches speeding bullets in his teeth and eats them,
Freezes water with a single glance.
HE IS GOD!!!!!

VIII. Read *Supplementary Texts* №№ *23-32* and discuss new information they give you on firefighting job history and outlook.

UNIT 8

Topic: **FIREFIGHTER PROTECTIVE SUITS**
STRUCTURAL FIRE ENTRY SUIT
PROXIMITY SUIT

Introductory Practice

I. Restore the dictionary form of the following words:

performing, called, kept, wears, stripes, insulated, injured, breathing, identified, densest, areas, heavier

II. Attribute a part of speech to each of the following words and guess their meaning by their roots and word-building elements:

unfavourable, motionless, manually, adjustable, unconscious, reflective, structural, explosive, resistant, protective, wearer, harmful

III. Translate the following words with international roots:

respirator, logo(type), microphone, atmosphere, climatic, apparatus, mask, activate, paramedic, model, camera, extreme, factor, unique, safe, construction, material, car(a)bine

IV. Distinguish the component parts of the words available and guess their meaning:

headband, chinstrap, waterproof, self-protection, flashlight, hands-free, coverall, multi-layer

V. Name both principle and attributive components in the following noun combinations:

eye protection, face shield, ring carbine, 5-finger leather gloves, high-pressure air tank, search and rescue operations, repair work

VI. Divide the following sentences into two categories containing: 1) Infinitives and 2) Infinitive Constructions. Define forms and functions of Infinitives and types of Infinitive Constructions.

1.This suit is kept ready to be put on quickly by “turning out” the pants over the boots.
2. Firefighters are expected to be able to put this suit on in about a minute.
3.Helmets of American firefighters are color coded for the wearer to be quickly identified at a fire scene.

VII. Study the following sentences and divide them into four categories containing: 1) Gerund; 2) Participle I; 3) Participle II; 4) Absolute Participial Construction. Define functions of Participles and Participial Constructions.

1. When fully dressed, a firefighter wears about 32kg of gear (снаряжение) including no additional tools being carried.
2. A firefighter being in trouble, PASS can also be manually activated to call aid.
3. Once activated, the device produces a loud alarm and flashing light.
4. Conditions being not so severe as to require full breathing apparatus, a respirator is used.
5. Being much heavier, this suit permits its users little freedom of movement.
6. Some firefighters wear a belt designed for self-protection and rescuing people.
7. Workers wearing this suit are insulated from harm by unique, safe multi-layer construction, with the outer layer being composed of heat-repellent aluminized material.

VIII. Read *Text A* and study pictures of a firefighter's protective garment. Mind the difference between ***protective garment, personal protective equipment***, and ***gear***.

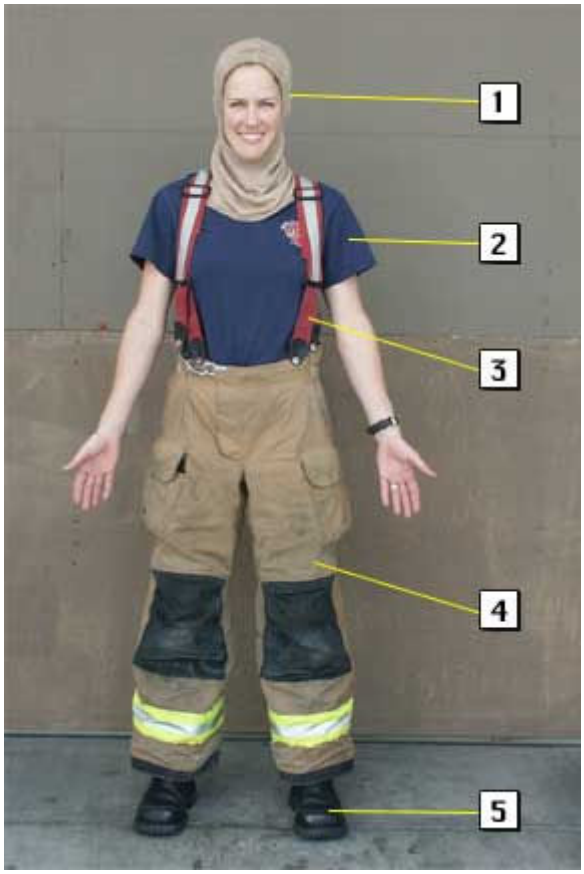
Note: structural fire – пожар зданий, сооружений
turnout – боевая одежда пожарного с выправленными поверх сапог брюками
gear – снаряжение (пожарного)
SCBA (Self-Contained Breathing Apparatus) – автономный изолирующий дыхательный аппарат
logo (logotype) - логотип
chinstrap – подбородочная лямка (защитной каски)
headband – пелерина, тулейка (подвеска защитной каски, подгоняемая под размер головы)
insulated – изолированный; теплоизоляционный

Text A

STRUCTURAL FIRE ENTRY SUIT

Structural fire entry suit is usual protective clothing worn by a firefighter when fighting structural (building) fires, or performing rescues. It is also called a “turnout” because when not in use, it is kept with the pants turned out over the boots. This way, the firefighter simply steps into the boots and pulls the pants up. Firefighters are expected to be able to put on this suit within a minute.

Turnouts consist of ***protective garment*** (a jacket, pants, and braces), ***personal protective equipment*** (leather or rubber heat-resistant boots, a hood, a strong helmet with eye protection, gloves or mitts, and SCBA (Self- Contained Breathing Apparatus), and firefighter’s ***gear*** (a belt, a hook belt/car(a)bine, a bar, an axe, etc.). When fully dressed, a firefighter wears about 32kg of gear, including no additional tools being carried.



1. ***Hood*** covers a firefighter's head and neck protecting ears and other parts that are exposed below a helmet.

2. Cotton ***T-shirt*** with department logo small on chest and large on back.

3. ***Braces*** with reflective stripes connected to the pants at eight points.

4. Insulated ***pants*** with reflective stripes and leather knees and bottoms.

5. Rubber or leather heat-resistant and waterproof ***boots*** protecting firefighter's feet and legs from harmful thermal and mechanical affects.

6. ***Helmet*** with a face shield, chinstrap, goggles and adjustable headband.

7. ***Goggles*** used for eye protection.

8. ***Radio*** with clip-on microphone.

9. ***Ring car(a)bine*** used to clip additional equipment to the coat (*here* non-standard issue). Other suits are provided with a belt designed for self-protection, rescuing people, and wearing a *hook belt* (tool belt) and additional tools, such as bars or axes.

10. ***Flashlight.*** An additional flashlight is often mounted to the brim of a helmet.

11. Insulated 5-finger leather gloves (sometimes 2-finger mitts) for hands protection from cuts and punctures, low and high temperatures and chemical affects.

12. Insulated ***jacket*** with reflective stripes and pockets for keeping radio, gloves, etc.

Active Vocabulary

protective clothing – защитная одежда
fire entry suit – боевая одежда пожарного
garment – (защитная) одежда
personal protective equipment – индивидуальные средства снаряжения
firefighter's gear – боевое снаряжение пожарного
turnout – боевая одежда пожарного с выправленными поверх сапог брюками
jacket – куртка
pants – брюки
braces – подтяжки
hood – подшлемник, капюшон
helmet – шлем
face shield – лицевой щиток, забрало
headband – пелерина, тулейка (подвеска защитной каски, подгоняемая под размер головы)
gloves – перчатки
mitts – рукавицы
hook belt – пожарный пояс с карабином
insulated - изолированный; с теплозащитным покрытием
goggles – защитные очки
face shield – лицевой щиток (маски или пожарной каски), забрало
ring-carbine – карабин - крюк
flashlight – фонарь
heat-resistant – теплостойкий
provide (with) - обеспечивать

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A
1. боевые действия по тушению пожара
2. быть способным надеть костюм за минуту
3. защитная одежда, средства индивидуальной защиты и снаряжение
4. носить дополнительные инструменты

B
1. protective garment, personal protective equipment and gear
2. carry additional tools
3. firefighting
4. be able to put on a suit within a minute

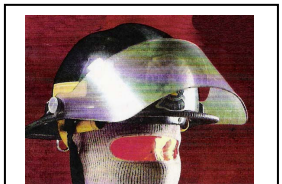
II. Name personal protective equipment pictured below.

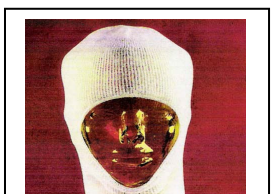

1

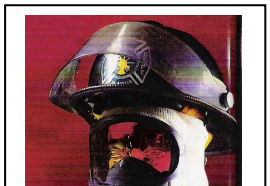

2


3


4







5 **6** **7** **8**

III. Match attributive characteristics from ***B*** for nouns from ***A***.

A	***B***
fire entry suit	strong
garment	reflective
fires	building
boots	self-contained
breathing apparatus	severe
helmet	heat-resistant
headband	structural
atmospheres	insulated
gloves	protective
conditions	adjustable
stripes	explosive

IV. Change words and word combinations in italics for the synonymous ones given below.

1. ***Structural fire entry suit*** is the usual protective clothing worn by a firefighter when fighting ***structural*** fires.
2. Protective garment consists of a ***jacket*** and ***pants***.
3. Belt, ***hook belt***, bars, axes and flashes belong to a firefighter's gear.
4. A personal device which is used for a firefighter's safety and produces an alarm and flashing light, in case of trouble, is a ***personal alert safety system.***

trousers, personal alert device, turnout, coat, building, tool belt

V. Read *Text B* and choose from it the information illustrating the following pictures.

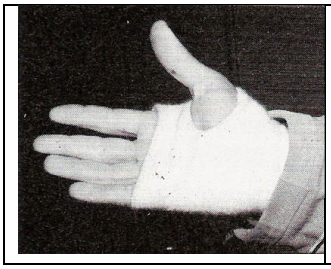
1

2

3

4

5



6

7

Yellow:	Firefighter/Paramedic
Black:	Volunteer Firefighter
Red:	Captain
White:	Chief (Battalion or District)

Note: SCBA (Self-Contained Breathing Apparatus) – автономный изолирующий дыхательный аппарат
PASS (Personal Alert Safety System) - индивидуальное устройство тревожной сигнализации
APR (Air Purifying Respirator) – фильтрующий респиратор

Text B

SCBA (Self-Contained Breathing Apparatus) gear consists of a high-pressure air tank, a mask, and a PASS (Personal Alert Safety System) device.

The ***PASS (Personal Alert Safety System)*** device, also known as a PAD (Personal Alert Device), is used by firefighters in case they get injured or knocked unconscious. Once activated, the PASS device produces a loud alarm and flashing light, if it senses that a firefighter is completely motionless for some period of time (about 30 seconds). This helps other firefighters find and rescue the damaged firefighter. A firefighter being in trouble, PASS can also be manually activated to call aid. This device is integrated into the SCBA pack, and turned on automatically when breathing air is on.

Conditions being not so severe as to require full SCBA, an ***APR (Air Purifying Respirator)*** mask is worn, which is much lighter to wear.

Helmets of American firefighters are color coded for the wearer to be quickly identified at a fire scene. For example, some departments have yellow color for a firefighter or a paramedic, black – for a volunteer, white – for fire station chief.

For special operations firefighters have a special helmet that is worn during search and rescue operations. This ***rescue helmet*** is provided with both goggles and a hands-free light.

There are new models of ***helmets providing full head and face protection*** with respiratory protection, hands-free communications, and vision through even the densest smoke by means of centrally mounted thermal image camera.

The ***wristlet*** that extends over the hand prevents water, embers, and other foreign debris from rolling down inside the sleeves. The wristlet should have a thumbhole to prevent it from sliding up the wrist.

VI. Say what each of the following personal protective equipment consists of, completing the following sentences with appropriate information of *Texts A* and *B*.

1. ***Body protection*** includes … .
2. ***Head, eye and face protection*** consists of … .
3. ***Respiratory protection*** is provided with … .

4. ***Hand protection*** is achieved by: … .
5. ***Foot and leg protection*** is guaranteed by … .

VII. Name ***personal protective equipment*** designed for suggested purposes using the following model:

(***Personal protective equipment***) is/are used for … .

1. eye protection from flying debris, smoke, fluids, and objects that can get under a face shield;
2. foot and leg protection from harmful thermal and mechanical affects;
3. hand protection from cuts and punctures, low and high temperatures, chemical affects;
4. head protection from high temperatures effects and open flames;
5. calling aid in case of trouble;
6. safe breathing in unfavourable conditions.

VIII. Generalize the information of *Texts A* and *B* completing the following statements with suitable versions given below.

1. SCBA stands for … and is used for … protection.
2. During search and rescue operations a firefighter wears … provided with goggles and hands-free light.
3. To be quickly identified at a fire scene firefighters wear … helmets.
4. In less severe conditions a firefighter uses … which is much lighter than a self-contained breathing apparatus.
5. … and … are used to clip additional tolls, such as … and … .
6. A high upper part of protective gloves is called a … .
7. T-shirt has a … - a fire department emblem.

bars, rescue helmet, logo, ring carbine, cuff, self-contained breathing apparatus, color coded, axes, respiratory, hook belt, air purifying respirator

IX. Read *Text C* and mark the difference of the ***proximity suit*** from the ***turnout***.

Note: proximity suit – теплозащитный костюм с отражательным покрытием
extreme radiant heat – интенсивное тепловое излучение
aluminized – алюминизированный
accessories – принадлежности, приспособления
conventional – стандартный, обычного типа
heat-repellent - теплоотражательный
moisture and steam barrier – водно-паровой барьер
coverall – комбинезон
glass – смотровое стекло
cuffs - краги

Text C

PROXIMITY SUIT

When firefighters are exposed to extreme radiant heat situations, high temperatures, unfavorable climatic and weather conditions and harmful fire factors, aluminized gear and accessories provide protection not available with conventional structural fire suits. Workers wearing this suit are insulated from harm by unique, safe multi-layer construction, with the outer layer being composed of heat-repellent aluminized material.

An additional moisture and steam barrier lining provides protection in areas where exposure to hot liquids, steam, or hot vapor is a possibility. Being much heavier than structural fire clothing, proximity suits permit their users little freedom of movement. That's why they are preferably used for maintenance and repair work in high heat areas, and rarely for active firefighting. The time for putting this suit on is three minutes.

Present proximity suits are available in coverall, or coat and pants styles, and with SCBA, if required. Both styles consist of hood with a glass or a helmet with heat-reflective face shield, coat and pants (or coverall), 3-or-5-finger gloves (often with cuffs), and boots.

Active Vocabulary

proximity suit – теплозащитный костюм с отражательным покрытием
expose – подвергать
exposure – воздействие
radiant heat – тепловое излучение
unfavorable climatic and weather conditions – неблагоприятные климатические и погодные условия
aluminized material – алюминизированный материал
accessories – принадлежности, приспособления
conventional – стандартный, обычного типа
heat-repellent - теплоотражательный
compose – составлять
vapor – пар
moisture and heat barrier lining– прокладка, создающая водную и паровую преграду
maintenance – техническое обслуживание
repair work – ремонтные работы
coverall – комбинезон
permit little freedom of movement – позволять малую свободу движения

Vocabulary Practice

I. Characterize both a) ***structural fire entry suit*** and b) ***proximity suit*** choosing a proper model and characteristics available .

a) ***Structural fire entry suit*** is/has … .
b) ***Proximity suit*** is/has … .

Characteristics:

1. *designed for active firefighting;*
2. *additional moisture and heat barrier lining;*
3. *a lighter weight;*
4. *the outer layer composed of heat-repellent aluminized material;*
5. *used in extreme radiant situations;*
6. *designed preferably for maintenance and repair work;*
7. *mostly available in coverall style.*

II. Study the characteristics given below *Table 12* and fill in the columns of the table for ***common features*** of *a structural fire entry suit* and *a proximity suit* and ***differences*** between them.

Table 12

Type of Suit	Common Features	Differences
1. Structural Fire Entry Suit		
2. Proximity Suit		

Characteristics:

consist(s) of protective clothing and personal protective equipment (head and face, hands, feet and legs protection);
has lighter weight;
used in active firefighting;
provided with respiratory protection;
the time for putting the suit on is three minutes;
used in extremely radiant heat situations;
designed for maintenance and repair work;
comes only in coat and pants style;
has heat-repellent (aluminized) outer material;
has heavier weight;
comes mostly in overall style and has a hood with a glass;
has a heat-resistant outer layer;
the time for putting the suit on is one minute.

III. Give generalized characteristics of a firefighter's protective garment and personal protective equipment in the following sentences using the information of *Texts A, B and C.* Translate words and phrases in brackets into English.

1. There are different types of *(защитных костюмов пожарных).*
2. For fighting structural fires a firefighter wears *(боевой пожарный костюм, используемый для тушения пожаров зданий)* called a turnout.
3.To extinguish fires in *(интенсивное тепловое излучение), (теплоотражательный костюм)* with heat-repellent aluminized *(наружный слой)* is used.
4. A turnout is *(легче)* and designed for *(активные боевые действия по тушению пожара).*
5. A proximity suit being much *(тяжелее)* is preferably used for *(техническое обслуживание)* and *(ремонтные работы)* in high heat areas.
6. Both suits consist of *(защитной одежды*) and (*индивидуальные средства защиты).*
7. Protective garment includes (*куртка)* and (*брюки)* or (*комбинезон*).
8. Head and face protection is achieved by (*подшлемник*), a helmet with (*лицевой щиток*) and (*пелерина*), (*защитные очки*) or (*капюшон*) with (*смотровое стекло*).
9. Rubber or leather (*теплостойкие)* boots protect firefighter's feet and legs.
10. (*Теплоизоляционный*) 3-or-5-finger (*перчатки*) or 2-finger (*рукавицы*) often with *(краги*) are designed for hand protection.
11. *(Защита органов дыхания*) is provided with *(автономный изолирующий дыхательный аппарат)* or (*фильтрующий респиратор*) which is used in (*менее суровые условия).*
12. Designed for self-protection, *(индивидуальное устройство тревожной сигнализации)* is integrated with a *(автономный изолирующий дыхательный аппарат*) pack and is activated in case of trouble.

IV. Study the following pictures of protective clothing and say in what cases they are worn finding appropriate information in *Supplementary Texts* №№ 33-36 .

Station Wear

1 Visored cap (optional wear).

2 Short sleeve uniform shirt.

3 Badge. Silver for firefighters, gold trimmed for officers.

4 Leather belt. Department standard is a plain silver buckle and untooled black leather.

5 Multitool (common, but not standard issue - one of many personal tools that may be carried).

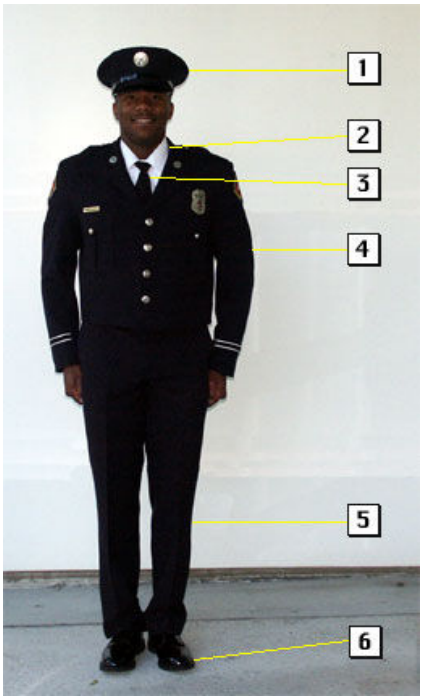
6 Radio receiver (Volunteers only).

7 Pants.

8 Zip-up steel-toed boots.

Class A Uniform

1 Dark blue cap with emblem.



1 Dark blue cap with emblem.

2 White shirt.

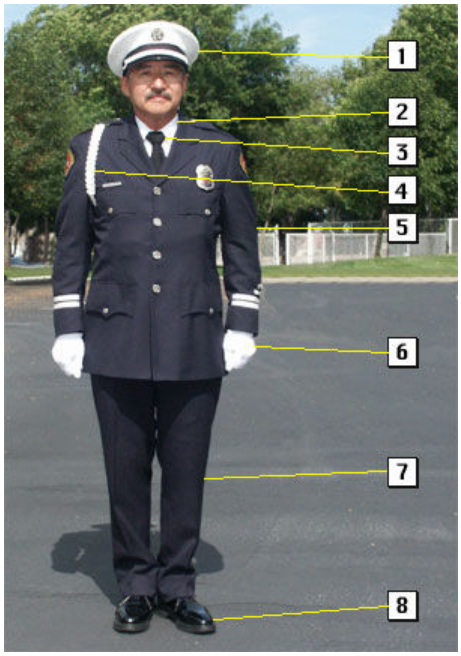
3 Black tie.

4 Dark blue wool, single breasted, four button short waist uniform jacket with silver lapel brass, department shoulder patches and epaulets, worn with badge and nametag. Stripes and pips on sleeve indicate rank and years of service.

5 Dark blue wool trousers.

6 Black leather shoes.

Honor Guard Uniform



1 White cap with emblem.

2 White shirt.

3 Black tie.

4 Shoulder brassard.

5 Dark blue wool, four button, single breasted uniform coat with department shoulder patches and epaulets, worn with badge and nametag. Stripes and pips on sleeve indicate rank and years of service.

6 White gloves.

7 Dark blue wool trousers.

8 Leather uniform shoes.

Hazmat Gear

Crash Rescue Gear

Topic: **FIRE PREVENTION**
AUTOMATIC DETECTION AND SUPPRESSION OF FIRE
WHY PEOPLE DON'T SURVIVE IN FIRES

Introductory Practice

I. Translate the following groups of root words paying attention to the formation means of various parts of speech:

prevent – prevention – preventive
detect – detection – detective
suppress – suppression –suppressant
reduce – reduction
sense – sensitive –sensitiveness
effect – effective –effectiveness
survive – survival
hazard – hazardous
possess – possession – possessive
respond – response – responsible – responsibility
promote – promotion

II. Attribute a part of speech to each of the following words and guess their meaning by their roots and word-building elements:

predetermined, overloaded, carelessly, belongings, disabled, responsibility

III. Translate the following words with international roots:

mechanism, electronic, electromechanical, klaxon, evacuation, activate, specific, cause, spray, accumulate, potential, minimal, ignore

IV. Name both principle and attributive components in the following noun combinations:

fire prevention, fire safety education, fire alarm system, heat detector, heat level, smoke detector, water damage, property damage

V. Identify tense and voice of the *Perfect* verbal forms and give reasons for their usage in the following sentences.

1. The effectiveness of these systems has been proved in data accumulated throughout the world.
2. Since 1990 fire alarm systems have changed greatly.
3. In many cases the detector has been disabled.

4. Sometimes people having a fire extinguisher start learning how to use it only when a fire has already broken out.

VI. Divide the following sentences into two categories containing: 1) Infinitives and 2) Infinitive Constructions. Define forms and functions of Infinitives and types of Infinitive Constructions.

1. To reduce hazardous affects of fire, the most basis mechanism is an alarm system.
2. This threat (caused by a sprinkler system) is considered to be minimal.
3. Everyone is to experience a fire at least once in his life.

VII. Study the following sentences and define types of asyndetical (without a conjunction) subordinate clauses in them.

1. Heat-sensitive devices are activated in case a specific temperature is reached.
2. Some people underestimate serious damages a fire causes.
3. People think they have more time to get out (in case of fire).

VIII. Attribute a part of speech to each of the *–ing forms (Participle I, Gerund, Verbal Noun)* in the following sentences.

1. This device warns people in a building of a possible emergency requiring evacuation.
2. People go back into the house to get belongings.
3. People stand up in heat and smoke instead of crawling.

IX. Read Text A and mind the designation of the ***devices for automatic detection and suppression of fire.***

Note: promotion of fire safety education – распространение обучения пожарной безопасности
(fire) speaker – пожарный речевой извещатель
audible alarm – звуковая сигнализация
alert – подавать сигнал тревоги, предупреждать об опасности
hearing-impaired (people) – люди с нарушением слуха
trigger – приводить в действие
fixed firefighting installation – стационарная установка пожаротушения
coverage area – зона действия установки пожаротушения
contain a fire – сдержать пожар
sprinkle – брызгать, моросить

Text A

AUTOMATIC DETECTION AND SUPPRESSION OF FIRE

Fire prevention includes automatic detection and suppression of fires, and promotion of fire safety education. To reduce hazardous effects of a fire, the most basic mechanism is an ***alarm system***. A fire alarm is an electromechanical or electronic bell, klaxon, speaker, or other device that warns people in a building of a possible fire or other emergency requiring evacuation. In the United States, with the introduction of the "Americans with Disabilities Act" of 1990, fire alarm systems have changed greatly. Along with an audible alarm, there appeared fire alarm appliances with flashing lights to alert the deaf or hearing-impaired.

Fire alarms may be triggered automatically by heat detectors, smoke detectors, and sprinkler systems. ***Heat-sensitive devices*** are activated in case a specific temperature is reached, and ***smoke detectors*** sense changes caused by the presence of smoke.

Many public buildings are equipped with fixed fire-fighting installations - ***automatic sprinkler systems*** which release a spray of water on an affected area if a fire is detected. These systems consist of overhead pipes provided with sprinkler heads throughout the coverage area. Each sprinkler head is activated independently when the predetermined heat level is reached.

The effectiveness of these systems has been proved in data accumulated throughout the world: in buildings protected by this equipment the sprinkler system could extinguish fires in 65 % of the cases, and contain fires, until other firefighting measures could be taken, in 32%. A major problem with sprinkler systems is the potential for water damage. But this threat is considered to be minimal in comparison with the damage caused by a fire.

Active Vocabulary

fire prevention – пожарная профилактика
detect - обнаружить
detection - обнаружение
suppression of fire – подавление (тушение) пожара
promotion of fire safety education – распространение обучения пожарной безопасности
alarm – тревожная сигнализация
(fire) speaker – пожарный речевой извещатель
warn - предупреждать
audible alarm – звуковая сигнализация
alert – подавать сигнал тревоги, предупреждать об опасности

trigger – приводить в действие
heat detector – тепловой извещатель
smoke detector – дымовой извещатель
sprinkler – спринклерный ороситель
sprinkler head – спринклерная головка
activate – приводить в действие
sense – чувствовать
release a spray of water – выпускать распыленную струю воды
affected area – зона поражения
fixed firefighting installation – стационарная установка пожаротушения
coverage area – зона действия установки пожаротушения
contain a fire – сдержать пожар

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A
1. уменьшить опасное воздействие пожара
2. предупредить людей с нарушением слуха о возможном пожаре
3. достичь уровня теплового воздействия
4. принять меры по тушению пожара

B
1. reach a heat level
2. take firefighting measures
3. alert hearing-impaired people of a possible fire
4. reduce hazardous effect of a fire

II. Find an "alien" word in each set.

1. warn, alert, prevent
2. extinguish, detect, suppress
3. appliance, installation, mechanism, device
4. sense, detect, cause

III. Mark the following statements ***True*** or ***False*** and correct false ones.

1. Automatic detection and suppression of a fire enters fire prevention.
2. An alarm system is always an audible appliance.
3. Heat and smoke detectors are integrated into a fire alarm system.
4. Smoke detectors are activated when the predetermined heat level is reached.
5. A heat-sensitive device detects the presence of smoke in the air.
6. Fire alarm systems trigger heat and smoke detectors.
7. Sprinkler systems are fixed firefighting installations.
8. A sprinkler is a fire speaker alerting people of a fire danger.
9. Sprinkler systems are activated simultaneously releasing a stream of water on an affected area.
10. Potential for water damage with sprinkler systems is considered to be very great.

IV. Fill in the columns of *Table 13* for the ***purpose*** and ***way of activation*** of each of

the *devices for automatic detection and suppression of fire*. Use suggested versions below the table.

Table 13

Devices for Automatic Detection and Suppression of Fire	Purpose	Way of Activation
Alarm System		
Heat Detector		
Smoke Detector		
Sprinkler System		
	detects and suppresses a fire detects a fire alerts people of a fire danger	is activated in case a specific temperature is reached; is triggered by heat and smoke detectors; is activated when senses smoke in the air.

V. Generalize the information concerning devices for automatic detection and suppression of fire completing the following sentences with appropriate phrases given below.

1. ***Automatic devices for fire detection and suppression*** are … .
2. ***Alarm system*** is triggered automatically by heat and smoke detectors and produces an … or … for the deaf or hearing-impaired.
3. … are designed to be activated in case a specific temperature is reached.
4. ***Smoke detectors*** detect … .
5. ***Sprinkler system*** is a … which consists of … and is activated when … .

presence of smoke in the air, heat-sensitive devices, audible signal, sprinkler systems, fixed firefighting installation, heat and smoke detectors, overhead pipes with sprinkler heads, flashing light, the predetermined heat level is reached, fire alarm system

VI. Read *Text B* and say what component part of fire prevention it deals with.

Note: possessions – имущество
catch fire – загореться
outlet – источник питания

Text B

WHY PEOPLE DON'T SURVIVE IN FIRES

Some people underestimate serious damages a fire causes. In reality, fire is hot, dark and fast. Temperatures may reach over 1200 degrees Fahrenheit (about 650 degrees Centigrade) at the ceiling in a typical house fire. Fire (heat, smoke and gas) may cover the house within less than 4-5 minutes.

Statistics data show that everyone is to experience a fire at least once in his life. Moreover, every fourth person experiences a serious fire that causes major property damage, injury or even death. Promotion of fire safety education is vitally important

and results in explaining ***why people sometimes don't survive in fires***. Below there are some of these fatal causes.

Lack of smoke detectors

Over 90% of all American homes have smoke detectors. Nevertheless, in half of all fires and fire fatalities, lack of a working smoke detector is the cause of a fire. In many cases, the battery is missing or the detector has been disabled.

Human behavior

- People think they have more time to get out (put on clothes, gather possessions, etc.).
- People stand up in heat and smoke instead of crawling low.
- Sometimes people having a fire extinguisher start learning how to use it only when a fire has already broken out.
- People try to put out a fire that quickly gets out of control.
- There is no outside meeting place. This results in confusion as to who's in and who's out of the building.
- People go back into the house to get belongings and pets.
- Some people ignore fire alarms and some day may not respond to a real emergency.
- Many people don't know what to do if their clothes catch fire.
- Carelessly scattered cigarettes are considered one of the leading causes of fire deaths in the USA.
- Some parents don't teach their children that matches and lighters are not toys.
- Cooking areas are often full of combustibles.
- Sometimes electrical outlets are kept overloaded.

The above causes keep proving the main thing in fire prevention and survival – the key for safety lies in ***personal responsibility***.

Active Vocabulary

survive – выжить
survival – выживание
property damage – ущерб, нанесенный имуществу
cause – причина; являться причиной, причинять
experience a fire – испытать пожар
injury – травма; повреждение
death – смерть
lack – недостаток
possessions – имущество
belongings – принадлежности; вещи
crawl – ползти
catch fire – загореться
matches and lighters –спички и сигареты
cooking area – место для приготовления пищи
outlet – выходное отверстие; источник питания

overload – перегружать
responsibility – ответственность

Vocabulary Practice

I. Express the purposes of fire safety education completing the following sentences with suitable information given below.

1. The purpose of fire safety education is to teach people … .
2. Fire safety education reminds people that … .

1. *fire if hot, dark and fast;*
2. *how to prevent firers;*
3. *a fire causes property damage, injury and even death;*
4. *how to survive in fires;*
5. *the key for fire safety lies in personal responsibility.*

II. Study the following fire safety (before-the-fire) rules and mark the tips (советы) to be followed to avoid each of the fatal causes given in *Text B*.

1. Keep ***matches and lighters*** away from children and teach them that they are not toys, but tools.
2. Work out an ***escape plan*** and practice it.
3. Install and maintain ***smoke detectors***.
4. Don't overload ***electrical outlets***.
5. ***Do not try to fight a fire*** if you have no appropriate equipment. If you feel that you can't extinguish a fire by yourself, ***get outside*** very quickly and ***call the fire department***.
6. If your ***clothes catch fire***, do not run. Use *a "Stop, drop and roll" rule*. ***Stop*** where you are, ***drop*** to the floor, cover you face with your hands and ***roll*** over and over to smother the flames.
7. In case of fire, ***don't stop for anything***. Remember that fire is very fast and gives you no time to gather your possessions.
8. Keep ***cooking areas*** clear of combustibles.
9. In case of fire, ***crawl*** low under smoke keeping an exit at your back.
10. ***Don't try to go back*** into the house for your belongings and pets.
11. ***Never smoke in bed*** and always check your place for smoldering cigarettes.
12. On hearing an ***alarm signal***, respond to it without hesitation (колебание).
13. If you have a fire extinguisher, ***learn how to use it before a fire starts***, and inspect it monthly.

III. List fire prevention rules completing the following model with suggested versions given below.

To prevent a fire you …

1. have to work and practice … .
2. must keep … away from children.
3. mustn't overload … .
4. have to keep cooking areas clear of … .
5. mustn't … in bed.
6. must always check your place for … .
7. have to install and maintain … .
8. must learn how to use …

smoke detectors, combustibles, matches and lighters, an escape plan, a fire fighter, *electric outlets, smoldering cigarettes, smoke*

IV. Complete the following fire survival rules with all suitable versions available.

1. If a fire breaks out in your home, … .
   1. *try to fight it by yourself;*
   2. *get out fast;*
   3. *look for an appropriate firefighting equipment;*
   4. *call the fire department;*
   5. *try to rescue possessions and pets.*
2. If you must get through smoke to escape, … .
   1. *keep low with your face to an exit;*
   2. *stand up and move covering your mouth and nose with a damp cloth;*
   3. *crawl on your hands and knees;*
   4. *keep your back to an exit;*
   5. *try to cover your mouth and nose with a damp cloth.*
3. If your clothes catches fire, … .
   1. *run out very quickly;*
   2. *try to put out the flame;*
   3. *drop to the ground;*
   4. *try to take off the burning clothing;*
   5. *roll over to smother the flame, you face being covered with your hands.*

V. Generalize before-the-fire and fire survival rules using the information of *Text B* and that of *Tasks I-IV*.

1. The ***purpose of fire safety education*** is … .
2. The most important ***fire prevention rules*** are … .
3. ***If a fire breaks out*** in your home, … .
4. ***If you must get through smoke*** to escape, … .
5. ***If you clothes catches fire***, … .
6. Everybody should remember that the ***key for fire safety*** lies in … .

VI. Read *Supplementary Texts* №№ 37-42 and discuss new ideas they give you on the history of devices for automatic detection and suppression development, and fire safety advices.

UNIT 10

Topic: US FIRE PREVENTION CAMPAIGNS AND THEIR SYMBOLS

US FIRE PREVENTION PROGRAMS
SPARKY SYMBOL AND PRESENT ARSON DOGS

Introductory Practice

I. Arrange the following words alphabetically and translate them using a dictionary:

slogan, spread, establish, observe, expand, recognition, anniversary, participation, proclaim, appreciation, mascot, breed, stable, message, retriever

II. Restore the dictionary form of the following words:

established, biggest, occurred, milking, destroyed, festivities, rendered, performing, introduced, riding, expresses

III. Translate the following words with international roots:

test, campaign, partner, popular, legend, term, inform, sponsor, priority, symbol, associate, intelligent, paraffin, diesel

IV. Translate the following groups of root words paying attention to the formation means of various parts of speech:

inform - information
ignite – ignition – ignitable
importance – important
endure – endurance
accelerate – acceleration – accelerator - accelerant

V. Attribute a part of speech to each of the following words and guess their meaning by their roots and word-building elements:

homeless, commemorate, replace, waterfowl, lighter, eyesight, enable, remind

VI. Name both principle and attributive components in the following noun combinations:

Fire Prevention Week, emergency volunteer, Fire Service Recognition Day, forest fire prevention, baby bear, fire prevention campaign, fire dog, horse stable, firefighter partner, watch dog, cigarette lighter fuel

VII. Render the following words into Russian giving for each of them two variants of translation (noun/verb, noun/adjective):

nickname, breed, guide, milk, spread, service, individual, professional

VIII. Define the functions of the verbs ”to make” and “to have” in the following sentences.

1. Today NFPA continues *to make* Fire Prevention Week a priority.
2. The fire *made* people thinking in terms of fire prevention.
3. A different breed of dog called a Labrador Retriever *has* become popular for use by American Fire investigators.
4. The dogs *have* webbed feet for swimming.

IX. Identify tense and voice of the verbal forms and give reasons for their usage in the following sentences.

1. Mrs. Catherine O’Leary was milking her cow when the animal kicked over a lamp.
2. The Association decided to observe the 40th anniversary of the Great Chicago Fire in the way that would keep the public informed of fire prevention.
3. For many years Dalmatians have been associated with fire service.
4. After motorized cars and fire engines had replaced horses and carriages, Dalmatians moved into fire stations and enjoyed riding atop the engine.
5. The dogs are trained to search any remaining traces of ignitable liquids (accelerants) which have been used to accelerate a fire.

X. Study the following sentences and define functions of *–ing* forms and Participles II in the following sentences.

1. The Saturday ending Fire Prevention Week is Fire Service Recognition Day, which was proclaimed in 1977.
2. Smoky Bear was found alone after devastating wildfire burned through New Mexico in 1950.
3. The saved bear was sent to the National Zoo in Washington, DC, becoming the living symbol of Smoky Bear.
4. The symbol of the annually held Fire Prevention Week is Sparky the Fire Dog.
5. Dalmatians were used as hunting and performing dogs.

XI. Read *Text A* and note the ways the USA and Canada ***do their public fire prevention work.***

Note: Fire Marshals Association of North America (FMANA) – Ассоциация начальников пожарных подразделений Северной Америки
barn – коровник
rather than – а не
Smoky Bear – дымчатый медведь

Text A

US FIRE PREVENTION PROGRAMS

“Test your Detector for Life” is one of the main slogans of ***Fire Prevention Week,*** which was established to commemorate one of the biggest fires in the last few

centuries. It occurred on October 9, 1871 in Chicago and killed more than 250 people, left 100,000 homeless, destroyed more than 17,400 structures.

According to a popular legend, Mrs. Catherine O'Leary was milking her cow when the animal kicked over a lamp, setting the barn on fire and starting the spread of one of the biggest fires in history.

The fire made people thinking in terms of fire prevention rather than only fire-fighting. That's why, the Fire Marshals Association of North America (FMANA), now part of the National Fire Protection Association (NFPA), decided to observe the 40th anniversary of the Great Chicago Fire not with festivities, but in the way that would remind people of the importance of fire prevention and sponsored the first ***Fire Prevention Day*** (1911) which expanded to ***Fire Prevention Week*** in 1922. Fire Prevention Week covers a Sunday-through-Saturday period including the October 9th anniversary date.

Today NFPA continues to make Fire Prevention Week a priority and hopes for the participation of fire professionals, emergency volunteers, and other individuals working to reduce the risk of fire.

In Canada, Fire Prevention Week was introduced in 1923. The Saturday ending the Week is ***Fire Service Recognition Day***, which was proclaimed in 1977. It expresses appreciation for the many services rendered by members of the Canadian fire service.

Another American fire prevention program is the ***Smoky Bear campaign***, which is aimed at forest fire prevention. Smoky Bear is an actual baby black bear that was found alone after devastating wildfire burned through New Mexico in 1950. The saved bear was sent to the National Zoo in Washington, DC, becoming the living symbol of Smoky Bear.

Active Vocabulary

Fire Prevention Week – Неделя пожарной безопасности
Fire Prevention Day – День пожарной безопасности
Fire Service Recognition Day – День пожарной охраны
slogan - лозунг
establish – основывать, учреждать; устанавливать
commemorate – служить напоминанием; отмечать (событие)
observe the anniversary – отмечать годовщину

remind smb. of smth. – напоминать кому-либо о чем-либо
importance - важность
cover a period – охватывать период
introduce - вводить
proclaim - провозглашать
express appreciation for – выразить благодарность за
render services – оказывать услуги
forest fire prevention – предотвращение лесных пожаров
wildfire – растительный пожар
become the living symbol – стать живым символом

Vocabulary Practice

I. Match Russian word combinations from ***A*** for English ones from ***B***.

A
1. положить начало распространению пожара
2. опустошительный растительный пожар
3. опрокинуть лампу ударом ноги
4. отметить годовщину весельем (торжествами)

B
1. kick over a lamp
2. observe the anniversary with festivities
3. start the spread of fire
4. devastating wildfire

II. Find an "alien" word in each set.

1. introduce, cover, establish, proclaim
2. celebrate, observe, remind
3. wildfire, forest fire, structure fire
4. recognition, participation, appreciation

III. Following the contents of *Text A* match verbs from ***A*** for all possible appropriate words and word combinations from ***B.***

A	**B**
establish	fire
render	a period
commemorate	the risk of fire
set on	Fire Prevention Week
observe	appreciation for
cover	services
reduce	the anniversary
proclaim	one of the biggest fires
express	Fire Service Recognition Day
introduce	Fire Prevention Day

IV. Choose the most suitable ending from the versions given to complete each of the following definitions.

1. ***Fire Prevention Week*** is … .
2. ***Fire Service Recognition Day*** is … .
3. ***Smoky Bear*** is … .
4. ***Smoky Bear campaign*** is … .

1. an actual black bear saved after the New Mexico wildfire of 1950.
2. NFPA fire prevention campaign commemorating the Great Chicago Fire.
3. a campaign aimed at forest fire prevention.
4. the Canadian Fire Service Day.

V. Mark the following statements ***True*** or ***False*** and correct false ones.

1. The main slogan of Smoky Bear campaign is "Test your Detector for Life".
2. Fire Prevention Week was established to commemorate the Great Fire of London of 1622.
3. NFPA has been the main sponsor of Fire Prevention Week.
4. The Great Chicago Fire anniversary is observed with great festivities.
5. Fire Service Recognition Day introduced in Canada in 1923 is celebrated on Fire Prevention Week Sunday.
6. Smoky Bear campaign commemorates the New Mexico wildfire and is aimed at forest fire prevention.

VI. Summarize the information of *Text A* completing the following statements with appropriate information.
1. Fire Prevention Day was introduced in … to commemorate … that occurred in …
2. In … Fire Prevention Day expanded to Fire Prevention Week covering a week period that includes … .
3. Making Fire Prevention Week a priority … is its official sponsor.
4. The aim of the Great Chicago Fire observation is to remind people of the importance of … .
5. … proclaimed in 1977 expresses appreciation for Canadian fire service.
6. Smoky Bear is a symbol of … fire prevention.

VII. Read *Text B* and mark the differences between ***fire dogs breeds.***

Note: sparky – *(жарг.)* пожарный, отличающийся напористостью и отвагой; добровольный помощник пожарных, энтузиаст пожарного дела
Sparky the Fire Dog – пожарная собака Спарки («Искорка»), выбранная Национальной Ассоциацией пожарной охраны США в качестве символа пропаганды пожарно-профилактических мероприятий
fire house – здание пожарной части
coach dog – каретная собака, сопровождавшая конные экипажи
watch dog – сторожевой пес
spot – узнать; заметить; опознать

Text B

SPARKY SYMBOL AND PRESENT ARSON DOGS

The symbol of the USA fire prevention campaign and annually held Fire Prevention Week is *Sparky the Fire Dog*. Besides, many American fire houses have the Dalmatian as their mascot because for many years these dogs have been associated with fire service. Throughout the history Dalmatians were used for serious work: they carried secret messages during World War II, worked as shepherds, hunting and performing dogs. The dogs are not only intelligent, they also have an excellent memory. Their speed, endurance and lack for fear for horses enabled them to become superb "coach dogs" first used in the 17th–19th centuries in England, Scotland and Wales.

At the end of the 19th century Dalmatians were introduced to America. They received the nickname "fire dog" as they lived in the stables with the horses that pulled pumpers to the site of fire, and were trained to run in front of the engines to help clear a path and guide horses and firefighters to fires very quickly. At that time Dalmatians were also used to chase rats out of the fire stations and horse stables.

After motorized cars and fire engines had replaced horses and carriages, Dalmatians moved into fire stations and enjoyed riding atop the engine. Today, they are mostly chosen by many firefighters as pets. But in some fire stations Dalmatians are still on duty acting as firefighters partners and watch dogs protecting equipment.

A different breed of dog called a Labrador Retriever or "lab" has become popular for use by American fire investigators. "Labs" were originally bred for hunting waterfowl birds such as ducks and geese. These dogs have webbed feet for swimming and keen eyesight for spotting birds in the air. "Labs" are trained to search any remaining traces of ignitable liquids (accelerants) which have been used to accelerate a fire, such as petrol, diesel, paraffin, cigarette lighter fuel and others.

Active Vocabulary

arson dog – пожарная собака
fire house - здание пожарной части
mascot – талисман
intelligent – умный
excellent memory – великолепная память
speed – скорость
lack for fear (for smth.) – отсутствие страха (к чему-либо)
enable – давать возможность (что-либо сделать)
coach dog – каретная собака, сопровождавшая конные экипажи
horse stable – конюшня

pet – любимое животное
watch dog – сторожевой пес
breed – порода; разводить, воспитывать
waterfowl – водяная дичь
keen eyesight – острое зрение
search – искать
accelerate a fire – усилить пожар (его размах и/или интенсивность)
accelerant – активатор; катализатор
ignitable – воспламеняющийся, воспламеняемый

Vocabulary Practice

I. Find in *Text B* definitions for the following dogs:

1. ***fire*** dog
2. ***coach*** dog
3. ***watch*** dog
4. ***Sparky*** the Fire Dog

II. Match the characteristics below either to ***Dalmatians*** or ***Labradors***. Use one of the following models:

1. Dalmatians/Labradors have … .
2. Dalmatians/Labradors are … .
3. Dalmatians/Labradors can work as … .

intelligent, shepherds, accelerants searchers used by fire investigators, lack for fear for horses, excellent memory, webbed feet for swimming, good circus performers, coach dogs, high speed, keen eyesight, endurance

III. Study *Table 14* and make up appropriate statements characterizing the abilities of Labradors and Dalmatians.

Table 14

Keen eyesight	enable(s)	Labradors	to search accelerants.
Lack for fear for horses			to swim and hunt waterfowl birds.
A keen sense of smell		Dalmatians	to spot birds in the air.
Webbed feet			to become coach dogs.

IV. Study the following statements and complete the gaps in them with appropriate dog breed (Dalmatians or Labradors).

1. Investigators are very proud of their partners - … - and highly appreciate their abilities saying ”This nose knows!”
2. … would run alongside the coach or behind the rear of the horses.
3. … are rewarded not with money but with play. The toys they play with have the

smell of the materials that hey have to search.
4. … are physically very strong and able to run long distances.
5. … have a calming effect on the horses and make them feel comfortable in their stables.
6. … are trained to detect gasoline and other accelerants used by arsonist.

V. Read the following information about Labradors and render it into Russian. Change words and word combinations in bold type for the synonymous ones suggested below.

Labradors are good ***hunting dogs***. Their keen ***sense of smell*** is used in ***fire*** investigation. Labradors receive special training to ***do*** their important job. Their school training ***takes*** about eight weeks. Their test at the finishing school is to ***find*** samples of the materials that can start a fire. Besides, they are to ***sniff out*** the smallest amount of material that ***caused*** the fire. Labradors are on ***duty*** twenty-four hours a day. Sometimes they may ***ride*** in boats or helicopters with their ***investigators*** to the ***site of fire*.**
detect, lasts, arson, accelerated, handlers, retrievers, scene of fire, *sniffing, perform, search, call, get*

VI. Have fun reading the following interesting facts about Dalmatians and the joke about their duties.

Do you know that

- Dalmatians are born with pure white coats – they "grow" their spots as they get older;
- they have spots not only on their coats, but on their tongues and paws, as well;
- Dalmatians have great ears and hear about four times better than humans;
- Having excellent eyesight they are color-blind, i.e. they see things in black and white?

"The Fireman's Doggy"

A nursery school teacher was delivering a station wagon full of kids home one day when a fire truck zoomed past. Sitting in the front seat of the fire truck was a Dalmatian dog. The children began discussing the dog's duties. "They use him to keep crowds back," said one youngster. "No," said another, "he's just for good luck."

A third child brought the argument to a close. "They use the dogs," she said firmly, "to find the fire hydrant."

VII. Read *Supplementary Texts* №№ 43-46 and discuss new ideas they give you on the topic.

CASE EXAMPLES FOR WRITING SUMMARIES OF KEY ISSUES

According to the United States Fire Administration (USFA) reports, arson is the number one cause of all fires in the country. More than fifty percent of arsons are committed by juveniles.

All fires set by juveniles need to be taken seriously because they often include deliberate destruction of property which sometimes results in casualties. As children get older, their firesetting tends to be directed away from their own homes and involves outdoor areas such as garbage dumpsters and parks, occupied dwellings or schools, abandoned houses and buildings, automobiles, etc.

Although it appears that unoccupied buildings and outdoor areas are at greatest risk for juvenile arson, a significant amount of fires are set in occupied structures, indicating that intentionally-set fires can have very serious consequences. Juveniles who set fires to bring attention to difficult family circumstances are more likely to target occupied structures like their homes or schools. Gang-related and revenge fires, on the other hand, occur more often in abandoned buildings often used as drug houses or places to meet.

Very often, juveniles begin with small insignificant fires, but "BIG FIRES START SMALL"! Publishing case examples with the results of fire investigation in fire magazines, USFA hopes that this will result in "lessons learned".

Here are some case examples from the USFA "Technical Report Series". Try to analyze each of them and write a summary of key issues as shown in the following table:

POSSIBLE KEY ISSUES

Issues	Comments
Arson Type	intentional/careless/negligent
Location of Fire	occupied dwellings, schools; abandoned houses and buildings; outdoor areas such as dumpsters, parks and other open areas
Number of Fire Origin Points	three/miltiple
Number of Firesetting Attempts	two
Arsonist's sex and age	a 14-year-old boy
Casualties	one dead, two injured
Losses and damages	$5 million damage, several destroyed buildings
Motive	curiosity, revenge, attention-seeking behavior, parental and family problems, single parent situation, step family, difficult circumstances and lack of support, severe emotional disturbance, arson for hire, etc.
Risk Factors	juvenile(s) with (no) history of firesetting/ alcohol abuse/drug abuse, juvenile(s) (un)involved in firesetting behavior

Case № 1

Early one evening, a 15-year-old boy broke into his school with the intent of burning it. He started three separate fires in different locations to ensure that his effort would be successful. He left the school and waited. Nothing happened. Frustrated, he returned to the school, broke in a second time and reignited the fires. This time his effort resulted in a multiple alarm fire which caused $3.5 million damage to the school building.

The boy lives in an upper-middle class neighborhood in a stable home environment. He lives with his biological mother and stepfather. His biological father is not really involved in his life, but all indications were that this was not an issue to him. No other significant family stressors were reported. However, it was indicated that his parents had poor parenting skills and judgment and would often allow him to come and go as he pleased. This lack of structure and clear expectations led to persistent school problems which resulted in his being reprimanded in school the day of the fire. The boy stated he was angry at his teachers and wanted to burn the school down.

Case № 2

A 15-year-old boy lived in an abandoned trailer with his mother. His father had deserted him years before. His mother was a drug addict who often disappeared for periods of time, leaving him completely alone with no support or means to care for himself.

In his frustration and anger at his mother's absence, he set nine fires in one night. The fires were all started near occupied structures. One was ignited on a front stoop (*веранда, крыльцо*). Several were in dumpsters (*контейнеры для мусора*) near residences. Although, the potential for loss was significant, none of the fires resulted in major damage.

Case № 3

A 14-year-old boy was out early one morning with a few of his friends. He was proud to say he was a member of a street gang and had shot at people in the past. He and his friends decided to steal two cars and go for a ride, picking up some additional friends along the way.

While stealing the first car, the boy started a fire in a garage attached to a single-family dwelling. There were paper sacks on the floor next to the car, and he impulsively ignited the material using a lighter and a spray perfume bottle to simulate a torch. He stated that the fire appeared to be going out when they left the garage in the stolen car. However, the fire flared up and spread to the exterior of the house causing several thousand dollars damage.

He said he did not know why he lit the fire. He and his friends were apprehended after they crashed the stolen cars.

Case № 4

An arson fire occurred in a vacant single family dwelling one evening around 9:00 p.m. Alerted to the fire, neighbors ran to the house to discover a teenage girl in the house. Neighbors who urged her to leave the house stated they heard she say, “I started the fire, isn’t it pretty?”

The home had been unoccupied since the death of its former resident. However, the police received numerous reports of vagrants and of drug-related activities. The 16- year-old girl explained that she had moved out of her parent’s home to the streets exactly one year ago, and that she had stayed in the house on about 15 occasions. The night of the fire she entered through an open back door and started a fire in the fireplace, using papers for heat. Some papers fell out of the fireplace onto the floor. She attempted to fuel the fire rather than extinguish it. Intending to burn down the house, she also started fires in four more locations. When asked why she didn’t leave, she stated that her mind was under stress and she couldn’t think straight. The girl was under the influence of drugs at the time. She denied any suicidal intent and was placed in detention and referred for evaluation.

Case № 5

A 15-year-old girl was expelled from school after she and a friend singed (*to singe - опалить*) the hair of two other girls by using hair spray and a lighter to make a torch. The teenager frequently was in trouble at school. The investigator was very concerned about her lack of empathy and remorse for her violence against the two girls. The father stated he believed that his daughter was aware of what she was doing, and that she wanted to cause harm. He is frustrated and tries to monitor her behavior. She was referred for further evaluation.

Case № 6

A 15-year-old boy admitted starting a fire by igniting clothing, and boxes in a spare bedroom of his home. The resulting fire caused $60,000 damage to their single family home.

The boy had a history of fire play and had been referred to the local juvenile firesetter program three years before. At that time, he had started a fire in a closet because he wanted to be a firefighter. Later, the boy admitted to willingly causing the fire. His father had a chronic illness and it appeared that the boy had to manage household responsibilities that he resented. He did not feel that he was properly acknowledged for his increased responsibility. When asked about the incident, he stated that he was angry at his parents.

Case № 7

A teenage boy had started several fires behind the local school before he was apprehended. When asked to explain his actions, he stated that he liked the excitement of doing something bad and getting away with it. He found fire to be especially interesting. He had started fires in dumpsters every Sunday morning for several weeks.

This teenage boy admitted to several other fire incidents dating back to when he was seven years old. Almost all of his firesetting occurred when he was alone. Other intentional fire incidents included a grass fire, setting his school desk on fire, and making homemade fireworks.

The boy lived with his mother and father. Both parents were unemployed, his father had chronic health problems, and his mother was an alcoholic.

Case № 8

18-year-old boy left his 12-year-old girlfriend and her mother late one afternoon promising to return with some fast food. Having no money he decided to break into a cold storage warehouse searching for something of value to fence. Once inside, he ignited some large paper bales for no apparent reason. He left the building without finding anything of value. The ensuing (*последующий*) fire required more than 200 firefighters and 50 pieces of fire apparatus to bring under control. The fire destroyed several connected businesses with a loss of about 25 jobs and an insurance claim exceeding two million dollars. This was the largest intentional arson in Massachusetts in 1995.

Case № 9

A 14-year-old boy, along with another 14-year-old boy and a 15-year-old girl broke into a huge idle mill. For several days they explored the premises performing numerous acts of vandalism. On the last day they began to set small fires on each floor. One of the fires kindled a wood wall and extended into the ceiling. The resultant arson fire destroyed the plant and endangered a large number of surrounding buildings, occupied by multi-family residences.

Case № 10

A Captain in the Omaha Fire Department was killed while fighting a fire set by a 15-year-old boy. The blaze was located in a department store and the fire captain was trapped when the roof collapsed on him. The cause of the officer’s death was smoke inhalation. Omaha police considered the case a homicide.

Case № 11

Three youths, ages 13, 15 and 16 were hired by local drug dealers to set a fire in a vacant factory. The facility was 5 stories high and covered most of a city block. Salvage and removal of heavy manufacturing equipment from the building was underway. While the structure was in the process of transition, one corner of it was being used by the police to monitor drug traffic in the neighborhood. A group of local drug dealers recruited the boys to burn the area used for observation.

The ensuing fire destroyed the entire factory and spread to the neighborhood, forcing the evacuation of 47 families. In all, 20 occupied properties and 11 automobiles were destroyed in the fire. The impact of the incident was so great that it provided the impetus for establishment of the Eastern Philadelphia Drug and Arson Task Force (EPDART).

Case № 12

Seven youths under the age of 18 began setting fires in dumpsters then graduated to automobiles and vacant buildings. In March of 1996, members of this group set a fire in an illegal tire dump resulting in damages estimated at $8 million. Commuter and interstate traffic was disrupted during the incident and for months during the repair. Various members of this group are linked to intentionally set fires in 18 vacant buildings in the same area.

Case № 13

A twelve-year-old was determined to be criminally responsible for the deaths of eight people including five children aged 3 months to 10 years. He set the fire in an apartment stairway using newspaper and alcohol. He was reportedly abused by his father as an infant and was subject to an alcohol fire set by the father, who is in prison on robbery charges.

TRIBUTES

Tributes are poems, essays, pledges, prayers, etc. saying about what it is to leave as a firefighter and die as a firefighter. We salute those in the emergency services for what firefighters do everyday – their job!

Below are some tributes. Read them, render into Russian and discuss in English listing functions and personal characteristics of the Firefighter mentioned.

THE CREATION OF THE FIREFIGHTER

When a man becomes a firefighter,
his act of bravery has already been accomplished.
What he does after that is all in the line of work.
(from the collection of Short Tributes)

When the Lord was creating Firefighters, he was into his sixth day of overtime when an angel appeared and said, "You're doing a lot of fiddling around on this one." And the Lord answered, "Have you read the specifications on this person? Firefighters have to be able to go for hours fighting fires or doing a very dangerous rescuing job that a usual person would never do. They have to be very quick and never think twice of what they are about to do, no matter what the danger. They have to be in top physical condition at all times, running on half-eaten meals, and they must have ***six pairs of hands.***"

The Angel shook her head slowly and said, "Six pair of hands... no way." "It's not the hands that are causing me the problems," said the Lord, "it's the ***three pairs of eyes*** a Firefighter has to have." "That's on the standard model?" asked the angel. The Lord nodded, "One pair that sees through the fire and where he and his fellow Firefighters should fight the fire next. Another pair – here, in the heart of the fire, to see his fellow Firefighters and keep them safe. And another pair of eyes - in the front, so that he could look for the victims caught in the fire that need their help."

"Lord" said the angel, touching his sleeve, "Rest and work on this tomorrow." "I can't" said the Lord, "I already have a model who can recite procedures in his sleep that are needed to care for a person until they reach a hospital. This Firefighter also has phenomenal personal control. He can deal with a scene full of pain and hurt, and still he rarely gets the recognition for a job well done from anybody, other than from his fellow Firefighters."

Finally, the angel bent over and ran her fingers across the cheek of the Firefighter. "There's a leak," she pronounced. "Lord, it's ***a tear***. What's the tear for?" asked the angel. "It's a tear from bottled-up emotions for fallen comrades. It's a tear for all the pain and suffering they have encountered. And, it's a tear for his commitment to caring for and saving lives of his fellow man!"

"What a wonderful feature, Lord. You're a genius," said the angel. The Lord looked somber and said, "I didn't put it there."

Author unknown

BECAUSE

Do you see what my eyes have seen? -
Furious flames, crying children,
Mangled metal, hammered homes.
This is my job.
Do you hear what my ears have heard? -
Screaming sirens, bellowing bangs,
Angry alarms, mourning mothers.
This is my work.
Do you know what my heart has felt? -
Breathless babies, abiding anguish,
Scorching sorrow, rapt resolve.
This is my calling.
Do you understand what my soul has given? -
Tearful tolerance, lasting loyalty,
Sincere sympathy, ultimate unity.
This is my pursuit.
Do you know how I survive the call? -
Cultivated courage, bonded brotherhood,
Simple sacrifice, redemptive rescue.
This is my life.

Robin Weinrich

FRIEND

A Fireman knocked at the heavenly gate,
His face was scarred and old.
He stood before the Man of Fate
For admission to the fold.

"What have you done," Saint Peter said,
"To gain admission here?"
"I've been a firefighter, Sir," he said,
"For many, many a year."

The Pearly Gates swung open wide,
As Saint Peter touched the bell -
"Come in and choose your harp, my son,
"You've seen your share of hell."

Author unknown

WHAT DO HEROES DO?

Dear Firefighters,

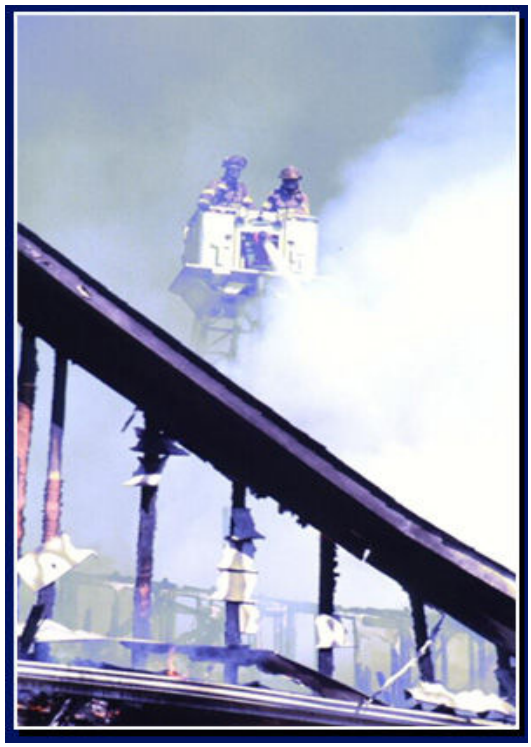
I wrote the following poem after Sept. 11, and wish to dedicate it to all those who were lost, their families, friends, and co-workers. I also wish to dedicate it to those now in the service field...our police force, firemen and women, EMTs, search and rescue. You are ALL true heroes in my poem! GOD BLESS YOU ALL!

"WHAT DO HEROES DO?"

What do heroes do?
Through disasters large and small,
Whether real or false alarm,
They will answer every call,
They strive to keep us from harm...
That's what heroes do,
That's what heroes do.

What do heroes do?
No matter the time of day,
No matter the time of night,
Overworked and underpaid,
They will not give up the fight...
That's what heroes do,
That's what heroes do.

What do heroes do?
Police protect us from crime,
Firemen put out the flames,
Medics try to buy more time,
Our safety they will attain...
That's what heroes do,
That's what heroes do.



What do heroes do?
At times they face great danger,
At times risking their lives,
Helping loved ones and strangers,
Work to ensure they survive...
That's what heroes do,
***That's what* heroes do.**

What do heroes do?
They entered falling towers...
And heroism was shown...
They tried to thwart death's powers...
They lost many of their own...
That's what heroes do,
That's what heroes do.

Karla Dorman, Burleson, TX

FIREFIGHTER'S PRAYER

Few selfless acts arte left in the world, but that which

a firefighter does is both Selfless and Daring!!!
(from the collection of Short Tributes)

Oh Lord, please, help this Firefighter
To be skillful and brave.
Please, let me never falter
When there are lives to save.
Be with my fellow firefighters
And ride with us each run,
From the moment we "suit-up"
Until the job is done.
Be with me as I guide a child
Through the dark and smoky haze.
Give me strength and courage
As I fight the deadly blaze.
Lord, I put my safety in Your Hands,
But in the chaos and the strife,
Help me act with selfless courage.
God, just let me save a life.

Author unknown

WFS (Women in the Fire Service) Pledge

A firefighter is perhaps the last noble warrior on earth!
Not for the fame or money, but because it's what needs to be done.
(from the collection of Short Tributes)

I pledge to respect my fellow firefighters, female and male, regardless of their ethnicity, sexual orientation, religion or creed. I recognize that I have a responsibility to my fellow firefighters as comrades and as human beings. I promise from this day forth to try to understand them and accept them, regardless of the differences that exist between us. I promise never to defame or make a derogatory remark about another member of the fire service, or to be party to such practices, and I will stop them from occurring whenever possible. We recognize that there is strength in our unity and that while our differences make us unique, we do share the common goal of being the best we can in our chosen career.

The WFS Pledge was written by Christine Richie-Myers of the Oakland, California Fire Department, and adopted at the WFS conference in Asheville, North Carolina, in 1989.

SUPPLEMENTARY READING

Text 1

The Behaviour of Fire

The process by which a fire starts and spreads endangering lives and property is known as fire behaviour. Fire fighters and fire officers must know this process very well if they want to be successful in coping with their problems at the scene of any fire. Understanding the nature of a fire's growth allows the officer, within reasonable limits, to predict the severity of a fire; it allows him to draw conclusions and make decisions at the scene of an incident with some degree of confidence. It is essential to be able to predict the manner in which a fire, smoke, or heat will spread in a given situation.

Once considered to be a gift from the god, fire is still a partial mystery. The phenomena responsible for the ignition of materials, the growth and the control of a fire are based on natural laws that have been known to science. But even scientists admit that we don't know enough about the total interaction that occurs in the combustion process among the basic components. There are gaps in our knowledge that need to be closed by further research. Nevertheless, the fire officer must be well aware of these laws. He is the one who must be able to use them to identify, reduce, retard, remove, or control the negative effects generated by an unwanted fire.

Text 2

Fundamentals of Fire Extinguishment

Essentially, fire extinguishers put out fire by taking away one or more elements of the fire triangle.

Cooling a fire calls for the application of something which absorbs ***heat***. Water is the most common cooling agent. It is commonly applied in the form of solid stream or finely divided spray.

A fire will go out if deprived of its fuel supply. Often, taking the ***fuel*** away from a fire is difficult and dangerous, but there are exceptions. For example, when flammable gases catch fire as they are flowing from a pipe, the fire will go out if the flow can be valved off.

A fire can be extinguished by removing or limiting its ***oxygen*** supply. It is not necessary to completely remove the supply of oxygen, a reduction of oxygen below 6% is sufficient to extinguish a fire. Other gases which are heavier than air, such as carbon dioxide and vaporizing liquid, can be used to blanket the fire, preventing the oxygen from getting to the fire. Examples of this method of extinguishment are:

- Snuffing out a candle;
- Placing a lid on a chip pan fire;
- Closing doors and windows – a fire in a room may burn itself out.

Text 3

Alfa, Bravo, Charlie and Delta Fires

Fires are classifies according to the nature of combustibles (fuels) involved. The classification of any particular fire is of great importance since it determines the manner in which the fire must be extinguished. Fires are classified as being Class Alfa, Class Bravo, Class Charlie and Class Delta fires.

Class ***Alfa (A)*** fires are those that occur in such ordinary combustible materials as wood, cloth, paper, upholstery, and similar materials. They are usually extinguished with water using water mist or solid streams. Alfa fires leave embers or ashes and must always be overhauled.

Class ***Bravo (B***) fires are those that occur in flammable liquids (e.g. gasoline, diesel oil, paints, solvents, lubricating oils, greases, etc.) and gases (e.g. butane, propane, etc.). Dry chemical, aqueous film-forming foam (AFFF), carbon dioxide (CO_2), or halon can be used to extinguish Bravo fires. The agent you use will depend upon the circumstances of the fire.

Class ***Charlie (C)*** fires are those which occur in electrical equipment. Nonconducting extinguishing agents, such as CO_2, dry chemical, and halon are used to extinguish Charlie fires. Carbon dioxide and halon are preferred because they leave no residue.

Class ***Delta (D)*** fires occur in combustible metals, such as magnesium, titanium, sodium, etc. Special techniques have been developed to control this type of fires. Most Class Delta fires are fought with special powder.

Text 4

Classification of Fire Hazard

NFPA 10 and ISO 11602-1 provide similar definitions of fire hazard classification. It's as follows:

Light (Low) Hazard. Total amount of Class A combustible materials is of minor quantity; majority of contents are either noncombustible or arranged so that a fire is unlikely to spread. Small amounts of Class B flammables can be included if kept in closed containers and safely stored.

Ordinary (Moderate) Hazard. Total amount of Class A combustibles and Class B flammables are present in greater amounts than expected under light (low) hazard occupancies. Examples include dining areas, mercantile shops, light manufacturing, research operations.

Extra (High) Hazard. Total amount of Class A combustibles and Class B flammables present is above those expected in occupancies classed as ordinary (moderate) hazards. Examples include woodworking, vehicle repair, aircraft and boat servicing, cooking areas.

Text 5

History of Fire Extinguisher

The first version of the modern fire extinguisher was invented in the United Kingdom by Captain George William Manby in 1816. It consisted of a copper vessel of 3 gallons (13.6 litres) of pearl ash (potassium carbonate) solution under compressed air pressure.

The late 19th century saw the invention of the Soda-Acid extinguisher where a cylinder contained 1 or 2 gallons of water that had sodium bicarbonate mixed in it. Suspended in the cylinder was a vial containing concentrated sulfuric acid. The vial of acid was broken by one of two means depending on the type of extinguisher. One means involved the use of a plunger that broke the acid vial, while the second involved the release of a lead bung that held the vial closed. Once the acid was mixed with the bicarbonate solution, carbon dioxide gas would be expelled and this would in turn pressurize the water. The pressurized water was forced from the canister through a nozzle or short length of hose.

In 1912 a carbon tetrachloride extinguisher was pioneered. In this case the liquid was expelled onto a fire from a brass or chrome container by handpump, usually of 1 imperial quart (1.1 L) or 1 imperial pint (0.6 L) capacity. This extinguisher vapourised and extinguished the flames by chemical reaction. It was suitable for liquid and electrical fires and was popular in motor vehicles for the next 60 years. The vapour and combustion by-products were highly toxic and deaths did occur from using these extinguishers in confined spaces.

Text 6

Selection of Portable Fire Extinguishers

The selection of portable extinguishers for a given situation should be based upon the type and extent of fires anticipated, the construction and occupancy of the individual property, the hazard being protected, and the ambient temperature conditions. Additional considerations include the ease of use of the extinguisher, the ability of available personnel to operate the fire extinguisher, any anticipated adverse chemical reactions between the extinguishing agent and the burning materials, exposure of operators during fire control efforts, and the upkeep and maintenance requirements of the fire extinguisher.

Portable fire extinguishers must be selected for the specific class or classes of fires (i.e., Class A, B, C, D or K) to be protected against. ISO Classification of fires, and NFPA Standard for Portable Extinguishers provide fire classification criteria based on the nature of the fuel undergoing combustion. The selection of fire extinguishing agent should be carefully considered, as there are many different types of extinguishing agents available, each with its unique advantages and disadvantages.

Text 7

Fire Extinguisher Suitable Location

Fire extinguishers should be provided in readily accessible locations. Ideally, the fire extinguishers should be placed along the means of egress, including exits from the areas protected.

NFPA and ISO prohibit fire extinguishers from being obstructed from view. In large rooms and in locations with obstructed view, a means is required to indicate the extinguisher location. Additional markings, not a part of the device, may be required to indicate the location of extinguishers. Acceptable means of identifying the fire extinguisher locations include arrows, lights, signs, placards, mounting boards, overhead signs, color panels, stripes, cabinets or coding of the wall or column. Preferably, these identifiers should be standardized throughout the facility so that all fire extinguishers are easily identifiable.

Portable fire extinguishers are required to be installed securely on the hanger or bracket supplied by the extinguisher manufacturer, or placed in cabinets or wall recesses. Fire extinguishers installed under conditions where they are subject to dislodgement are required to be installed in manufacturer's strap-type brackets specifically designed to eliminate this problem. Extinguishers should also be mounted at an accessible height so that occupants can easily dismount them.

Text 8

IFEX -3000 (Impulse Fire Extinguishing)

Impulse **F**ire **Ex**tinguishing (установка подачи импульсного заряда) is a revolutionary new fire-fighting technology. Every fire brigade can benefit from using IFEX technology. The IFEX back pack is put on a vehicle like a breathing apparatus set so that, arriving on the scene of the fire, a fire-fighter is ready to start extinguishing immediately. A fire-fighter opens the air supply and the IFEX-3000 equipment is ready for the first shot. With each shot one liter of water is discharged by 25 bar air pressure. Water drops cover a wide area and, having a high discharge speed, penetrate deeply into the burning material.

The smallest IFEX-3000 system is the back pack with a 10-liter water container, an external air pressure bottle and an IFEX gun. Due to a highly efficient use of water, a light weight and mobility of the equipment, a fire-fighter is able to put on such an IFEX back pack within a minute without any help.

So it can be seen that IFEX systems are easy to use and mobile. They are independent of any pumps. That is why IFEX is ideal for training as there’s no secondary costs and also no environmental pollution.

Text 9

Shooting out a Fire (IFEX-3000)

Impulse **F**ire **Ex**tinguishing technology (установка подачи импульсного за-

ряда) was first introduced in Germany in March 1994. This principle is not only used from fire fighting vehicles but also when fighting fires using helicopters.

The advantages of the IFEX principle are as follows:

- the extinguishing agent is shot with high speed directly into the heart of the fire;
- the extreme speed of the shot allows for a mist of extremely small water droplets with a large cooling surface;
- the quantity of extinguishing agent is reduced which results in a high mobility of the system, an increased time of action and reaction, and reduction of water damage at the place of the fire.

The stainless steel IFEX 3000 gun uses compressed air as its power source. A front chamber holds water, and a rear chamber holds compressed air. Between them there is the heart of the gun: the quick release valve that develops mist. With every shot a liter of water is discharged and its droplets travel at a rate of about 400 kilometers an hour. Speed is very important for fire fighting and the compact IFEX equipment will remain an essential firefighter's tool in future.

Text 10

Rescue

Rescue operations consist of searching for and removing trapped occupants of hazardous conditions. Animals may also be recovered, if resources and conditions permit. Generally triage and first aid are performed outside, as removal from the hazardous atmosphere is the primary goal in preserving life. Search patterns include movement against room walls (to prevent rescuers from becoming lost or disoriented) and methodical searches of specific areas by designated teams.

Many fire departments follow a "two-in, two-out" rule, which states that:

a) teams made up of a minimum of two firefighters will enter and leave hazardous areas together (to prevent single rescuers from becoming lost);

b) for every team of two (or more) rescuers currently inside a hazardous area, another team of two (or more) rescuers will be stationed (or "staged") immediately adjacent to the entry to the hazardous area, ready to immediately enter should the first team require assistance.

Such teams are commonly known as Rapid Intervention Teams (RIT).

Searches for trapped victims are exhaustively detailed, often including searches of cupboards, closets, and under beds. The search is divided into two stages, the primary and the secondary. The primary search is conducted quickly and thoroughly, typically beginning in the area closest to the fire as it is subjected to the highest risk of exposure. The secondary search only begins once the fire is under control, and is always (resources and personnel permitting) performed by a different team than that which did the primary search.

Rescue operations may also involve the extrication of victims of motor vehicle crashes (MVC). Here firefighters use spreaders, cutters, and hydraulic rams, tools to remove metal from the patient, followed by actually removing the patient, usually on a backboard with collar, and transferring to a waiting ambulance crew in the cold zone. More technical forms of rescue include subsets such as swiftwater rescue,

confined space rescue, and trench rescue, etc. These types of rescue are often extremely hazardous and physically demanding. They also require extensive technical training. NFPA regulation state that a "rescuer" must have medical training to perform any technical rescue operation. As such, firefighters involved in rescue operations have some kind of medical training as first responders, emergency medical technicians, paramedics, or nurses.

Text 11

Salvage

Buildings that are made of flammable materials such as wood are different from so called "fire-resistant" buildings such as concrete high-rises. Generally, a "fire-resistant" building is designed to limit fire to a small area or floor. Other floors can be safe simply by preventing smoke inhalation and damage. All buildings suspected of being on fire must be evacuated, regardless of fire rating.

While sometimes fires can be limited to small areas of a structure, wider collateral damage due to smoke, water, and burning embers is common. Utility shutoff (such as gas, electricity and water) is typically an early priority of arriving fire crews. Whenever possible, movable property is moved into the middle of a room and covered with a heavy cloth tarp. Firefighters are often forced to open holes in the roof or floors of a structure (called "vertical ventilation") or open windows or walls (called "horizontal ventilation") to remove smoke and heated gases from the interior of the structure.

Text 12

Communication and Command Structure

Firefighters are trained to use communications equipment to receive alarms, give and receive commands, request assistance, and report on conditions. Since firefighters from different agencies routinely provide mutual aid to each other, and routinely operate at incidents where other emergency services are present, it is essential to have structures in place to establish a unified chain of command, and share information between agencies.

The U.S. Federal Emergency Management Agency has established a National Incident Management System. One component of this system is the Incident Command System.

Text 13

From the History of Firefighting Equipment

Ctesibius of Alexandria is credited with inventing the first fire pump in the second century B.C. The fire pump was reinvented in Europe during the 1500s. A

book of 1655 inventions mentions a steam engine (called "fire engine") pump used to “raise a column of water at the hight of 40 feet”, but there was no mention of whether it was portable.

Philadelphia obtained a hand-pumped fire engine in 1719, years after Boston's 1654 model appeared there, made by Joseph Jencks.

By 1730, Newham, in London, had made successful fire engines which were used in New York City in 1731. Later, in 1743, a national model built by Thomas Lote appeared in America.

The first fire engine in which steam was used was that of John Braithwaite in 1829; Ericsson made a similar one in New York in 1840. John Ericsson is credited with building the first American steam-powered fire engine.

Until the mid-19th century most fire engines were manoeuvred by men, but the introduction of horse-drawn fire engines considerably improved the response time to incidents. The first self-propelled steam engine was built in New York in 1841, but motorized fire engines did not become commonplace until the early 20th century.

Text 14

Fire Engine

A fire engine is designed to pump water using an engine and onboard water supply, which can be replenished via a fire hydrant, water tender or any other available water source by suction.

Engines are also known as pumpers as they are used to pump water onto fires. Their primary purpose is direct fire suppression, and they may carry many tools including ladders, pike poles, axes, fire extinguishers, and ventilating equipment.

Engines are normally staffed with at least three people - an officer, a driver who usually operates the pump, and a firefighter, and preferably with a second firefighter, to be able to effectively and safely attack a fire. In some countries, such as Finland, a unit leader, engineer and one or two pairs of fire fighters are preferred for tactical reasons. In smoke diving, two fire fighters always work together; another two firemen can make another smoke diving team, work as a safety team, run other tasks or rest between several dives in very hot places, because cooling of fire fighters is sometimes extremely necessary, despite high-technology suits and other equipment.

According to the Oxford English Dictionary, the term “fire engine” was first used in the 17th century, in exactly the same sense it has now, "a machine for throwing water to extinguish fires".

On occasion, fire engines have also been used as water cannons for crowd control.

There are several configurations of fire engines relating to the position of the pump operating panel including top, side, front and rear mount.

Text 15

Pumpers

Early pumpers were used as a source of water. Water was later put into wooden pipes underground, and the “fire plug” was pulled out of the top of the pipe when a

suction hose was to be inserted. Later systems incorporated pressurized fire hydrants, where the pressure was increased when a fire alarm was sounded. This was found to be harmful to the system, and unreliable, and today's valved hydrant systems are constantly kept under pressure, although additional pressure may be added when needed. Many rural fire engines still rely upon cisterns or other sources for drafting water into the pumps.

Today's American firefighter has a wide variety of pumper styles and sizes available to him. Fire engines don't come in just red anymore either. Today fire departments paint their equipment in different colors.

There are pumpers that carry hose and water and only pump the water to the scene of the fire. These pumpers can pump at the rate of up to 2000 gallons per minute at up to 300 pounds pressure.

Some pumpers have special water towers attached to them so that they can direct the streams of water into upper floors of tall buildings and farther back into lower buildings.

Other types of pumpers not only carry hose and pump the water to the scene of the fire but also carry special equipment for emergency medical assistance.

Text 16

History of Ladders

In the early days of firefighting, there was little need for ladders at a fire to rescue people from the upper floors of buildings because there were few buildings taller than two storeys. When there was a need to reach the roof of buildings, to put out roof fires, ladders were carried to the scene of fire by hand.

As cities became bigger, buildings became taller and the need for fire fighting ladders grew, too. As a result, there appeared "Hook and Ladder" fire companies. The name "Hook and Ladder" has been shortened today to just "Ladder" company. Ladder companies still use long "hooks" or "pike poles" to pull down roof shingles or other materials at a fire.

The ladder cart or ladder wagon resulted from the need of a greater amount of ladders at fires, and different lengths of ladders. Firefighters would push the cart to the fire and take off the hooks and ladders they needed.

Text 17

Aerials

As buildings grew in height since the late 19th century, various means of reaching burning tall structures have been developed. At first, manually-extendable ladders were used; as these ladders grew in length (and weight) they were put onto two large, old-fashioned wheels. When carried by fire engines, these ladders had the wheels suspended behind the rear of the vehicle, making a very distinctive sight which disappeared from some Commonwealth countries only in recent years.

Later, a ***turntable ladder*** - which was longer, mechanically-extendable, and installed directly onto a fire truck - appeared. Since the late 1930s, the longest turntable ladders have reached a height of 150 feet (45 metres) - so long, in fact, that some ladders in the USA have been mounted onto semi-trailers (the "Tiller Trucks"), with an extra crew sitting at the back just to steer the rear wheels.

After the Second World War turntable ladders were supplemented by an ***aerial platform*** (or "Cherry Picker") attached onto a mechanically bending arm installed onto a fire truck. These platforms could extend into previously unreachable "dead corners" of a burning building.

Text 18

Modern Ladders

The ***turntable ladder*** is the best-known form of fire truck.. A "tiller" or "hook-and-ladder" truck (a semi-trailer carrying a turntable ladder), formerly much used in the United States but becoming rarer today, requires two drivers, as it has separate steering wheels for front and rear wheels (the steering device for the rear is sometimes a tiller rather than a true steering wheel). This truck is often used in areas with narrow streets that prohibit longer single vehicle trucks from entering. One city that still mostly uses tiller trucks is Baltimore, Maryland.

The term "tiller" and "hook and ladder" are not interchangeable. Truck companies generally operate from ladder trucks. There are many types of ladder trucks under the general heading "ladder truck". Rear mounts, mid-mounts, tower ladders, tillers, and articulated booms are the main types of ladder trucks.

Generally, ladder trucks carry a wide assortment of ladders and hooks. Ladders have fairly obvious purposes; hooks can be used for a variety of things, for example, for breaking windows, etc.Technically, any vehicle that carries hooks and ladders could be a hook and ladder.

Telescopic aerial platform ladders can nowadays reach heights up to over 100 meters (over 328 feet). This kind of aerials have typical ladders integrated to a hydraulic boom. In addition, a joined additional arm gives the platform an ability to go "up-and-over", i.e. bend over roof. These aerials can be equipped with control unit, lighting equipment, power outlets and compressed air outlets. Stretcher can be transported over the platform. Some units can be operated even remote-controlled from a distance of a few hundred meters, for example, in case of dangerous chemical fires.

In general, telescopic aerial platform ladders are used in various firefighting, rescue, and clearance operations. Because the platform can reach also "below-ground" levels of a few meters, these units can sometimes be seen also as rescue divers' support units offering a platform and lighting power over water.

Text 19

Appliances for Fire Brigades

Fire brigades are equipped with some or all of the following appliances:

Self-Propelled Pumps consist of a vehicle carrying a fire pump that is driven either by a "power take-off" from the engine of the vehicle or by a separate internal combustion engine. The pump is usually a centrifugal one, capable of delivering 500-1000 gallons per minute, but it may also be a reciprocating one.

Turntable Ladders are made of steel and consist of a main ladder within which three or more extension ladders are raised by steel cables.

Water Tenders are vehicles carrying a tank of water, often of 400-500 gallons capacity. They are valuable in country areas where water supplies are limited.

Other appliances include ***foam tenders, hose reel trucks, salvage tenders, radio vans, control units, communications units*** and tenders which carry ***special devices*** such as ***searchlights, smoke exhausters*** and ***cutting and wrecking tools***, not provided on other appliances.

Text 20

First – Aid Appliances

First-aid appliances must be close at hand and ready for immediate use when they are needed. They should be placed in conspicuous positions, usually in groups near to the exit doorways or on staircase landings.

Buckets of water is the cheapest and most common type of firefighting equipment. They are, however, undesirable in many ways - the water becomes dirty and evaporates and the buckets are misused. The value of water buckets in firefighting is therefore limited.

Buckets of sand are useful in a laboratory when provided in conjunction with portable fire extinguishers.

Blankets, asbestos or wool, are used for smothering burning clothing and small fires in cooking fat and other flammable liquids. Blankets should be preferably kept in cylindrical metal containers fixed to the wall.

The most suitable types of ***portable fire extinguishers*** are water, foam, dry powder or carbon dioxide extinguishers for the various types of risks.

Hydraulic hose reels can be provided as an alternative to portable extinguishers. There may be cases, especially in very tall buildings, when they are considered to be essential equipment.

Text 21

Training of American Firefighters

Applicants for municipal firefighting jobs generally must pass a written exam; tests of strength, physical stamina, coordination, and agility; and a medical examination that includes drug screening. Workers may be monitored on a random basis for drug use after accepting employment. Examinations are generally open to persons who are at least 18 years of age and have a high school education or the equivalent. Those who receive the highest scores in all phases of testing have the best chances for appointment. The completion of community college courses in fire science may im-

prove an applicant's chances for appointment. In recent years, an increasing proportion of entrants to this occupation have had some postsecondary education.

As a rule, entry-level workers in large fire departments are trained for several weeks at the department's training center or academy. Through classroom instruction and practical training, the recruits study firefighting techniques, fire prevention, hazardous materials control, local building codes, and emergency medical procedures, including first aid. They also learn how to use axes, saws, fire extinguishers, ladders, and other firefighting and rescue equipment. After successfully completing this training, they are assigned to a fire company, where they undergo a period of probation.

A number of fire departments have accredited apprenticeship programs lasting up to 5 years. These programs combine formal, technical instruction with on-the-job training under the supervision of experienced firefighters. Technical instruction covers subjects such as firefighting techniques and equipment, chemical hazards associated with various combustible building materials, emergency medical procedures, and fire prevention and safety. Fire departments frequently conduct training programs, and some firefighters attend training sessions sponsored by the U.S. National Fire Academy. These training sessions cover topics including executive development, anti-arson techniques, disaster preparedness, hazardous materials control, and public fire safety and education. Some states also have extensive firefighter training and certification programs. In addition, a number of colleges and universities offer courses leading to 2- or 4-year degrees in fire engineering or fire science. Many fire departments offer firefighters incentives such as tuition reimbursement or higher pay for completing advanced training.

Among the personal qualities firefighters need are mental alertness, self-discipline, courage, mechanical aptitude, endurance, strength, a sense of public service, initiative and good judgment. Because members of a crew live and work closely together under conditions of stress and danger for extended periods, they must be dependable and able to get along well with others. Leadership qualities are necessary for officers, who must establish and maintain discipline and efficiency, as well as direct the activities of firefighters in their companies.

Most experienced firefighters continue studying to improve their job performance and prepare for promotion examinations. To progress to higher level positions, they acquire expertise in advanced firefighting equipment and techniques, building construction, emergency medical technology, writing, public speaking, management and budgeting procedures, and public relations.

Opportunities for promotion depend upon written examination results, job performance, interviews, and seniority. Increasingly, fire departments use assessment centers, which simulate a variety of actual job performance tasks, to screen for the best candidates for promotion. The line of promotion usually is to engineer, lieutenant, captain, battalion chief, assistant chief, deputy chief, and finally to chief. Many fire departments now require a bachelor's degree, preferably in fire science, public administration, or a related field, for promotion to positions higher than battalion chief. A master's degree is required for executive fire officer certification from the National Fire Academy and for State chief officer certification.

Text 22

EMS (Emergency Medical Service) Star of Life

The ***Star of Life*** is a *blue*, six-pointed star with the *Rod of Asclepius* in the center, originally designed and governed by the U.S. National Highway Traffic Safety Administration (NHTSA) (under the United States Department of Transportation, DOT). Internationally, it represents emergency medical services (EMS) units and personnel. A similar *orange* star is used for search and rescue personnel.

The ***Rod of Asclepius*** is an ancient Greek symbol associated with astrology and healing the sick with medicine. It consists of a serpent entwined around a staff. ***Asclepius***, the son of Apollo, was the god of medicine in ancient Greek mythology.

The Rod of Asclepius symbolizes the healing arts by combining the serpent, which in shedding its skin is a symbol of rebirth and fertility, with the staff, a symbol of authority, befitting the god of Medicine. The snake wrapped around the staff is widely claimed to be a species of Rat snake, also known as the **Aesculapian** (**Asclepian**) **snake**. It is native to southeastern Europe, Asia Minor, and some central European regions, apparently brought there by Romans for their healing properties.

The Star of Life was patented by the American Medical Association (AMA) in 1967. The logo was 'given' to the National Registry of Emergency Medical Technicians (NREMT) for use as the emergency medical technicians (EMS) logo. The Star of Life was registered as a certification mark on February 1, 1977.

The six branches of the star are symbols of the six main tasks executed by rescuers all through the emergency chain:

1. The first rescuers on the scene observe the scene, understand the problem, identify the dangers to themselves and the patient(s), and take appropriate measures to ensure the safety on the scene (circulation, electricity, chemicals, radiations, etc.).
2. The first rescuers call for professional help.
3. The first rescuers provide first aid and immediate care to the extent of their capabilities.
4. The EMS personnel arrive and provide immediate care to the extent of their capabilities.
5. The EMS personnel proceed to transfer the patient to a hospital for specialized care. They provide medical care during the transportation.
6. Appropriate specialized care is provided at the hospital.

More commonly, the 6 EMS aspects are represented as such:

1. Detection.
2. Reporting.
3. Response.
4. On scene care.
5. Care in transit.
6. Transfer to definitive care.

Text 23

What Does It Take to Be a Good Firefighter

Firefighting is an exciting, ever-changing, highly rewarding occupation. Most firefighters enjoy the warmth of camaraderie among the crew, the challenge of bringing physical skills and mental abilities to play in what for others is an emergency, and the opportunity to provide critical, life-saving services in a moment of need. Many also appreciate the 24-hour work schedule, the job security in times of downsizing, and - in most fire departments - good pay and benefits.

What are some of the attributes of a good firefighter?

- honest and dependable;
- learns quickly, can remember and use what s/he's learned when the pressure is on;
- physically fit: is committed to a healthy lifestyle and to maintaining fitness;
- functions well as part of a team;
- cares about and respects co-workers and members of the community;
- communicates and listens well;
- is dedicated to her/his work;
- has, and uses, common sense;
- is emotionally stable and deals with stress appropriately;
- has a sense of humor;
- is open-minded and flexible, willing to try new things and listen to new ideas.

No one person has all of these attributes. If all firefighters were the same, as a group their strengths would be redundant and their weaknesses would be magnified. But everyone is different. Each firefighter brings individual strengths to the team, and it is this variety of strengths that gives the team multiple options and balances out any individual weaknesses.

It is also important to note that these traits are not specific to men or women. Women have been functioning successfully as career firefighters and officers for more than 25 years, and as volunteers for much longer. Even if you're the first woman on your department, you're part of a strong tradition of women who are dedicated to the fire service and who have found their place in it.

Text 24

Firefighting Job Outlook

Prospective firefighters are expected to face keen competition for available job openings. Many people are attracted to firefighting because 1) it is challenging and provides the opportunity to perform an essential public service, 2) a high school education is usually sufficient for entry, and 3) a pension is guaranteed upon retirement after 20 years. Consequently, the number of qualified applicants in most areas exceeds the number of job openings, even though the written examination and physical

requirements eliminate many applicants. This situation is expected to persist in coming years.

Employment of firefighters is expected to grow about as fast as the average for all occupations through 2012 as fire departments continue to compete with other public safety providers for funding. Most job growth will occur as volunteer firefighting positions are converted to paid positions. In addition to job growth, openings are expected to result from the need to replace firefighters who retire, stop working for other reasons, or transfer to other occupations.

Layoffs of firefighters are uncommon. Fire protection is an essential service, and citizens are likely to exert considerable pressure on local officials to expand or at least preserve the level of fire protection. Even when budget cuts do occur, local fire departments usually cut expenses by postponing equipment purchases or not hiring new firefighters, rather than through staff reductions.

Text 25

From the History of Fire Brigades

The history of organized combating of structural fires dates back at least to ancient Egypt, where hand-operated pumps may have been employed to extinguish fires. However, such attempts could be of limited value given the large structural conflagrations that could sweep through Rome and other cities.

The first Roman fire brigade (Vigiles) was formed in 6 A.D. by Augustus to combat fires using bucket brigades and pumps, as well as poles and hooks. It is generally thought that this is where the "hook" in "hook and ladder company" comes from. The Vigiles patrolled the streets of Rome to watch for fires and served as the police force.

In Europe, firefighting was quite rudimentary until the 17th century. In 1254, a royal decree of King Saint Louis of France allowed the residents of Paris to establish their own night watches, separate from the king's night watches, to prevent and stop crimes and fires. After the Hundred Years' War, the population of Paris expanded again, and the city, much larger than any other city in Europe at the time, was the scene of several great fires in the 16th century. Consequently, King Charles IX disbanded the residents' night watches and left the king's watches as the only one responsible for checking crimes and fires.

Another great city that experienced such a need for organized fire control was London, which suffered great fires in 798, 982, 989, and above all in 1666 (Great Fire of London). The Great Fire of 1666 started in a baker's shop on Pudding Lane, consumed about two square miles (5 km²) of the city, leaving tens of thousands homeless. The Great Fire of London set in motion changes which laid the foundations for organised firefighting in future. After the Great Fire, the City Council established the first fire insurance company , "The Fire Office", in 1667, which employed small teams of Thames watermen as firefighters and provided them with uniforms and arm badges showing the company to which they belonged. Afterwards, insurance companies formed private fire brigades to protect their clients' property. Insurance brigades would only fight fires at buildings the company insured.

However, the first organized municipal fire brigade in the world was established in Edinburgh, Scotland, when the Edinburgh Fire Engine Establishment was formed in 1824, led by James Braidwood. London followed in 1832 with the London Fire Engine Establishment.

The first horse-drawn steam engine for fighting fires was invented in 1829, but not accepted in structural firefighting until 1860, and ignored for another two years afterwards. Internal combustion fire engines arrived in 1907, built in the United States, leading to the decline and disappearance of steam engines by 1925.

The key breakthrough in firefighting arrived in the 17th century with the first fire engines. Manual pumps, rediscovered in Europe after 1500 (allegedly used in Augsburg in 1518 and in Nuremberg in1657), were only force pumps and had a very short range due to the lack of hoses. German inventor Hans Hautsh improved the manual pump by creating the first suction and force pump and adding some flexible hoses to the pump. In 1672, Dutch inventor Jan Van der Heiden invented the firehose. Constructed of flexible leather and coupled every 50 feet (15 m) with brass fittings, the length and connections remain the standard to this day. The fire engine was further developed by Richard Newsham of London in 1725. Pulled as a cart to the fire, these manual pumps were manned by teams of men and could deliver up to 160 gallons per minute (12 L/s) at up to 120 feet (40 m).

Text 26

History of Fire Brigades in the United States

The United States did not have professional firefighters in the sense of government-run fire departments until the time of the American Civil War. Prior to this time, amateur fire brigades would compete with one another to be the first to respond to a fire because insurance companies paid brigades saved buildings. Fire houses were a sort of social gathering place rather than a place where professionals would meet, and the money paid to the brigade went into the house's fund rather than to individual members. However, paid professional firefighting services were eventually established.

In Northern America, Jamestown, Virginia, was virtually destroyed in a fire in January, 1608. Fire "wardens" were appointed in New Amsterdam in 1648. Wardens were to patrol the cities to inspect chimneys. "Rattle Watches" were performed at night by eight appointees, who were to rouse citizens to fight fires by bucket brigade if necessary.

In Boston, serious fires in 1653 and 1676 had inspired the city to take greater measures towards combating fire. Benjamin Franklin created the Union Fire Company in 1736 in Philadelphia, the first volunteer fire company in America. There were no full-time paid firefighters in America until 1850. Even after the formation of paid fire companies in the United States, there were disagreements and often fights over territory.

New York City companies were famous for sending runners out to fires with a large barrel to cover the hydrant closest to the fire in advance of the engines. Often fights would break out between the runners and even the responding fire companies

for the right to fight the fire and receive the insurance money that would be paid to the company that fought it. Interestingly, during the 1800s and early 1900s volunteer fire companies served not only as fire protection but as political machines.

Today, fire and rescue remains a mix of paid, call, and volunteer responders. While urban areas such as New York and Boston are typically served by large, well-coordinated paid responders, there is no requirement demanding either paid, call, or career firefighters and many departments are so-called "mixed" departments – full-time responders handle the day-to-day needs of a department and work with either call or volunteer responders when more manpower is needed. Other departments are completely call or volunteer, depending on local tradition, needs, and, most importantly, financial ability.

Text 27

First Fire Brigades and Professional Firefighters

The first fire brigades in the modern sense were created in France in the early 18th century. In 1699, a man with bold commercial ideas, François du Mouriez du Périer (grandfather of French Revolution's general Charles François Dumouriez), solicited an audience with King Louis XIV. He successfully demonstrated new pumps and managed to convince the king to grant him the monopoly of making and selling "fire-preventing portable pumps" throughout the kingdom of France. François du Mouriez du Périer offered 12 pumps to the City of Paris, and the first Paris Fire Brigade, known as the "Company of Pump Guards", was created in 1716. François du Mouriez du Périer was appointed "director of the City of Paris's pumps", i.e. chief of the Paris Fire Brigade, and the position stayed in his family until 1760.

In the following years, other fire brigades were created in large French cities. It is at that time that appeared the current French word *pompier* ("firefighter"), whose literal meaning is "pumper". On March 11, 1733 the French government decided that the interventions of the fire brigades would be free of charge. This was decided because people always waited until the last moment to call the fire brigades to avoid paying the fee, and it was often too late to stop fires.

From 1750 on, the French fire brigades became para-military units and received uniforms. In 1756 the use of a protective helmet for firefighters was recommended by King Louis XV, but it took many more years before the measure was actually enforced on the ground. Well trained and well equipped, French fire brigades were in the process of professionalization on the eve of the French Revolution.

Napoleon Bonaparte is generally attributed as creating the first "professional" firefighters, known as Sapeurs-Pompiers ("Sappers-Firefighters"), from the French Army. Created under the Commandant of Engineers in 1810, the company was organized after a fire at the ballroom in the Austrian Embassy in Paris which injured severalpersons.

Text 28

Call Firefighters

Call firefighters are called upon to supplement full-time firefighting forces and involved in all aspects of firefighting, dispatch, and rescue operations. Call firefighters may also be called upon to staff spare engines, and. conduct station coverage, when needed. During these times, call firefighters may respond to a variety of calls, including fires, emergency medical calls, motor vehicle crashes, etc.

Call firefighters are expected to attend monthly training drills. For applicants no firefighting experience is required. However, persons with related fire and/or EMS (Emergency Medical service) experience are preferred. An applicant must be 18 years of age or older at the time of hire, possess a valid drivers license, and has his own reliable kind of transportation, as he may be responding to calls from home. Applicants must also be non-smokers. Besides, criminal record inquiries are usually conducted and any applicant found to have an unsatisfactory criminal record is withdrawn from the process.

Applicants are to pass an extensive medical examination, as well as a physical agility test. Applicants are also required to attend a department interview, and may also undergo a background investigation. Upon appointment, they become First Responder certified.

Text 29

Retained Firefighters

Retained firefighters are a vital part of today's fire service in the UK. Their stations are usually located in rural areas, and provide extra fire cover alongside with their full-time colleagues. Retained firefighters are equipped with the same fire kit, do the same job, and are trained in the same way as full-time firefighters. They are part-time but when the call comes, they become part of a dedicated team ready to face any emergency - trained and capable people in the front line.

Retained Fire Station is an important part of the local community. When retained firefighters are called to attend emergencies, whether fires, floods, road accidents or other incidents, they may save the lives of their friends or neighbours.

Retained firefighters are required to attend a weekly drill night, and be "on call" in response to an alerter, either 24 hours per day, or fewer hours, by prior arrangement. They are paid an annual retaining fee which is about £1,939 for a trainee firefighter; £2,020 for development rate; and £2,585 for a competent firefighter.

Text 30

The History of Volunteer Firefighting

Volunteer fire departments in the USA have been around for a long time. Where did they originate and who started them?

The man who established the first volunteer fire department studied electricity and helped draft the Declaration of Independence. His name was Benjamin Franklin. The first volunteer fire department began in Philadelphia in 1736.

Ben Franklin moved to Philadelphia from Boston at the age of eighteen. Boston had been greatly affected by fire. The city of Boston experienced major fires in

1653 and 1676. After the fire in 1676, Boston purchased a London pumper. The city then hired thirteen men to fight fires. These were the first paid firefighters in the United States. In 1711, another major fire occurred in Boston. One hundred ten families lost their homes. At the age of six Benjamin Franklin witnessed this fire. Concerned citizens banded together and formed The Mutual Fire Societies in 1711. Each society had approximately twenty members. The Mutual Fire Societies became social as well as protective associations, setting a pattern for organized volunteer firefighting groups.

In 1733, Ben Franklin often wrote about the dangers of fire and the need for organized fire protection in his newspaper The Pennsylvania Gazette. Ben Franklin was familiar with Boston's Mutual Fire Societies which were also known as "Fire Clubs." But the "Fire Clubs" existed for the protection of its members, not the community at large. Ben Franklin wanted organizations that would battle all fires, regardless of whose property was burning.

After an extensive fire in Philadelphia in 1736, Franklin created a fire brigade called The Union Fire company with 30 volunteers. The idea of volunteer fire brigades gained popularity. Then additional companies were formed in Philadelphia. Some of them were: The Fellowship, Hand-in-Hand and Heart-in-Hand, and Friendship Companies. Each of the companies paid for their own equipment and located it throughout town at strategic places. Most early fire companies in Philadelphia and other cities had professionals, wealthier merchants and tradespeople serving in the volunteer fire department. These citizens were able to afford to purchase equipment and pay fines for missing meetings and fires.

Among famous Americans who served as volunteer firefighters were: George Washington, Thomas Jefferson, Benjamin Franklin, Samuel Adams and others.

Before 1850 no city in the United States had fully paid, full-time firefighters. Volunteer firefighters played and continue to play an invaluable role in protecting lives and property.

Text 31
Female Volunteer Firefighters

In 1818, women began serving as volunteer firefighters. The first recorded female volunteer was a black slave Molly Williams. Firefighters provided the following information: "Molly was a very distinguished volunteer of No. 11 Engine. She used to be called 'Volunteer No. 11.'" Molly fought fires wearing a calico dress and checked apron. During a blizzard in 1818, she helped drag the engine to the scene of a fire.

In 1820, Marina Betts served as a volunteer in Pittsburgh and claimed she never missed an alarm during her ten years as a firefighter. Betts became famous for dumping buckets of water over male bystanders who refused to help fight fires.

Lillie Hitchcock, a resident of San Francisco, was America's most famous female firefighter. She began attending fires at the age of 15 and the company gave her an honorary membership. Even after her marriage she was still interested in firefighting. As time passed she no longer fought fires but she visited many an injured

firefighter and sent flowers when firemen died in the line of duty. She provided funds to build a monument to honor volunteer firefighters.

Text 32

American Firefighters Earnings

Median hourly earnings of ***firefighters*** were $17.42 in 2002. The middle 50 percent earned between $12.53 and $22.96. The lowest 10 percent earned less than $8.51, and the highest 10 percent earned more than $28.22. Median hourly earnings were $17.92 in local government, $15.96 in the Federal Government, and $13.58 in State government.

Median annual earnings of ***managers*** of firefighting and prevention workers were $55,450 in 2002. The middle 50 percent earned between $43,920 and $68,480. The lowest 10 percent managers of firefighting and prevention workers employed in local government earned about $56,390 a year in 2002.

Median annual earnings of ***fire inspectors*** were $44,250 in 2002. The middle 50 percent earned between $33,880 and $56,100 a year. The lowest 10 percent earned less than $26,350, and the highest 10 percent earned more than $69,060. Fire inspectors and investigators employed in local government earned about $46,820 a year.

According to the International City-County Management Association, average salaries in 2002 for ***full-time positions*** were as follows:

Positions	***Minimum annual base salary***	***Maximum annual base salary***
Fire chief	$64,134	$82,225
Deputy chief	56,522	72,152
Assistant fire chief	55,645	69,036
Battalion chief	54,935	68,673
Fire captain	45,383	54,463
Fire lieutenant	41,800	49,404
Fire prevention/code inspector	40,387	51,531
Engineer	38,656	48,678

Firefighters who average more than a certain number of hours a week are required to be paid overtime. The hours threshold is determined by the department during the firefighter's work period, which ranges from 7 to 28 days. Firefighters often earn overtime for working extra shifts to maintain minimum staffing levels or for special emergencies.

Firefighters receive benefits that usually include medical and liability insurance, vacation and sick leave, and some paid holidays. Almost all fire departments provide protective clothing (helmets, boots, and coats) and breathing apparatus, and many also provide dress uniforms. Firefighters are generally covered by pension plans, often providing retirement at half pay after 25 years of service or if disabled in the line of duty.

Text 33

Types of Protective Clothing

American firefighters have many different types of clothing, or PPE (Personal Protective Equipment) to wear, depending upon what kind of activity they are involved in. The style or colors may vary from department to department, but in general every firefighter will wear some variation of the clothing shown here, if their duties call for it.

Station Wear. Station wear is what firefighters wear for general use around the station and on calls that do not require additional protection.

Structural Turnouts. This is the usual protective clothing worn by a firefighter when fighting building fires, or performing rescues.

Wildland Gear. Wildland gear is designed for brush or forest firefighting.

Medical Gear. Medical clothing gear provides protection against medical hazards that a firefighter might be exposed to while providing Emergency Medical assistance.

Hazmat Gear. Hazmat clothing provides protection against poisonous or dangerous solids, liquids (splashing) and gasses.

Crash Rescue Gear. Crash Rescue gear is used only for very specialized situations, usually where large amounts of radiant heat must be dealt with, such as when flammable liquids burn, or aircraft crashes.

Class A Uniform. Class A uniforms are formal uniforms worn by members of the department at formal events and ceremonies.

Honor Guard Uniform. Honor Guard uniforms are formal uniforms worn by the department Honor Guard at formal events and ceremonies.

Text 34

Firefighting Protective Garment

The structural fire-fighting garment is reliable protective clothes consisting of coat, trousers with back and hood. It is made of heat-resistant aramid materials. The garment can be used with different fire-fighting equipment: belt, portable breathing apparatus, means of communications and other equipment. The garment is made with light-reflecting stripes.

The garment protects against harmful factors during extinguishing fire, liquidation of accidents, high temperatures when contacting with flame and heated objects, sparks and also it raises protection against mechanical injuries and bad weather conditions (frost, rain, wind, etc.).

Trousers have a high waist design and are fitted with adjustable braces for best possible comfort.

A ***jacket*** overlaps trousers by a large margin and is provided with an extra detachable insulating inner lining.

Special three-finger gloves for use by firefighters provide hands` protection from low and high temperatures, water, surface-active substances` solution; from cuts

and punctures. Special gloves serve as personal protection means during fire extinguishing operations, accidents elimination and in case of natural disasters.

Rubber heat-resistant fire boots are designed for providing safe working conditions during fire extinguishing operations and for legs` protection from mechanical injuries, active mediums` and high and low temperatures` effects. Fire boots serve as personal protection means during fire extinguishing, accidents elimination in various industrial fields and in case of natural disasters.

Head, eye and face protection are guaranteed with ***hoods, helmets, face shields, goggles***, and ***respiratory protection devices***.

Text 35

Firemen Turning Yellow for Safety

American firemen are changing their colors. The addition of yellow striping to uniforms and use of the same hue for helmets is being done not because firemen are tired of the drab black of the outfits, but as a safety measure.

The idea is that the all-black uniforms are hard to see when the firefighters are enveloped in a thick smoke present in many fires. The new bright yellow striping makes it easier to spot a fireman, if he becomes overcome or injured during a fire.

The yellow striping runs across the back of the jacket and down both sleeves. Helmets are pray painted.

Text 36

Turnouts

Turnouts are insulated and reenforced. They are made out of a fire-resistant fabric. They have reflective stripes to make them reflect when a light is pointed at them, so that they can be better seen in the dark, as well as glow-in-the-dark patches.

They also have the firefighter's name and department printed on the back, like a football player, to help identify them, since when everyone is suited up and wearing masks, it is difficult to tell who is who. They are also equipped with several large pockets for holding gloves, tools, radios, etc. Tan colored for firefighters, the Chief's turnouts are white to make them easier to spot on the fire ground. Some departments use black turnouts, but these are not preferred by County Fire because it is difficult to see when they become contaminated.

Text 37

History of Sprinklers

From 1852 to 1885, perforated pipe systems were used in textile mills throughout New England as a means of fire protection. However, they were not automatic systems, they did not turn on by themselves. Inventors first began experimenting with automatic sprinklers around 1860. The first automatic sprinkler system was patented by Philip W. Pratt of Abington, MA, in 1872.

Henry S. Parmalee of New Haven (the state of Connecticut) is considered the inventor of the first practical automatic sprinkler head. Parmalee improved upon the Pratt patent and created a better sprinkler system. In 1874, he installed his fire sprinkler system into the piano factory that he owned.

Until the 1940s, sprinklers were installed almost exclusively for the protection of commercial buildings, whose owners were generally able to recoup their expenses with savings in insurance costs. Over the years, fire sprinklers have become mandatory safety equipment, and are required by building codes to be placed in hospitals, schools, hotels and other public buildings.

Text 38

Sprinklers Usage

Sprinklers have been in use in the United States since 1874, and were used in factory applications where fires at the turn of the century were often catastrophic in terms of both human and property losses.

In the US, sprinklers are today required in all new high rise and underground buildings generally 75 feet (23 m) above or below fire department access, where the ability of firefighters to provide adequate hose streams to fires is limited.

Sprinklers may also be required in hazardous storage spaces by building codes, or by insurance companies where liability due to potential property losses or business interruptions can be reduced by adequate automatic fire protection.

Building codes in the United States for places of assembly, generally over 100 persons, and places with overnight sleeping accommodation such as hotels, nursing homes, dormitories, and hospitals usually require sprinklers. A newer, special class of fire sprinklers has been developed to fight, and subsequently suppress high challenge type fires.

Text 39

History of Smoke Detectors

In 1902 George Andrew Darby, an electrical engineer of 211 Bloomsbury Street, Birmingham, England, patented the electrical Heat-Indicator and Fire Alarm. The device was a heat alarm rather than a smoke detector and indicated an increase temperature in the apartment where it was fixed.

The device operated by closing an electrical circuit to sound an alarm if the temperature rose above the safe limit. The contact was made by bridging a gap with a conductor, or allowing one plate to fall on another. The connection of the two plates was caused simply by a block of butter which melted as the temperature rose.

This early device subsequently gave way to more modern fire and eventually smoke alarms. In 1969, two Americans, Kenneth House and Randolph Smith patented the modern smoke detector.

Text 40

Fire Safety Advices

One of the first and most important fire safety advice is **to install and maintain smoke detectors**. These devices warn you of a fire for you to escape in time. Install them on each level of your home and outside of each sleeping area. Test them every month, following the manufacturer's directions. Replace batteries once a year. Don't ever borrow detector batteries for other use - a disabled smoke detector can't save your life! For complete home protection, install automatic fire sprinklers in addition to your smoke detectors.

Another very important thing is **to plan and practice to escape**. If fire breaks out in your home, you have to get out fast! Together with your family, plan two ways out of every room. Fire escape routes must not use elevators, which might take you right to the fire. Choose a meeting place outside where everyone will gather. At least twice a year, the whole family should practice the escape plan.

Among other advices are the following ones: never smoke in bed and before going to bed or leaving home, check the place for smoldering cigarettes; keep cooking areas clear of combustibles; use electricity safely; store matches and lighters away from children; etc.

Text 41

Home Fire Safety Tips

Install and Maintain Smoke Detectors. Smoke detectors can give you precious minutes to escape safely. Install them on every level of your home especially outside sleeping areas. Test detectors monthly . Change batteries at least twice a year.

Plan and Practice an Escape Plan. Plan two ways out of every room. Fire routes should not include the use of elevators. Select a meeting place outside the house where everyone will gather in case of fire. Practice your plan often.

Learn How to Use a Fire Extinguisher. Install fire extinguishers at each level of your home, especially in the kitchen, basement and garage. Place away from stove or other heat sources, out of children`s reach and near an escape route. Know how to use them **before** a fire starts. Inspect them monthly. Maintain them using manufacturer`s instructions.

Make Sure Your Address is Visible. Your fire department can`t help you unless you can be found. Make sure the number of your house is visible from the street and is in a lighted area so it can be seen at night.

Crawl Low Under Smoke. It you must get through smoke to escape, keep low. The cleanest air will be closest to the floor. Crawl on your hands and knees to get to the nearest safe exit. If possible, cover your mouth and nose with a damp handkerchief.

Use Electrical Appliances Safely. Check lamps and ceiling fixtures to make sure wiring is intact. If an appliance smokes or smells, turn it off immediately. Examine electrical cords before use and replace any that are cracked. Don`t overload electrical outlets.

Keep Matches and Lighters Away from Children. Store matches and lighters in locked or high cabinets away from children. Teach children that matches and lighters are dangerous and should not be played with.

Text 42

Fighting Small Fires on the Job

Federal regulations require that employers who provide portable fire extinguishers in the workplace also provide training for their use. Used properly, portable fire extinguishers can save lives and property by putting out a small fire in the workplace or containing it until the fire department arrives.

It is essential that all employees be familiar with the proper use of portable fire extinguishers and know when and how to use them. In the event of fire, employees should respond in accordance with their company's fire emergency plan. Most employees will evacuate. Certain trained employees will evaluate the fire scene and, if the fire is small and conditions are reasonably safe, use a fire extinguisher to fight the fire. If the fire is large or conditions are unsafe, all employees should evacuate.

Before fighting a fire in the workplace be sure you know the proper technique for fighting fires. Be also sure you have an escape route in case you fail to extinguish the fire. You should also know what materials are burning and be sure that the extinguisher, you are using ,is capable of fighting the fire.

Text 43

Biggest Fires in History

Fire has always been one of man's most difficult battles. The most famous fires that occurred in the last few centuries are the following ones.

The Great Chicago fire is probably the most famous fire that occurred within the past hundred years or so. This fire occurred on the evening of October 8, 1871. The summer of 1871 was unusually dry in Chicago. With all its wooden buildings, Chicago was kindling waiting to burn. Incidentally, the city of Chicago had finished building all of the downtown's sidewalks out of wood right before the fire.

This fire killed 300 people and destroyed more than 17,000 structures - over 2000 acres in 27 hours. The origin of the fire is uncertain, though popular legend attributes its origin to a woman named Mrs. O'Leary. Mrs. O'Leary was milking her cow at the start of the fire.

Legend says that a farm animal kicked over her lamp, setting the barn on fire and starting the spread of one of the biggest fires in history. The fire destroyed the entire downtown core of Chicago and most of its North side.

The history of National Fire Prevention Week has it roots in the Great Chicago Fire. On the fire's 40th anniversary, the Fire Marshals Association of North America decided to commemorate it with something that would keep the public aware of the dangers of fire and the importance of fire prevention.

Next to the Great Chicago Fire, ***the Great Fire of London*** is probably the second most-famous. This fire began in a baker's shop on September 2, 1666 and lasted for several days. Surprisingly, the Great London Fire has no reported death toll. It destroyed more than 13,000 structures.

London was also a city largely built of wood, another kindling waiting to burn. When the city was rebuilt, builders used brick and stone to prevent a disaster of such proportions from ever happening again.

In the morning of April 18, 1906 ***San Francisco Earthquake Fire*** occurred as a result of a tremendous earthquake. Fires began from stoves and lamps that were overturned from the earthquake. The earthquake destroyed the city's water mains, making it nearly impossible for firefighters to fight the blaze. As a result, the fire lasted for three days until firefighters decided to dynamite entire blocks to prevent the spread of the fire. This disaster took its toll, killing 3,000 people and destroying close to 300,000 structures.

Text 44

Fire Prevention Week

Fire Prevention Week was inspired by one of the worst fires in America's history: the Great Chicago Fire of 1871, which took 250 lives and destroyed 17,430 buildings.

In 1911 the Fire Association of North America first designated the anniversary of this tragedy **Fire Prevention Day,** dedicated to encouraging fire safety.

In 1922 President Warren G. Harding proclaimed **National Fire Prevention Week.** Since then, the National Fire Protection Association has been the official sponsor of Fire Prevention Week, leading the nation to practice life-saving fire safety.

One of the main slogans of Fire Prevention Week is "Test Your Detector for Life". Your life and the lives of your family members can depend on having enough smoke detectors in the right places, and keeping these smoke detectors working properly!

Fire Prevention Week reminds people to make sure if they have all smoke detectors, they need, in their homes and to test these detectors monthly. And if your smoke detectors are over 10 years old, you should replace them.

Every year Fire Prevention Week once again gives people life-saving instructions including information on how you can get the most protection from home smoke detectors.

Text 45

Dalmatians: History and Personality

Historians believe that dalmatians originated in India as a lightly spotted hound type dog treasured by gypsies because of their flashy markings and eagerness to have fun. Dalmatians traveled throughout Europe and Asia with the gypsies eventually arriving in Europe around the late 1780's when members of the British upper class brought them home from their frequent trips to continental Europe. The aristocracy hoped to use them as hunting dogs but soon discovered that they were better companions to horse drawn carriages because they liked running along side the horses, which explains why they were called carriage dogs.

It is unknown when the breed was introduced to this country. The first dalmatian registered by the AKC was in 1888. In 1905 the Dalmatian Club of America was

founded. Their favorite pastime was testing dog's speed and endurance while trotting along side a carriage and/or horses (road trials - a hobby that is still pursued today). The dals association with carriages and horses also opened up a new career opportunity for the breed. Dalmatians received the nickname "fire dog" as they were the dogs that lived in the stables with the horses that pulled the water pumpers used to put out fires. When the alarm bell sounded the dogs ran behind the horses or led the way through the streets. After motor cars replaced the horses and carriages the dogs moved into the fire stations and enjoyed riding atop the engines. Over the last 40 years most fire stations have not been able to keep dalmatians as many urban fire stations lack the necessary space and personnel are often shifted between stations and given irregular shift assignments.

Bred to run for hours under or along side a coach most dalmatians do not tire easily. This means the dalmatian is an active and energetic dog that enjoys lots of exercise. Dalmatians are people-like and people oriented. If you are looking to adopt a dal be prepared to make them part of your life. Dalmatians are happiest accompanying their owners wherever they go. Dalmatians are typically aloof with strangers, however once they get to know them the person may get treated to the famous dalmatian smile or smarl, which can be disarming to someone unfamiliar with dalmatians. Dalmatians can be very vocal they coo, grunt, and sometimes give you a whistling yawn when trying to be particularly coy (usually seen when they are trying to avoid punishment).

Text 46

Answering Some Questions on the Peculiarities of the Dalmatian Breed

1. Why are these dogs typically in animal shelters?

Dalmatians typically end up in shelters for several reasons.

- **Overbreeding.** As a result of the Disney movies many parents rushed out to buy their children a dalmatian thinking they would be just like the cute, bouncy puppies they saw in the movies. These people didn't stop to think that the cute little puppy they brought home would quickly grow into a 50-pound energetic dog.
- **Problem behavior.** Dalmatians are often headstrong and stubborn and if you do not provide consistent training and boundaries you will end up with an unmanageable adult. Dalmatians can become easily bored and have an independent streak. Owners not willing to spend enough time with their dal will end up with a dog that is rambunctious and destructive typically developing problem behavior such as fence climbing, chewing, digging, or barking.
- **This breed, although smart, can be stubborn to train.** Conventional training does not work with dalmatians. They respond best to positive training methods as opposed to methods which rely on scolding and telling the dog "no" all the time. These dogs are often dumped in shelters by owner unwilling to take the time to properly train them.

2. How do these dogs handle rescue or shelter life?

No dog thrives in a shelter situation. As with any other breed, dalmatians in shelters can become frantic and start barking and jumping on the kennel or they become depressed.

3.Who should own this breed?

The ideal dalmatian owner should be patient and committed to giving them the attention and training they require. Many dalmatian owners have found themselves overwhelmed and unprepared for the time and attention this breed requires. People that work long hours or are away from their home for extended periods of time should not own a dalmatian.

4. Is this breed good with children?

Dalmatians make good family pets in the right situation. Parents with small children (under 6 years) should be aware that dals can be very exuberant and can accidentally knock down a child. Small children must be taught not to poke eyes or pull tails; both dals and children need to learn proper behavior. However, please understand that no dog should ever be left unsupervised with children; children don't always know how to treat a dog and every dog does have its limit.

5. How easy is training this breed?

Dalmatians have a reputation for being stupid and difficult to train. This is absolutely incorrect, as they are actually extremely intelligent and creative. They are smart enough to recognize a situation where the owner is unable or unwilling to enforce a command.

6. Is this breed good with other dogs in general?

Dalmatians usually get along well with other dogs and do well in multi-pet households. Dals can get along great with cats if introduced properly

GLOSSARY

A

absorb – поглощать
absorption - поглощение
acceptance of orders - принятие приказов
accident – авария, катастрофа, происшествие
acid – кислота
    citric ~ - цитрусовая кислота
    lactic ~ - молочная кислота
acquire - приобретать, получать
advanced - передовой
agent- вещество, компонент
    extinguishing ~ - огнетушащее вещество
agility – подвижность; ловкость
aircraft - самолет
alarm - сигнал тревоги; тревожная сигнализация
    fire ~ - сигнал пожарной тревоги
alert - тревога; посылать сигнал тревоги
allow - позволять
apparatus - аппарат
    breathing ~ - дыхательный аппарат
appliance - приспособление, устройство; пожарная машина
    aerial ~ - пожарная автолестница, пожарный автоподъемник
    fire ~ - пожарный автомобиль
    first-aid ~ -s - первичные средства пожаротушения
    foam making ~ - пеногенерирующее устройство
apply – применять, использовать
application – применение, использование
apprenticeship – ученичество
APR (Air Purifying Respirator) – фильтрующий респиратор
area - площадь, зона
    fire ~ - район выезда пожарной части
    affected ~ - зона поражения
arm – рычаг; плечо
arrive – прибывать
arson - поджог
ash – пепел, зола
axe - топор

B

background - происхождение, истоки
band - отряд, группа

bar – пожарный лом
basket - люлька
battalion - пожарная часть из нескольких выездов, гарнизон
behaviour - поведение
    emergency ~ - поведение при чрезвычайной ситуации
    fire ~ - динамика пожара
belt - ремень, пояс
    hook ~ - пожарный пояс с карабином
blanket - покрывало; тушить пожар путем изоляции *(нанесением пенного слоя)*
    fire ~ - пожарное покрывало, кошма
boom – стрела
    articulated ~ - стрела коленчатого автоподъемника
    lifting ~ - кран (*подъемная стрела*)
    telescoping ~ - телескопическая (*выдвижная*) стрела автоподъемника
boots - сапоги
    fire ~ – пожарные сапоги
brancher - разветвитель
    hose ~ - рукавный разветвитель
breathing apparatus - дыхательный аппарат
brick - кирпич
brigade - бригада, команда, подразделение
    fire ~ - пожарный расчет
burn - ожог ; гореть
    thermal ~ - термический ожог
by-products - побочный продукт

C

cable - кабель; канат, трос
campfire – костер
cannon – ствол
    water ~ - водяной ствол
capacity – объем, вместимость; производительность; способность
captive – содержащийся в неволе, пленный
car - автомобиль (*легковой*)
    staff ~ - штабной автомобиль
carbine - карабин
carbon - углерод
    ~ dioxide - двуокись углерода
    ~ monoxide - окись углерода, угарный газ
carry out – осуществлять
cart - тележка
cartridge - патрон
    chemical absorbent ~ - регенеративный патрон
cause - причина; вызывать (*являться причиной*), причинять

cease - прекращать(ся)
center - центр
fire-fighting control ~ - центр управления по тушению пожара
centurion – начальник отряда в сто человек
certificate – удостоверение; свидетельство
chemical – химикат; химическое вещество
dry ~ - сухой (*огнетушащий*) порошок
multi-purpose dry ~ - многоцелевой сухой (*огнетушащий*) порошок
regular dry ~ - обычный сухой (*огнетушащий*) порошок
wet ~ - влажное химическое (*огнетушащее*) вещество
chinstrap – подбородочная лямка (*защитной каски*)
circuit – цепь
clearance – очистка, расчистка
climb – взбираться; подниматься
cloth – ткань
clothing - одежда
fire protective ~ - огнезащитная одежда
full protective ~ - изолирующая защитная одежда
personal protective ~ - индивидуальная защитная одежда
special ~ - спецодежда
waterproof - водозащитная одежда
coat - куртка
collapse - разрушение, обрушение
combine – сочетать(ся)
combined with – в сочетании с
combustible - горючее, топливо; горючий, воспламеняющийся
combustion - горение, возгорание
flaming ~ - пламенное горение
command structure - структура управления [командования]
commander – руководитель, командир
incident ~ – руководитель тушения пожара
communications - средства связи
complication - сложность
component - компонент
compound - соединение; состав
conduct - проводить (*электричество, тепло*)
conducting – токопроводящий
confinement – ограничение распространения пожара
consequence - последствие
construction - строительство
building ~ - строительство зданий и сооружений
contain - содержать
content - содержание
heat ~ - теплосодержание
moisture ~ - содержание влаги

contents - содержимое
cool – охлаждать
cooling - охлаждение; тушение пожара уменьшением температуры
cord – шнур; провод
corrosive – коррозийный
courage – смелость
couvre-feu [curfew] – колпачок для тушения огня;
сигнал для тушения света и огня
cover – крышка ; закрывать, покрывать
coverall - комбинезон
crack – трещина ; трескаться
crawl - ползти
create - создавать
crew - караул, пожарный расчет, подразделение
cuffs - краги
cut – порез
cutter - резак

D

damage – повреждение, разрушение; ущерб, наносить ущерб
dangerous - опасный
date back - относиться (*к какой либо дате*)
debris - мусор; завал, обломки
flying ~ - летающий мусор (*при сильном ветре, урагане и др*.)
decomposition - разложение, распад
decrease – уменьшение; уменьшать(ся)
de-energize - обесточить
define - определять; устанавливать значение
density - плотность
department - отдел; ведомство
fire ~ - управление пожарной охраны; пожарное депо; пожарная часть
private fire ~ - частная [объектовая] пожарная часть
public fire ~ - муниципальная пожарная часть
deprive (*of*) – лишать (*чего-либо*)
designation - обозначение
letter ~ – буквенное обозначение
designator – значок
detachable - съемный
detector – датчик; (*пожарный*) извещатель
heat ~ - тепловой пожарный извещатель
smoke ~ - дымовой пожарный извещатель
determine - определять; устанавливать
develop – разрабатывать
device - устройство, приспособление, прибор
heat sensitive ~ - теплочувствительное устройство

raising and turntable ~ - подъемно-поворотное устройство
disaster – бедствие, катастрофа
natural ~ – стихийное бедствие
discharge - выстрел; выпуск; выпускать
dispatch – направлять [высылать] пожарную команду
dispatcher - диспетчер
drill - упражнение, тренировка; отработка приемов
~ ground - тренировочная площадка
driving – вождение
dust - пыль
duty – дежурство, наряд

E

effect - эффект; (воз)действие
effective - эффективный
effort - усилие; действие; программа или объект работ
elevator - элеватор
jet ~ - гидроэлеватор
elimination – устранение, удаление
embers – горячая зола; тлеющие угли
emerge - появиться
emergency - авария, чрезвычайная ситуация
~ call - сигнал аварии
~ situation - аварийная обстановка, чрезвычайная ситуация
fire ~ - чрезвычайная ситуация, связанная с пожаром
energize - включать ток; создать поле
engine – двигатель, мотор; (пожарный) автомобиль
battle ~ - танковый двигатель
fire ~ - пожарный автомобиль
self-propelled fire ~ - самоходный пожарный автомобиль
steam-powered ~ - паровой насос (автомобиль)
engineering - техника
fire-fighting ~ - пожарная техника
equip (with) – оборудовать (чем-либо)
equipment – оборудование
energized electrical ~ - электрическое оборудование, находящееся под напряжением
fire ~ - пожарно-техническое оборудование
rescue ~ - спасательное снаряжение
fire-fighting ~ - пожарное оборудование, инвентарь
escape – эвакуация; эвакуироваться
evaporate – испаряться
event - случай
fire ~ - пожар

evolution - развитие
exclude – исключать, удалять
exhaust - отсасывать; откачивать
    smoke ~ - дымоотсос
exit - выход
    emergency ~ - аварийный [запасный] выход
exothermic - экзотермический
explode – взрывать
explosion – взрыв
exposure (protection) - защита соседних зданий, сооружений, имущества от воздействия факторов пожара
extinction – тушение
  methods of ~ - способы тушения
extinguish - тушить
extinguisher – огнетушитель
    carbon dioxide ~ - углекислотный огнетушитель
    foam ~ – пенный огнетушитель
    halon (halogenated) ~ - хладоновый огнетушитель
    multi-purpose dry chemical ~ - многоцелевой огнетушитель
   ordinary dry chemical ~ - огнетушитель общего назначения
    portable ~ – переносный огнетушитель
    special dry chemical ~ - специальный порошковый огнетушитель
    water-based ~ – огнетушитель на водной основе
 extinguishing - тушение
    fire- ~ - пожаротушение
    impulse fire ~ - тушение путем подачи импульсного заряда
extraction - вытяжка, удаление
    smoke ~ - дымоудаление

F

fat - жир
field - поле; область (*знаний, деятельности*)
    ~ of knowledge - область знаний
fight – тушить (*пожар*)
fire – пожар
    ~ headquarters – штаб пожаротушения
    scene of ~ - место пожара
    site of ~ - местонахождения пожара
firefighter - пожарный
fireproof - огнестойкий, пожарозащищенный
fireproofing – пропитка огнестойким составом
fixture – арматура; зажимное приспособление
flame - пламя
flammable – воспламеняемый
flashlight – ручной электрический фонарь

float – плавать (*на поверхности*)
foam – пена
aqueous film-forming ~ (AFFF) – пленкообразующий пенообразователь на водной основе
film-forming fluoroprotein ~ (FFFF) – пленкообразующая фторпротеиновая пена
force - сила
fire-fighting ~-s - подразделения пожарной службы
fuel - топливо, горючее
flammable - воспламеняемый, (*легко*) воспламеняющийся
fuse - плавить

G

garment - одежда
gas - газ
~ mask - противогаз, респиратор
gasoline - газолин, бензин
gear – передаточный механизм, привод; снаряжение
emergency ~ - аварийное снаряжение
firefighter ~ - боевое снаряжение пожарного
full ~ - полное снаряжение
gloves – перчатки, рукавицы
go out - погаснуть
goggles – защитные очки
grease - жир; смазка
guide – проводить; направлять
gun - лафетный (*пожарный*) ствол

H

halon – хладон
halogenated – хладоновый (галогенпроизводный)
harmful - вредный
hazard - опасность, вредность
fire ~ - опасность воздействие факторов пожара
life safety ~ - опасность для жизни
hazardous – опасный
headband – пелерина, тулейка (*подвеска защитной каски, подгоняемая под размер головы*)
hearth - очаг
heat – тепло; нагревать
heat-resistant – теплозащитный, термостойкий
heat-repellent – теплоотражательный
helmet - шлем, каска

honesty – честность
hood – капюшон; подшлемник
hook - крюк, багор
hose - пожарный рукав
    suction ~ - всасывающий пожарный рукав
    ~ reel – рукавная катушка
hoseline - рукавная линия
hydrant - пожарный гидрант
    ground ~ - подземный гидрант
    pillar ~ - наземный гидрант
hydraulics – гидравлика
hydrocarbon – углеводород
  halogenated ~s – галонпроизводные углеводородов

I

identification - идентификация, выявление; опознание
identify - отождествлять; опознавать
ignite - зажигать(ся), воспламенять(ся)
ignition **–** зажигание, загорание, воспламенение
    auto-ignition - самовоспламенение
impact – воздействие; удар, столкновение
inactivate – замедлять (деятельность, активность)
incident - происшествие, инцидент
include - заключать, содержать в себе
increase - увеличивать(ся)
inflammable - воспламеняемый; воспламеняющийся
infrastructure - инфраструктура
ingredient - составная часть, ингредиент, компонент
inhalation – ингаляция, вдыхание
    smoke ~ - вдыхание дыма
inhibit – ингибировать, тормозить, замедлять
injury – повреждение, травма, рана
install – устанавливать
installation - установка
    fixed fire extinguishing ~ - стационарная пожарная установка
insulated – изолированный; с теплозащитным покрытием
insulation – изоляция; изоляционный материал
intact – неповрежденный
intermediate - промежуточный
involve - включать в себя; подразумевать, предполагать
ISO (International Standards Organization) – Международная организация по стандартизации

J

jacket - куртка
jet - струя (*воды*)

K

kit - комплект [набор] (*принадлежностей или инструментов*)
    fire rescue ~ - комплект [набор] спасательного оборудования
    tool ~ - комплект [набор] инструментов
knowledge **-** знания

L

label - бирка, этикетка
ladder **-** лестница
    aerial ~ - многосекционная выдвижная [автомеханическая] лестница
    extension ~ - выдвижная (*пожарная*) лестница
    folding ~ - складная лестница
    ground ~ - лестница для спуска на землю
    hanging ~ - подвешенная (*над землей*) лестница (*для эвакуации*)
    hook ~ - лестница-щтурмовка
    sectional ~ - коленчатая выдвижная лестница
    three-section ~ - трехколенная лестница
    turntable ~ - автомеханическая лестница
last - длиться
law – закон
    fire service ~ - пожарное законодательство
layoff - увольнение
leak – утечка
leave - оставлять, покидать, уезжать
legislation - законодательство
light – свет
light-reflecting – светоотражающий
lining - подкладка
liquid - жидкость; жидкий
liquidation – ликвидация
logo (logotype) - логотип
loss - потеря; ущерб
    ~ of life - потеря жизни

M

machinery - машины; машинное оборудование
magnesium – магний
maintain – производить ремонт; обслуживать
man – снабжать людьми, укомплектовывать личным составом
manning – укомплектование личным составом
marshal - ответственный
    fire ~ - ответственный за пожарную безопасность
mask - (*защитная*) маска
    gas ~ - противогаз
matter - материал, вещество
matter-in-motion – материя в движении
meaning - значение
means - средство, средства; способ
    protection ~ – средства защиты
mist – туман
mitt(en) – рукавица; варежка
modern – современный
molten - расплавленный

N

net - сеть, сетка
    life [safety] ~ - спасательное прыжковое полотно
    suction filter ~ - всасывающая фильтрующая сетка
NFPA (National Fire Protection Association) – Национальная ассоциация противопожарной защиты США
non-conducting - непроводящий, изолирующий
nozzle - насадок, сопло, пожарный ствол, патрубок

O

occupant - жилец, обитатель
occupation **-** профессия, род занятий
occur – иметь место, случаться, происходить
officer - должностное лицо, служащий, офицер
    fire ~ - офицер пожарной охраны
    fire prevention ~ - должностное лицо, ответственное за пожарную профилактику; офицер пож.надзора
    supervising ~ - ответственное должностное лицо; инспектор
oil – нефть; масло
    cooking ~ - масло, употребляемое в пищу
    lubricating ~ - смазочное масло
ongoing - происходящий

order – приказ; приказать
ordinary – обычный
origin – источник
    room of fire ~ - источник пожара
outfit – обмундирование, снаряжение (*пожарного*)
outlet - выход; выходное отверстие
outrigger - аутригер, выносная опора (*пожарного*) автомобиля
overcome – преодолевать
overhauling - окончательное тушение всех тлеющих участков
overload - перегружать
own - собственный
    on one`s (his, her, our, their) ~ - самостоятельно
oxygen - кислород

P

pack - пакет; блок; упаковка
    back ~ - ранцевый огнетушитель
PAD (Personal Alert Device) – индивидуальное устройство тревожной сигнализации пожарного
paint **–** краска
pants - брюки
paper - бумага
participate - принимать участие
PASS (Personal Alert Safety system) - индивидуальное устройство тревожной сигнализации пожарного
peacetime – мирное время
penetrate - проникать внутрь, проходить
petrol - бензин, моторное топливо
pictogram – пиктограмма (отображение общего содержания сообщения в виде рисунка)
pillar - стояк
    fire hydrant ~ - корпус пожарного гидранта
pin - булавка; чека (*огнетушителя*)
pipe – труба
platform – платформа
    hydraulic ~ - платформа на гидравлическом автоподъемнике
pole – багор, шест
    pike ~ - потолочный багор *(кирка)*
possess - иметь, владеть чем-либо
potassium - калий
powder - порошок
power - сила, мощь, энергия
    human ~ - человеческая сила
    animal ~ - животная сила

power take-off - отбор мощности
probation - стажировка
precipitation – осаждение, осадок
prevent - предотвращать
prevention - предотвращение
principles - основы
probationer – стажер
propagation - распространение
    fire ~ - распространение пожара
protection – защита
    fire ~ - борьба с пожарами, пожарная защита
    respiratory ~ - защита органов дыхания
provide – обеспечить, внести (*вклад*)
pump - насос
    ~ supervisor - ответственный за работу насоса
    centrifugal ~ - центробежный насос
    reciprocating ~ - поршневой насос
    self-propelled ~ - самоходная насосная установка
pumper - автонасос
puncture – прокол
put out – тушить (*пожар*)

Q

qualification **-** квалификация
    practical ~ - практическая характеристика
                [квалификация, подготовленность]
qualify - точнее определять; приобретать какую-либо
        специальность

R

radio - радио
    mobile [fixed] ~ - переносная [стационарная] радиостанция
ram:
    hydraulic ~ - подъемное или разжимное устройство
rapid – быстрый
rather than – а не
reaction – реакция
readily – легко, охотно
recognize – распознать
record – регистрировать факт
reduce - уменьшать, сокращать
reduction - уменьшение, сокращение
reel - катушка

hose ~ - рукавная катушка
reflective - отражающий
regard - относиться, рассматривать, считать
regardless – невзирая на, не считаясь с
reign - царствование, господство; царствовать
release - освобождать; выпускать
reliability - надежность
reliable - надежный
remain - оставаться
removal - устранение, удаление
remove - устранять, удалять
smoke ~ - дымоудаление
rescue – спасение; спасать; спасательный
confined space ~ - спасательные работы в ограниченном пространстве
trench ~ - спасательные работы, проводимые в канаве
swiftwater ~ - спасательные работы на воде
rescuer - спасатель
residues – остатки (*после пожара*)
resistance - стойкость; сопротивление; устойчивость
respirator – респиратор, дыхательный аппарат, противогаз
route – путь движения, маршрут
fire ~ - маршрут эвакуации при пожаре
repairing - ремонт
require – требовать
requirement - требование
rescue - спасение; спасать
~ workers - спасатели
respond (*to*) - отвечать; реагировать; выезжать по сигналу тревоги
response – ответ, реагирование; выезд по сигналу тревоги
~ time – время реагирования
responsibility – ответственность
review – обозревать
ring *I* – кольцо (*несущее нагрузку*)
ring - звенеть; звонить
~ the bell – звонить в колокол
Rod of Asclepius – жезл Эскулапа
routine – обычный, рутинный (*по установленному порядку*)
rubber - резина; каучук

S

safe **-** безопасный, надежный
safety - безопасность; сохранность; надежность
salvage - спасение имущества (*при пожаре*)

saw – пила
SCBA (Self-Contained Breathing Apparatus) – автономный изолирующий дыхательный аппарат
seal - уплотнять
search – поиск; искать
searchlight - поисковый прожектор
self-propagation - самовозгорание
service - охрана, служба
    fire ~ - пожарная охрана
shield – щиток; ограждение
    face ~ – лицевой щиток маски или пожарной каски, забрало
shift – смена
shot - выстрел
similar - подобный
site - место; местонахождение
    ~ of fire - место пожара
skill - мастерство, умение, навык; ловкость, сноровка
smell – запах; пахнуть
smoke – дым
    ~ exhauster - дымоудалитель
smother - тушить пожар с прекращением доступа кислорода к пламени
sodium - натрий
solid - твердое тело; твердый
solvent - растворитель
spark - искра
spot - место; очаг (*возгорания*)
spray - распыленная струя; распылитель
spread – распространение; распространяться
spreader – разжимное устройство
sprinkler - спринклерный ороситель
squad - отделение, боевой расчет, команда
staff – штаб; личный состав
  command ~ - штаб управления, оперативная группа
stamina – запас жизненных сил; выносливость
starvation – тушение пожара за счет ограничения горючего в зоне горения
station - станция
    fire ~ - пожарная часть
    fire pump ~ - насосная станция
steam – пар
steer – управлять, вести *(автомобиль)*
stone – камень
storage – хранение, склад
store – хранить
strap - строп, лямка

chin ~ - подбородочная лямка
stream - струя
fire ~ - струя воды (*из пожарного ствола*)
strength - сила
general physical ~ - общая физическая сила [подготовка]
stripe - полоса
light-reflecting ~ - светоотражательная полоса
subject - предмет
wide range of ~ - широкий ряд предметов
substance – вещество
suction - всасывание
sufficient - достаточный
suggest – наводить на мысль, внушать; предполагать
suit *I* - костюм
asbestos ~ - теплоотражательный костюм
fire entry ~ - боевой пожарный костюм
heat- repellent [- resistant] ~ - теплостойкий костюм
one-piece ~ - комбинезон
protective ~ - защитный костюм
proximity ~ - теплозащитный костюм с отражательным покрытием
turnout ~ - костюм пожарного с выправленными поверх сапог брюками
suit *II* – подходить, соответствовать
supervise - наблюдать (*за чем-либо*), надзирать, заведовать
supervisor - инспектор; контролер
pump ~ - ответственный за работу насоса
supply – подача, снабжение; подавать, снабжать
air ~ - подача воздуха
water ~ - водоснабжение
supression - подавление, тушение (*пожара*)
~ system – система подавления, система тушения
suspendors - подтяжки
sustain - поддерживать
sweep - мести; водить из стороны в сторону
sympathy - сочувствие, сострадание

T

take place - происходить
tank - резервуар; цистерна
~ of water - цистерна с водой
task - задача, задание, работа
team - команда, отряд, подразделение
fire ~ - пожарная команда
tender - автомобиль
foam ~ - пожарный автомобиль пенного тушения

rescue ~ - пожарный автомобиль аварийно-спасательной службы
salvage ~ - пожарный автомобиль водозащитной службы
water ~ - автоцистерна
tetrahedron – тетраэдр (*четырехгранник, у которого все грани – треугольники, т.е. треугольная пирамида, от греч. tetra (четыре) и herda (основание, сторона*)
thick - толстый
thickness - толщина
threat – угроза
threshold – порог, отправной пункт
tiller – подъемник
tip – верхняя часть *(пожарной)* лестницы
titanium – титан
tool - инструмент
cutting and wrecking ~ - шанцевый инструмент
rescue ~-s – спасательные инструменты
tower - башня, каланча
fire ~ - пожарная каланча
trace - прослеживать
training - тренировка, обучение, подготовка
triage – (*медицинская*) сортировка пострадавших
treat - обращаться с чем-либо
triangle – треугольник
tribute – дань; посвящение
trigger - защелка; ударник (*огнетушителя*)
trousers – брюки
~ with back – брюки со спинкой
truck - (*грузовой*) автомобиль
fire ~ - пожарный автомобиль
hook-and-ladder ~ - автоподъемник
hose reel ~ - пожарный рукавный автомобиль
specialized fire ~ - специальный (*пожарный*) автомобиль
water ~ - автоцистерна

U

undergo - подвергаться, претерпевать
uniform - униформа
unit - установка, подразделение, элемент; автомобиль
control ~ - штабной пожарный автомобиль
communications ~ - автомобиль связи
unquestioning - полный, абсолютный, без вопросов
unsafe - опасный, ненадежный
upholstery – обивка мебели

V

valve - клапан, вентиль
valve off – закрыть клапан
van - вагон; автомобиль
    HasMat (hazardous materials) ~ - автомобиль для тушения опасных материалов
    raduio ~ радиофицированный автомобиль
vapo(u)r - пар; туман
vaporizing – летучий, испаряющийся
vehicle - автомобиль, транспортное средство
    command ~ - штабной пожарный автомобиль
    emergency ~ - автомобиль аварийной службы
    hose ~ - автомобиль рукавный
    rescue ~ - автомобиль аварийно-спасательной службы
    water supply ~ - автоцистерна
victim – жертва
visibility - видимость; обзор
vision – зрение; видение
visor - лицевой щиток маски или пожарной каски
volatile - летучий
voltage - электрическое напряжение
volume - объем
volunteer - доброволец

W

wagon – вагон-платформа; автофургон
wall - стена
warn - предупреждать, оповещать
watch **-** (*пожарный*) караул, дежурство, наблюдение; наблюдать
water - вода
    ~ - carrier - носильщик воды
    ~ - main – водопроводная магистраль
    ~ mist – водяной туман
    ~ - pipe – водопроводная труба
    ~ spray – распыленная вода
    stream of ~ - струя воды
        waterproof - водонепроницаемый, водостойкий
wear - одежда; изнашивание; носить одежду
wheel – колесо
wildfire – растительный пожар
wiring – электропроводка
withstand - противостоять
wood - дерево; древесина

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Учебное пособие
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(на английском языке)

Редактор: Агафонова Н.С.

Подписано в печать 20.03.2007

Формат 60x84/1/16 Бумага писчая
Тираж 1000 экз. Заказ № 134
10 авт. л.

Организационно-научная и редакционно-издательская группа
Ивановского института ГПС МЧС России
153011 г. Иваново, пр. Строителей, 33