Министерство образования и науки Российской Федерации
Сибирский федеральный университет

# ПРАКТИЧЕСКИЙ КУРС ВОЕННОГО ПЕРЕВОДА (ВТОРОЙ ИНОСТРАННЫЙ ЯЗЫК)

## Военно-морские силы США, оружие массового поражения

Учебно-методическое пособие
для практических занятий

*Электронное издание*

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П692 Практический курс военного перевода (второй иностранный язык). Военно-морские силы США, оружие массового поражения: учебно-методическое пособие для практических занятий [Электронный ресурс] / сост.: Ю. Ю. Лушников, М. А. Александрович, А. М. Мандранов. – Электрон. дан. – Красноярск: Сиб. федер. ун-т, 2013. – Систем. требования: PC не ниже класса Pentium I; 128 Mb RAM; Windows 98/XP/7; Adobe Reader V8.0 и выше. – Загл. с экрана.

В учебно-методическом пособии с целью развить у обучаемых навыки при переводе смыслового запоминания, выделения в тексте главной мысли и умения кратко формулировать основные положения приведены русские и английские материалы по организационной структуре и вооружению Военно-морских сил США, а также рассмотрены различные виды, характеристики и средства защиты от оружия массового поражения.

Предназначено для курсантов учебных военных центров, обучающихся по военно-учетной специальности «Лингвистическое обеспечение деятельности», а также может быть использовано преподавателями при подготовке и проведении занятий.

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# ПРЕДИСЛОВИЕ

Учебный материал в данной работе изложен таким образом, чтобы позволить учащимся накопить необходимый запас активной терминологии и развить основные переводческие навыки и умения: зрительно-устного перевода с листа, зрительно-письменного перевода, двустороннего устного перевода, письменного и устного перевода, а также устного реферирования военных материалов (печатных или в аудио-, видеозаписи) как на русском, так и на английском языке.

Структура учебного пособия и предлагаемая работа с ним в процессе обучения военному переводу позволяют одновременно решать несколько задач (тематико-терминологическую, практическую), а именно:

- выработать навыки активного владения английской военной терминологией в данной предметно-тематической области при минимальном пользовании словарем;
- развить и совершенствовать навыки устного и письменного перевода военных текстов в пределах указанной темы;
- развить навыки использования англо-русских военных словарей и справочной литературы;
- научить правильно выбирать переводческие соответствия: лексические соответствия и безэквивалентную лексику, грамматические соответствия и безэквивалентные грамматические единицы;
- совершенствовать навыки двустороннего перевода.

Цель терминологического аспекта – ознакомить обучаемых с современным состоянием вооруженных сил США в пределах изучаемой темы. Практический аспект предусматривает развитие речевых навыков, овладение терминологией, совершенствование различных видов устного и письменного перевода.

Для изучения данной дисциплины необходимо знание основ военного дела, владение военной терминологией на русском языке, а также владение основами английского языка.

Методические указания построены по тематическому признаку и состоят из двух тем. В соответствии с тематическим планом темы разбиты на уроки, унифицированные по структуре и снабженные поурочным словарем активной лексики.

Урок является основной единицей организации учебного материала и рассчитан на два часа аудиторной работы. Работа над каждой темой завершается просмотром тематического видеофильма на английском языке, затем учащиеся получают задание подготовить (с использованием технических средств обучения) рефераты по теме просмотренного фильма.

Работа над уроком включает:

1) вводно-подготовительное упражнение и словарь активной лексики по теме;

2) основной текст по теме;

3) переводческие упражнения.

*Вводно-подготовительные упражнения.* К этим упражнениям относятся упражнения на развитие фонетических навыков учащихся, при выполнении

которых преподаватель проверяет правильность произношения отдельных труднопроизносимых слов и словосочетаний.

*Словарь.* Поурочные словари включают только необходимый минимум военной терминологии, поэтому они не освобождают учащихся от необходимости работать с двуязычными словарями. Учащиеся должны вести собственные тематические словари (для незнакомых слов и выражений, встретившихся в тексте урока). Работа со словарем ведется на протяжении всех лет учебы.

*Основной текст.* Тексты уроков предназначены для введения, отработки и первичного закрепления новой военной терминологии, ознакомления учащихся с фактическим материалом по вооруженным силам США и являются базой для отработки навыков различных видов перевода с английского языка на русский или реферирования в зависимости от объема, степени трудности и жанровой принадлежности.

Тексты целесообразно использовать для отработки зрительно-устного и зрительно-письменного перевода, письменного и устного перевода на слух.

Предполагается работа со специальными словарями и различным справочным материалом.

Первую часть основного текста рекомендуется переводить в аудитории методом зрительно-устного перевода по предложениям. Если данная часть текста урока содержит определенные переводческие трудности, то ее рекомендуется сначала прочесть всю, разобрать эти трудности, а затем уже переходить к последовательному переводу.

Оставшуюся часть текста можно использовать для развития навыков письменного перевода на слух, начиная с наиболее легкого вида работы «перевод-диктовка», когда преподаватель читает текст по предложениям, а учащиеся записывают их перевод.

Вся выделенная в тексте военная терминология, а также сокращения подлежат заучиванию. Качество их усвоения систематически проверяет преподаватель путем опроса или проверочных диктантов, которые, как правило, проводятся в быстром темпе.

*Вопросы к тексту* даются для проверки усвоения курсантами содержания данного урока, а также развития навыков их устной речи. С этой же целью может быть предусмотрен и пересказ текста на английском языке, причем необходимо добиваться того, чтобы курсанты пересказывали текст по возможности ближе к оригиналу и употребляли в своей речи максимальное количество активной терминологии.

*Упражнения на перевод вопросов с русского языка* предназначены для:

а) закрепления терминологии и фразеологии (русской и английской);

б) подготовки к двустороннему переводу на слух.

Для изучающих английский язык в качестве второго иностранного языка перевод вопросов с русского языка всегда представлял определенные трудности, следовательно, работа с этими упражнениями требует особого внимания. Конечная цель этих упражнений – научить курсантов переводить вопросы с русского языка быстро, четко, грамматически и стилистически правильно, с соблюдением всех норм фонетики английского языка.

*Упражнения на автоматизированное употребление военной лексики* даются с целью научиться быстро переключаться с родного языка на иностранный и с иностранного на родной. Поэтому в уроки включены упражнения, предусматривающие создание прочных ассоциативных связей между русскими (английскими) и английскими (русскими) единицами. Для создания прочных навыков быстрого переключения с одного языка на другой такие упражнения рекомендуется проводить в быстром темпе. На начальном этапе обучения в них включены знакомые учащимся термины и терминологические словосочетания, а позже – уже целые предложения, которые также рекомендуются для перевода в быстром темпе, что является одним из элементов подготовки курсантов к синхронному переводу.

*Упражнения на зрительно-устный перевод с листа* – один из наиболее сложных видов переводческой деятельности. Прежде всего, здесь необходимо учитывать, что при переводе с листа времени для детального ознакомления с текстом переводчику не предоставляется, а это значит, что он должен уметь быстро читать текст про себя, осмысливать содержание текста, давать его перевод и одновременно схватывать зрительно определенную часть дополнительного текста. Практика показывает, что учащиеся успешно справляются с этим видом работы, если они умеют быстро читать про себя, осмысливать прочитанный текст мгновенно, давать вслух перевод, читая в то же время про себя текст далее.

*Абзацно-фразовый перевод* целесообразно начинать с перевода иностранного текста по предложениям. Это упражнение рекомендуется начинать с двукратного предварительного чтения. Абзацно-фразовый перевод развивает слуховую и логическую память учащихся, развивает навыки синхронного перевода, а также навыки восприятия иностранной речи на слух.

*Упражнения на зрительно-письменный перевод с русского языка на английский и с английского языка на русский* рекомендуется делать в часы самостоятельной подготовки.

*Упражнения на реферирование.* В практической работе переводчику часто приходится кратко излагать содержание каких-либо документов после беглого ознакомления с ними либо по-русски, либо по-английски в зависимости от обстановки.

В методических указаниях предлагаются для реферирования как русские, так и английские материалы. Такие упражнения развивают у курсантов навыки смыслового запоминания, выделения в тексте главной мысли и умение кратко формулировать основные положения своего доклада.

Работу с этими упражнениями обычно начинают с ознакомления с текстом. После этого учащиеся составляют краткий план доклада по этому тексту или же весь доклад, стремясь в краткой форме изложить содержание основных положений текста.

*Упражнения на двусторонний перевод* предназначены для развития у курсантов навыков перевода беседы или переговоров между представителями различных стран, а также навыков допроса военнопленных.

# ВВЕДЕНИЕ

Учебно-методическое пособие предназначено для практических занятий по дисциплине «Практический курс военного перевода (второй иностранный язык)» с курсантами четвертого курса Учебного военного центра Военно-инженерного института Сибирского федерального университета, проходящих обучение по программе подготовки военных переводчиков-референтов, и разработаны в соответствии с учебной программой и тематическим планом для специальности «Лингвистическое обеспечение военной деятельности». Цель методических указаний – сформировать первичные навыки устного и письменного перевода, дать нужный минимум справочного и лексического материала по предложенной теме.

Необходимость издания данных методических указаний обусловлена тем, что учебная литература по данной дисциплине, которая имеется в настоящее время, устарела и не рассматривает учебный материал в комплексе. В настоящей работе предметно-тематическое содержание в полном объеме охватывает разделы учебной программы по названной дисциплине для специальности «Лингвистическое обеспечение военной деятельности».

Основная задача методических указаний – дать знания в области английской военной терминологии, развить прочные навыки устного и письменного перевода в данной предметно-тематической области при минимальном пользовании словарем. Содержание методических указаний соответствует требованиям Государственного образовательного стандарта профессионального образования, квалификационным требованиям к военно-профессиональной подготовке выпускников высших учебных заведений и учебной программе.

В работе приведен учебный материал, раскрывающий организационно-штатную структуру, задачи и вооружение ВМС США, а также информацию об оружии массового поражения (ОМП). При составлении методических указаний учитывались современные данные о ВС США, взятые из открытых печатных и электронных изданий последних лет.

# THE U.S. NAVY

## Lesson 1

## THE U.S. NAVY ORGANIZATION

*Exercise 1. Read and learn the following words and word combinations by heart:*

**WORD LIST**

| | |
|---|---|
| the Department of the Navy | ВМС США |
| the Operating Forces | боевые силы ВМС США |
| the Shore Establishment | береговые части и учреждения |
| the Coastal Guard | береговая охрана |
| the Navy Department | Министерство ВМС США |
| the Secretary of the Navy | министр ВМС США |
| the Chief of Naval Operations (CNO) | начальник штаба ВМС США |
| sea frontier forces | силы военно-морских округов |
| fleet | флот |
| the Military Sea | военно-морская транспортная служба |
| district | округ |
| type organization | организация однородных сил флота |
| amphibious command | командование амфибийных сил |
| destroyer command | командование миноносных сил |
| flotilla | флотилия, бригада |
| squadron | эскадра (крупных кораблей) |
| division | дивизия (крупных кораблей) |
| type commander | командующий однородных сил |
| fleet organization | организация флота |
| task force organization | организация оперативного соединения |
| unified command | объединённое командование |
| sea going forces | силы и средства, предназначенные для действий на море |

**WORD COMBINATIONS**

| | |
|---|---|
| to operate as part of pursuant to law | действовать в составе в соответствии с законом |
| to be assigned to the Operating Forces | входить в состав боевых сил |
| to have a numbered designation | иметь цифровое обозначение (номер) |
| communication call signs | позывные для связи |

## COMMENTARY

### A. Grammar

Word Order and Emphasis in English

It is normal that the most prominent word or group of words is placed at the end of the sentences. This group of words is usually the logic predicate, i.e. it contains some new element.

For example:

*The Department of the Navy consists of three principal parts.*

*There are four regularly constituted fleets.*

But if the writer wants to emphasize any other element of the sentence (other than the subject), he places it at the beginning of the sentence.

For example:

*Under normal peacetime procedures the Commander First Fleet exercises operational control over all forces in the Pacific Coast.*

*Only rarely does the task to be performed by the Navy lends itself to the use of the foregoing organizations.*

In the above case there occurs an inversion of the subject and predicate in which an adverb has taken the front position.

The inversion of subject and predicate must also occur with a negative adverb or negative adverb equivalent in the front position.

For example:

*In no circumstances should it act likewise.*

*Seldom is it necessary to pursue a ship when it is close to her home port.*

**SUMMARY:** Adverbials such as SELDOM, NEVER, HARDLY, EVER, SCARCELY, BARELY, and ONLY ONCE require a change in word order when they open the sentence.

**ASSIGNMENT:** Find in the text all instances of emphatic use of words and groups of words, as well as all instances of inversion. Comment upon every case.

**B.** In the text that follows you will come across such word combinations as "normal administration is carried on", and "under normal peacetime procedures". To translate them, one has to resort to transformations. Such transformations are necessary because of the peculiarities of the languages. For in Russian the phrase "обычное управление" is stylistically incongruous in sentences " обычное управление осуществляется..." therefore, one has to transform the adjective "нормальный" into the adverb. One will act likewise when translating the other sentence.

From among the peculiarities which are typical of the English language there are some things that are implicit. To render them into Russian, one has to convey the meaning that is implied.

For example: ... such shore activities of the Navy and other forces and activities as may be assigned to the Operating Forces of the Navy by the President or the Secretary of the Navy.

The preposition "by" implies here "by the decision of", "by the order of". Hence, one has the full right to translate it: "боевые силы флота выполняют задачи по приказу (решению) президента или министра ВМС".

**C. Glossary**

The lesson, as well as the entire chapter, deals with the Navy, that is why the texts are abundant in naval terms.

NAVY means a state's ships of war, as well as the organization and manpower of a state's force for war at sea. Its Russian counterpart is ВМС (ВМФ).

NAVAL refers to anything associated with the navy. It is used in such word combinations as:

| | | | |
|---|---|---|---|
| NAVAL – | academy<br>air<br>aircraftman<br>area<br>armament<br>aviation<br>base<br>blocade<br>campaign<br>combat<br>district<br>establishment<br>encounter<br>engagement | NAVAL – | force<br>gunfire<br>means<br>power reserve<br>science<br>secretary<br>ship<br>station<br>stategy<br>operations<br>tactics<br>strength<br>support<br>warfare, etc. |

A ship, a basic unit of a navy, is usually referred to as a COMBATANT ship or AUXILIARY vessel depending on her purpose.

COMBATANT as an adjective means prepared to fight or intended for fighting purposes.

The word is used in combinations as follows:

| | |
|---|---|
| COMBATANT – | ship<br>facility<br>vehicle |

Synonyms of the word "ship" are: WARSHIP, MAN-OF-WAR, VESSEL, CRAFT.

WARSHIP is a heavily armed ship used in naval combat.

VESSEL is a hollow structure, capable of floating and of carrying considerable weight.

| | |
|---|---|
| merchant<br>passenger<br>whaling<br>auxiliary | -VESSEL |

Vessels serve as a base of operations at sea.

CRAFT may be used as a singular or collective noun and now is applicable to any type of boat or ship that plies the water. Originally it was found only in the phrase 'small craft', and was applied to smaller vessels, especially to those in the service of ships, such as lighters, tugs, and fireboats, or to those forming part of a navy or fleet. At present the term tends to become a comprehensive term covering all kinds of boats and vessels.

MAN-OF-WAR is the word used in describing warships of the past. It is becoming obsolete now.

FLEET stands for a number of warships under one command, or (2) any naval force, or (3) a national navy.

The word occurs in word combinations as follows:

| | |
|---|---|
| FLEET- | admiral air<br>ballistic missile<br>ballistic missile submarine<br>flagship<br>marine force<br>submarine |

*Exercise 2. Read the following text and translate it into Russian at sight:*

## The Organization of the US Navy

The term "Department of the Navy" is construed to mean the Department of the Navy at the seat of the government; the headquarters, USMC; the entire operating forces of the US Navy, including naval aviation, and of the USMC, including the reserve components of such forces; all field activities, headquarters, forces, bases, installations, activities, and functions under the control or supervision of the Secretary of the Navy; and the Coastal Guard when operating as part of the Navy pursuant to law.

The term 'Department of the Navy' is synonymous with the term 'Naval Establishment'.

The Department of the Navy consists of three principal parts as follows:

1. The Operating Forces of the Navy, which comprise the several fleets, seagoing forces, sea frontier forces, the Military Transportation Service, and such shore activities as may be assigned to the Operating Forces of the Navy by the President or the Secretary of the Navy.

2. The Navy Department, which is the central executive authority of the Department of the Navy, is located at the seat of the government. These organizationally comprise the Office of the Secretary of the Navy, the Office of the Chief of Naval Operations, and the headquarters organizations of the USMC, the Naval Material Command, the Bureau of Naval Personnel, etc.

3. The Shore Establishment comprises all activities of the Department of the Navy not assigned to Operating Forces of the Navy and not part of the Navy De-

partment. This includes the Operating Forces of the Marine Corps which are not assigned to the Operating Forces of the Navy or to a unified or specified combatant command.

*Answer the following; questions:*

1. What does the term 'Department of the Navy' mean?
2. What three principal parts make up the Department of the Navy?
3. What do you think differs the Navy Department from the Department of the Navy?

## The Operating Forces

The Operating Forces of the Navy comprise the several fleets, seagoing forces, sea frontier forces, district forces, Fleet Marine Forces and other assigned Marine Corps forces, the Military Sea Transportation Service, and such shore activities of the Navy and other forces and activities as may be assigned to the Operating Forces of the Navy by the President or the Secretary of the Navy.

Ships of the Operating Forces are organized under three different organizational systems. First, the majority of forces are assigned to Type Commanders for administrative control and for operational control during primary and intermediate training phases.

Second, these same forces are assigned to Fleet Commanders for advanced training and operations.

Third, some elements or these forces are further assigned to task force organizations for specific operations and missions.

## Type Organization

All ships are organized into broad categories under commanders whose titles are self-explanatory, such as Amphibious, Destroyer, Mine, Submarine, Air, etc.

Each type command contains further administrative sub-divisions such as flotillas, squadrons, and divisions or air wings, air groups, and squadrons.

Normal administration is carried on by this organization, and a ship or unit is always under the administrative control of the appropriate type commander, even though under the operational control of a fleet or task force commander.

## Fleet Organization

There are four regularly constituted fleets – the First and Seventh Fleets in the Pacific under the Commander in Chief, Pacific Fleet, and the Second and Sixth Fleets in the Atlantic under the Commander in Chief, Atlantic Fleet.

Under normal peacetime procedures the Commander First Fleet exercises operational control over all forces in the Pacific Coast and the Commander Seventh Fleet exercises operational control over certain forces in the Far East. Similarly in

the Atlantic, Commander Second Fleet exercises operational control over all forces in the Atlantic and Commander Sixth Fleet exercises operational control over certain forces in the Mediterranean.

## Task Force Organization

Only rarely does the task to be performed by the Navy lends itself to the use of the foregoing organizations. In order to provide flexibility of organization and ease of communication, the Task Force Organization (or more properly the Task Fleet Organization) was formed during World War II. Under this system a flexible structure is provided consisting of Fleets further divided into Forces, Groups, Units and Elements. Each subdivision has a numbered designation and appropriate communication call signs.

*Answer the following questions:*

1. As is known, the US Navy forces are normally organized under different organizational systems.
2. What do you think the majority of forces are assigned to Type Commanders for?
3. What regular US Fleets do you know? What Fleet Commander exercises operational control over all forces in the Atlantic?
4. What are Task Forces organized for?

*Exercise 3. Decipher the following abbreviations, and translate them into Russian:*

USMC; USCG; USN; USNR; SLBM; ALCM; ALBM; SIM; SN; SAF; SA; CSUSAF; CSUSA; CNO; CE; CIC; APDS; CONUS; DAF; DD; DN; ECM; EOSM; FA; FM; GM; GZ; HEAT; SAC; TAC; MAC; ADC; ADM; SRAM; NORAD; NSA; NCO.

*Exercise 4. Translate the following words and word combinations by ear:*

**A. from English into Russian:**

to be located at the seat of the government; to be under the operational control; when operating as part of...; to be assigned to; to be under the administrative control of; to have a numbered designation; for the ease of communication; Department of the Navy; the Operating Forces of the Navy; the Secretary of the Navy; the Navy Department; the US Marine Corps; the US Coast Guard; sea district; flotilla; squadron; division;

**B. from Russian into English:**

организационно входить; однородные силы флота; министерство ВМС; начальник штаба ВМС США; аппарат министра ВМС США; округ; командование амфибийных сил; береговые части и учреждения; ВМС; аппарат начальника штаба ВМС США; главное управление личного состава ВМС США; осуществлять оперативное руководство; объединенное командование.

*Exercise 5. Translate the following questions:*

1. Каков состав боевых сил ВМС США?
2. Каковы основные компоненты организации ВМС США?
3. Входят ли боевые силы корпуса морской пехоты в состав береговых частей и учреждений?
4. С какой целью созданы командования однородных сил флота?
5. Какие флоты входят в состав Атлантического флота ВМС США?
6. Кто осуществляет оперативное управление силами ВМС США в Тихом океане?
7. Кто осуществляет оперативное управление силами 6-го флота?
8. В каких случаях и с какой целью создаются оперативные соединения в ВМС США?

*Exercise 6. Get prepared to make a two way translation of the following text quickly by ear:*

На 17 октября 2008 года численность личного состава регулярных ВМС США составляла 332 200 человек.

*The Operating Forces of the Navy comprise the several fleets, seagoing forces, sea frontier forces, the Military Sea Transportation Service.*

Министерство ВМС США состоит из аппарата министра ВМС, аппарата начальника штаба ВМС, штаба корпуса морской пехоты, главного управления личного состава ВМС и т.д.

*The Department of the Navy consists of three main parts: the Operating Forces, the Navy Department and the Shore Establishment.*

*The Shore Department comprises all activities of the Department of the Navy not assigned to the Operating Forces of the Navy and not part of the Navy Department*.

Штаб ВМС США возглавляет начальник штаба, который подчинен министру ВМС. Он несет ответственность за организацию, боевую подготовку и разработку принципов боевого применения ВМС, оснащение кораблей и частей оружием и боевой техникой, а также за административное руководство ВМС.

*The majority of the naval forces are assigned to Type Commanders for administrative control and for operational control during primary and intermediate training phases.*

Каждое командование однородных сил флота подразделяется на флотилии, эскадры и дивизии.

*There are four regularly constituted fleets – the First and Seventh Fleets in the Pacific, and the Second and Sixth Fleets in the Atlantic.*

В мирное время командующий первым флотом осуществляет оперативное руководство всеми силами на тихоокеанском побережье. Командующий седьмым флотом осуществляет оперативное руководство определенными силами США на Дальнем Востоке.

*The Commandant of the Marine Corps is responsible directly to the Secretary of Navy for the procurement, training, discipline of the officers and enlisted men of the Marine Corps.*

Командующий корпусом морской пехоты ответствен перед министром ВМС за организацию, боевую подготовку и боевую готовность частей и соединений морской пехоты, материально-техническое обеспечение и административное руководство силами морской пехоты.

*Officers of the Regular Navy and the Naval Reserve are divided among the line and seven staff corps.*

*Officers of the line exercise the military command of the Navy.*

*Line officers command, administer, train, and fight the ships and larger units of the fleet.*

*Warrant officers possess detailed practical knowledge of their speciality.*

*Enlisted men. Basic legislation enacted since World War II allows 500,000 enlisted men in the Regular Navy.*

В состав морской пехоты ВМС США входят 3 дивизии, которые поддерживаются 3 крыльями авиации морской пехоты с 550 боевыми самолетами современных типов.

*Exercise 7. Translate the following text in a written form:*

One of the principal components of the Naval Establishment, the Navy Department is composed of offices of the Secretary of the Navy, the Civilian Executive Assistants, the Chief of Naval Operations, the Chief of Naval Material and the Bureau and offices headed by the Naval Technical Assistants including the headquarters of the Marine Corps and the Coast Guard (when serving under the Navy Department).

The Secretary of Navy has the general superintendence of construction, manning, armament, equipment, maintenance, and employment of vessels of war and performs such duties as the President, who is Commander-in-Chief, may direct.

The various offices, boards, and agencies reporting to, and performing staff duty for, the Chief of Naval Operations are collectively referred to as the Office of the Chief of Naval Operations, they assist him in executing two kinds of duties: Naval Command of the Naval Establishment and Consumer Logistics.

The CNO as the principal naval adviser to the President, the Secretary of Defense, and the Secretary of the Navy on the conduct of war and as the principal naval adviser and naval executive to the Secretary of the Navy on the conduct of the activities of the Naval Establishment. He is a member of the Armed Forces Policy Council and Joint Chiefs of Staff.

The CNO has the responsibility for the command, use, and administration of the Operating Forces, and is responsible to the Secretary of the Navy for their use in war and for plans and preparations for their readiness for war.

The CNO is responsible for executing the directives of the JCS insofar as they affect the Navy.

*Exercise 8. Translate the following text from Russian into English in a written form:*

Высшим административным органом управления ВМС США является министерство ВМС во главе с министром – гражданским лицом, подчинённым министру обороны США.

Министерство осуществляет руководство по вопросам строительства, финансирования, комплектования, вооружения, МТО и мобилизационной готовности ВМС.

В систему министерства входят три составные части: управления и отделы собственно министерства, штаб ВМС и штаб морской пехоты.

Штаб ВМС возглавляет начальник штаба, который подчинён министру ВМС, Начальник штаба ВМС ответствен перед министром за организацию, боевую подготовку и разработку принципов боевого использования ВМС, а также за строительство, оснащение кораблей и частей оружием и боевой техникой и административное руководство ВМС.

Штаб морской пехоты возглавляет командующий корпуса морской пехоты. Командующий ответствен перед министром ВМС за организацию, боевую подготовку и боевую готовность частей и соединений морской пехоты, МТО и административное руководство силами морской пехоты.

Командование ВМС США уделяет постоянное внимание повышению боевых возможностей морской пехоты.

Готовность трёх дивизий морской пехоты с поддерживающими крыльями авиации морской пехоты к переброске по воздуху или морем постоянно повышается.

На вооружение корпуса морской пехоты поступают новые танки, гусеничные плавающие бронетранспортёры, самоходная артиллерия.

*Exercise 9. Translate the following text in a written form:*

## The US Navy Equipment

As of 2011, the navy operates 285 ships, 3,700 aircraft, 50,000 non-combat vehicles and owns 75,200 buildings on 13,000 km2.

## Ships

The names of commissioned ships of the U.S. Navy are prefixed with the letters "USS", designating "United States Ship". Non-commissioned, civilian-manned vessels of the navy have names that begin with "USNS", standing for "United States Naval Ship" The names of ships are officially selected by the secretary of the navy, often to honor important people or places. Additionally, each ship is given a letter-based hull classification symbol (for example, CVN or DDG) to indicate the vessel's type and number. All ships in the navy inventory are placed in the Naval Vessel Register, which is part of "the Navy List" (required by article 29 of the United Nations Convention on the Law of the Sea).[dubious – discuss] The register tracks data such as the current status of a ship, the date of its commissioning, and the date of its decommissioning. Vessels that are removed from the register prior to disposal are said to be stricken from the register. The navy also maintains a reserve fleet of inactive vessels that are maintained for reactivation in times of need.

The U.S. Navy was one of the first to install nuclear reactors aboard naval vessels; today, nuclear energy powers all active U.S. aircraft carriers and submarines. In the case of the Nimitz-class carrier, two naval reactors give the ship almost unlimited range and provide enough electrical energy to power a city of 100,000 people. The U.S. Navy previously operated nuclear-powered cruisers, but all have been decommissioned.

The U.S. Navy has identified a need for 313 combat ships, but under the current plans will only be able to afford 232 to 243.

## Amphibious warfare vessels

Amphibious assault ships are the centerpieces of US amphibious warfare and fulfill the same power projection role as aircraft carriers except that their striking force comprises land forces instead of aircraft. They deliver, command, coordinate, and fully support all elements of a 2200-strong marine amphibious unit in an amphibious assault using both air and amphibious vehicles. Resembling small aircraft carriers, amphibious assault ships are capable of V/STOL, STOVL, VTOL, tiltrotor, and rotary wing aircraft operations. They also contain a well deck to support the use of Landing Craft Air Cushion (LCAC) and other amphibious assault watercraft. Recently, amphibious assault ships have begun to be deployed as the core of an expeditionary strike group, which usually consists of an additional amphibious transport dock and dock landing ship for amphibious warfare and an Aegis-

equipped cruiser and destroyer, frigate, and attack submarine for group defense. Amphibious assault ships are typically named after World War II aircraft carriers.

Tarawa class – 1 in commission
Wasp class – 8 in commission
America class – 1 under construction, at least 3 more planned.

Amphibious transport docks are warships that embark, transport, and land Marines, supplies, and equipment in a supporting role during amphibious warfare missions. With a landing platform, amphibious transport docks also have the capability to serve as secondary aviation support for an expeditionary group. All amphibious transport docks can operate helicopters, LCACs, and other conventional amphibious vehicles while the newer San Antonio class of ships has been explicitly designed to operate all three elements of the marines' "mobility triad": Expeditionary Fighting Vehicles (EFVs), the V-22 Osprey tilt-rotor aircraft, and LCACs. Amphibious transport docks are named for cities, except for USS Mesa Verde (LPD-19), named for Mesa Verde National Park in Colorado, and three San Antonio class ships named in memory of the September 11, 2001 attacks.

USS San Antonio (LPD-17), a San Antonio-class amphibious transport dock
Austin class – 2 in commission
San Antonio class – 8 in commission, 3 under construction

The dock landing ship is a medium amphibious transport that is designed specifically to support and operate LCACs, though it is able to operate other amphibious assault vehicles in the United States inventory as well. Dock landing ships are normally deployed as a component of an expeditionary strike group's amphibious assault contingent, operating as a secondary launch platform for LCACs. All dock landing ships are named after locations in the United States.

Whidbey Island class – 8 in commission
Harpers Ferry class – 4 in commission.

## Surface vessels

Cruisers are large surface combat vessels that conduct anti-air/anti-missile warfare, surface warfare, anti-submarine warfare, and strike operations independently or as members of a larger task force. Modern guided missile cruisers were developed out of a need to counter the anti-ship missile threat facing the United States Navy. This led to the development of the AN/SPY-1 phased array radar and the Standard missile with the Aegis combat system coordinating the two. Ticonderoga-class cruisers were the first to be equipped with Aegis and were put to use primarily as anti-air and anti-missile defense in a battle force protection role. Later developments of vertical launch systems and the Tomahawk missile gave cruisers additional long-range land and sea strike capability, making them capable of both offensive and defensive battle operations. All cruisers since CG-47 have been

named for famous battles with USS Thomas S. Gates (CG-51) as the only exception. Previously, cruisers were either named for cities (until CG-12), former important navy figures (CG-15 to CG-35), or states (CGN-36 to CGN-41).

Ticonderoga class – 22 in commission

Destroyers are multi-mission medium surface ships capable of sustained performance in anti-air, anti-submarine, anti-ship, and offensive strike operations. Like cruisers, guided missile destroyers are primarily focused on surface strikes using Tomahawk missiles and fleet defense through Aegis and the Standard missile. Destroyers additionally specialize in anti-submarine warfare and are equipped with VLA rockets and LAMPS Mk III Sea Hawk helicopters to deal with underwater threats. When deployed with a carrier strike group or expeditionary strike group, destroyers and their fellow Aegis-equipped cruisers are primarily tasked with defending the fleet while providing secondary strike capabilities. Destroyers have been named for important navy personnel and heroes since USS Bainbridge (DD-1).

Arleigh Burke class – 62 in commission, 4 under construction, at least 30 more planned

Zumwalt class – 3 building or planned

Modern U.S. frigates mainly perform anti-submarine warfare for carrier strike groups and amphibious expeditionary groups and provide armed escort for supply convoys and merchant shipping. They are designed to protect friendly ships against hostile submarines in low to medium threat environments, using torpedoes and LAMPS helicopters. Independently, frigates are able to conduct counterdrug missions and other maritime interception operations. The U.S. Navy expects to retire and replace its current class of frigates by 2020 as the Littoral Combat Ships are introduced into operation. As in the case of destroyers, frigates are named after naval heroes.

Oliver Hazard Perry class – 17 in commission

Littoral Combat Ships are split between two designs and are expected to total around 40 ships when the program is complete.

Freedom class – 2 in commission, 2 under construction, at least 16 more planned

Independence class – 1 in commission, 1 completed not yet in commission, 2 under construction, at least 6 more planned

In addition, USS Constitution, commissioned in 1797 and one of the original six frigates of the United States Navy, remains in commission at the Charlestown Navy Yard in Boston. She serves as a tribute to the heritage of the Navy, and occasionally sails for commemorative events such as Independence Day and various victories during the War of 1812. Constitution is currently the oldest commissioned warship afloat. HMS Victory is older, and in commission, but is in permanent dry dock.

# THE U.S. NAVY

## Lesson 2

## THE U.S. AIRCRAFT CARRIERS

*Exercise 1. Read and learn the following words and word combinations by heart:*

**WORDS LIST**

| | |
|---|---|
| commission | вводить в строй |
| surface ship | надводный корабль |
| deck | палуба |
| flight d. | полётная палуба |
| angled d. | угловая полётная палуба |
| straight d. | прямая полётная палуба |
| displacement | водоизмещение |
| full-load d. | полное водоизмещение |
| light (ship) d. | водоизмещение порожнем |
| total d. | полное водоизмещение |
| standard d. | стандартное водоизмещение |
| nuclear-powered | с ЯЭУ |
| carrier | авианосец |
| attack c. (CVA) | ударный авианосец |
| nuclear-powered a.c. (CVAN) | атомный ударный авианосец |
| ASW carrier (CVS) | авианосец ПЛО |
| conventionally-powered c. | авианосец с обычной ЭУ |
| helicopter assault c. (LPH) | десантный вертолётоносец |
| superstructure | надстройка |
| island s. | "островная" надстройка |
| funnel | дымовая труба |
| complement | количество самолётов палубного базирования |
| heat-exchanger | теплообменник |
| sonar | гидролокатор |
| forward | носовой |
| fore | носовой |
| aft | кормовой |
| bow | нос |
| elevator | самолётоподъёмник |
| deck-edge e. | бортовой самолётоподъёмник |

| | |
|---|---|
| centerline e. | самолётоподъёмник, расположенный параллельно ДП |
| class | тип (корабля) |
| convert (into) | переоборудовать |
| conversion | переоборудование |
| center line (CL) | диаметральная плоскость (ДП) |
| speed | ход, скорость хода |
| surface s. | скорость надводного хода |
| rated s. | расчётная скорость хода |
| economical s. | экономическая скорость хода |
| dead slow s. | самый малый ход |
| full s. | полный ход |
| high s. | максимальная скорость хода |
| full ahead | полный вперед |
| full astern | полный назад |

**WORD COMBINATIONS**

| | |
|---|---|
| provide sustained support | оказывать поддержку в течение длительного периода времени |
| carry out operations | вести боевые действия |
| unlike ... | в отличие от... |
| to be fitted with | быть оснащённым |
| in the CVS version | при использовании в качестве авианосца ПЛО |
| apart from | в отличие от ... |

**COMMENTARY**

Attack aircraft carrier (CVA) is a warship designed to support and operate aircraft, engage in attacks on targets, and engage in sustained operations in support of other forces.

Designated either CVA or CVAN depending upon the type of the power plant.

The 'N' in the CVAN stands for 'nuclear'.

Attack carrier striking force is a naval force, the primary offensive weapon of which is carrier-based aircraft. Ships other than carriers included in the force act primary to support and screen against submarine and air threat, and secondary against surface threat.

Antisubmarine carrier group is a group of ships consisting of one or more ASW carriers and a number of escort vessels whose primary mission is to detect and destroy submarines. Such groups may be employed in convoy support or hunter/killer roles.

Antisubmarine support aircraft carrier is a ship primary designed to support and operate aircraft and for sustained ASW and escort convoys. It also may be used to provide close air support.

Designated CVS.

Amphibious assault ship is a ship designed to transport and land troops, equipment by means of embarked helicopters.

All ships in the US Navy are subdivided as to the type of the power plant installed into: nuclear-powered (nuclear) or conventionally-powered (Diesel) ships.

Measurements

The English or long ton is equal to 2,240 lb, the American or short ton is 2,000 lb while the metric ton equals 2,24o4.6 lb; one long ton equals 1,1016.05 kg; one short ton equals 907.19 kg.

As for linear measures, remember that one nautical mile (nm) equals 1.8533 km; one statute mile equals 1.60934 km ( 5 mi = approx. 8 km).

As for temperature measurements, remember that to convert F° into C°, one has to substract 32, multiply by five (5), and divide by nine (9).

*Exercise 2. Read the following text and translate it into Russian at sight:*

## AIRCRAFT CARRIERS
## (U.S. views)

I The U.S. Navy on May 3, 1975 commissioned the USS Nimitz, its second nuclear-powered aircraft carrier and seventh nuclear-powered surface ship.

The Nimitz has a length of 1,092 ft, a flight deck width of over 250 ft, a combat load displacement of about 95,000 t. She can operate and provide sustained support for a naval air wing of about 100 aircraft.

Her initial nuclear cores will provide her with enough fuel to carry out operations for the next 13 years. Two more Nimitz-types, USS Dwight D. Eisenhower and USS Carl Vilson, are scheduled to join the Fleet in 1976 and 1981, respectively.

The US Navy has (as of 1978) three operating active nuclear-powered aircraft carriers: the Enterprise, the Nimitz, the Eisenhower in addition to Forrestal large deck carriers built in the 1950's and 1960'ss post-WWII Midway-class carriers, the Essex-class carriers: the Oriskany and Hancock.

*Answer the following questions:*

1. What is the current strength of the nuclear carrier force of the US Navy?
2. What advantages do nuclear-powered ships possess over conventionally-powered?

The Enterprise was completed in 1961. She has a very clean deck with an island superstructure, no funnels, no guns and four deck-edge elevators. She carries a complement of 70 to 100 Phantom fighters, Vigilante heavy reconnaissance planes, Corsair attack fighters, Intruder bombers and various other support aircraft. The absence of funnels and air-intakes allows the ship to be sealed against BBC agents

and has facilitated the installation of an advanced phased array radar system. Its eight pressurized water-cooled nuclear reactors (with two reactors driving each of the four turbines by supplying heat to 32 heat-exchangers) provide the power output of 300,000 hp that allows a maximum speed of 35 kt, though the rated speed is 33 kt. Even at this speed the Enterprise has a radius of 140,000 mi, with 400,000 mi at the economical (20 kt) cruising speed.

*Answer the following questions:*

1. What complement of aircraft does the Enterprise carry?
2. What is the radius of action of the Enterprise at the economical cruising speed?

Conventionally-powered America and Kennedy (CVA) are similar to the Forrestal class but have a larger deck. Like Forrestal, they can carry three attack squadrons (Skyhawks and Corsairs) and two ftr sqns (Phantoms). The America is fitted with Terrier msls but the Kennedy is equipped with Tartars; there are no guns. These CVA's carry advanced radar and sonar systems.

The Forrestal class vessels range in displacement (full load) from 75,000 to 79,000 short tons. Unlike the new carriers, these CVA's were originally fitted with two forward and four aft twin 5-in guns. The Kitty Hawk and Constellation were built with Terrier msl lchrs.

The two Midway class CVA’s, Coral Sea and F.D.Roosevelt were of wartime design with straight decks, CL elevators and an open bow. They were converted into modern carrier configuration. The four Oriskany CVA’s unlike the other Essex class vessels have been modernized to CVA standard by very extensive conversions including the angled deck and steam catapults.

Seven Essex class carriers have been converted into antisubmarine carriers (CVS) and helicopter assault carriers (LFH). In the CVS version they carry hcptrs and FW acft (up to 28). Some CVS retain some 5-in guns. Apart from the CVA standard (the Oriskany class) seven Essex class vessels are operating as antisubmarine carriers (CVS). Three other vessels of the class were converted into helicopter assault carriers (LPH), but this role is being taken over by a new class of specially designed vessels. The new LPH’s (Iwo Jima) accommodate 24 medium hcptrs, four hvy hcptrs and four lt ones, as well as 2,000 Marines.

Many older carriers have been converted into aircraft ferries (AKV), aircraft transports (AVT) and communications relay ships (AGMR).

*Answer the following questions:*

1. What carriers have been converted into CVS?
2. What is the complement of RW acft aboard LPH?
3. What are LPH's designed for?

*Exercise 3. Decipher the following abbreviations, and translate them into Russian:*

nm; USN; CVAN; CVS; LPH; CVA; AVT; AKV; USS; USMC; DN; DA; DAF; kt; Kt; CNO; RW acft; FW acft; AM; FM; PM; EHF; STOL; VTOL; SAGE; NORAD; ECM; SLBM; ICBM; IBBM; SSM; SAM; ALCM; SLCM; MICV; CEV.

*Exercise 4. Translate the following words and word combinations by ear off hand:*

**from English into Russian:**

to provide a sustained support; to operate a naval air wing; to carry out operations; to be scheduled to join the fleet; a nuclear carrier force; to carry a complement of 100 aircraft; to be sealed against BBC agents; to be fitted with; to be converted into helicopter assault carriers; the absence of funnels and air-intakes allows the ship to ...; at the economical speed;

**from Russian into English:**

атомный ударный авианосец; авианосное ударное соединение; полётная палуба; угловая палуба; прямая палуба; надстройка; дымовая труба; диаметральная плоскость; носовая часть; паровая катапульта; осуществлять герметизацию и защиту от ОМП; расчётная скорость хода; экономическая скорость хода; оснащаться; переоборудовать, ввод в строй планируется; осуществлять поддержку в течение длительного периода времени.

*Exercise 5. Translate the following questions into English in a written form, and answer them orally:*

1. Какие атомные авианосцы имеются в составе ВМС США?
2. Какие атомные авианосцы находятся в стадии строительства?
3. Сколько атомных авианосцев было в составе ВМС США в 90-е годы?
4. Сколько реакторов установлено на борту авианосца «Энтерпрайз»?
5. С какой целью командование ВМС планирует использование десантных вертолётоносцев?
6. Какие десантные вертолётоносцы имеются в составе ВМС США в настоящее время?
7. Сколько вертолётов имеется на борту вертолётоносца «Иво Дзима»?
8. Какую максимальную скорость хода способен развивать атомный авианосец?
9. Каков состав авианосных сил ВМС США в настоящее время?
10. Сколько самолётов и какого типа имеется на борту авианосца «Энтерпрайз»?
11. Какие самолёты имеются на борту авианосца «Нимиц»?

*Exercise 6. Get prepared to make a two way translation of the following text quickly by ear:*

На 17 октября 2008 года в составе ВМС США находилось 11 атомных многоцелевых авианосца и еще один строился.

*In addition the US Navy had eleven conventionally powered aircraft carriers (CV, CVA), five active nuclear-powered guided missile cruisers and another three under construction; 21 conventionally-powered GM cruisers, 39 GM destroyers, 53 active destroyers and another 25 under construction; six active GM frigates and another ten under construction, and finally 57 frigates.*

Построен и введен в строй действующих атомный авианосец «Нимитц», спущен на воду авианосец «Дуайт Эйзенхауэр» заложен киль авианосца «Карл Вилсон». Bach carrier displaces 91,400 t and is supposed to be capable of carrying up to 100 planes and helicopters. В США разрабатываются проекты новых кораблей, способных одновременно решать задачи ПЛО и ПВО соединений кораблей в море...

*At present there is 14,300 t multipurpose carrier designated "SCS" under development. It will operate STOL aircraft.*

Создание атомных ударных авианосцев объясняется стремлением повысить эффективность авианосных ударных соединений, обладающих неограниченной дальностью плавания и возможностью длительное время поддерживать полный ход.

*New aircraft carriers will operate advanced all-weather fighter aircraft. The F-14 Tomcat will be one of them. A squadron of Tomcats is at present at sea in Enterprise nuke.*

В ВМС США в 2008 году имелось 732 истребителя, 1228 штурмовиков, 133 самолета ПЛО, 52 самолета-разведчика, 338 транспортных самолетов,43 самолета-заправщика и 1166 вертолетов.

*The air wing of the Nimitz in September, 1975 consisted of two squadrons of F4 Phantom fighters, one of them manned by the Marine Corps; a squadron of A6 Intruder strike and reconnaissance aircraft; a squadron of A7 Corsair attack aircraft and flights of EA-6A Prowler ECM aircraft; HA-50 Vigilante reconnaissance and E-2B Hawkeye AEW aircraft; also SH-3A Sea King Helicopters.*

*Exercise 7. Translate the following text in a written form from English into Russian:*

**A.** During late August and early September the latest American carrier, the 96,000-ton (full-load displacement) nuclear-powered USS Nimitz, visited ports in Britain, West Germany and Norway in company with the missile cruiser South Carolina and the nuclear-powered attack submarine Seahorse.

Technically, so far as it was possible to discern, the Nimitz differs little in terms of electronic equipment from her conventionally-powered predecessors. Her air wing is not yet at full strength, which will be about 100 aircraft.

**B.** The power plant of the Nimitz consists of two pressurized water-cooled reactors, larger than has been built so far for the US Navy.

The reason for the reduction in the number of reactors compared to Enterprise was to lessen the amount of weight and space taken up by reactor shielding. Shock tests carried out on a reduced-scale model of the reactor area have shown that the reactors in Nimitz should be able to withstand the shock of a bomb, missile or torpedo hit. The reactors are claimed to be considerably safer than those found ashore in power stations in the USA.

**C.** The first USN nuclear carrier, USS Enterprise, was commissioned in 1961 and will be a quarter of a century old, in other words, when-if-ever, the fifth nuke becomes operational.

The lead time for the carriers of the Nimitz type is now about 1O years. The Nimitz will not really join the Fleet, ready for operational assignment, until some time in fiscal year 1976. Two more NIMITZ types USS Dwight D Eisenhower and USS Carl Vilson are scheduled to join the Fleet in 1976 and 1981, respectively, but the next US carrier thereafter, if any, could not come into the inventory until 1986 at the latest.

**D.** On the flight deck there are four steam catapults; two on the angled deck and two forward port and starboard on the flight deck. The width of the flight deck (the total area is some 4,5 acres) allows aircraft to be parked in safety during recovery periods on the port side of the angled deck.

Over the Nimitz's expected 30-year operational life, her overall cost will be four to five per cent lower than that of an oil-fired ship of comparable size.

In comparison with her conventionally-powered half-sisters, the Nimitz can carry 90% more aviation fuel and 30% more weapon stores. She can carry enough fuel to support 16 days' intensive flying by her air wing, whereas a conventional carrier's fuel capacity without replenishment would be about eight days.

*Exercise 8. Translate the following text from Russian into English in a written form:*

**Десантные вертолётоносцы**

Десантные вертолётоносцы предназначены для транспортировки морем и высадки на берег с помощью вертолётов морской пехоты. После высадки вертолёты могут использоваться для доставки с корабля на берег боеприпасов, а также для эвакуации раненых.

Важнейшей конструктивной особенностью десантных вертолётоносцев является наличие полётной палубы и ангарной палубы для размещения вер-

толётов. Для подъёма вертолётов на полётную палубу имеется два-три палубных или бортовых подъёмника. Применение бортовых подъёмников вместо палубных позволяет увеличить полезную площадь ангаров и даёт возможность поднимать крупные вертолёты, габариты которых превышают размеры грузовых платформ. Часть ангарной палубы вертолётоносца отводится для подвижных средств десанта. Лёгкие подвижные средства (гаубицы, безоткатные орудия и т.п.) доставляются на берег вертолётами, более тяжёлые десантно-высадочными средствами.

Десантовместимость современных вертолётоносцев составляет от 700–900 до 2 ООО человек и от 30–40 до 80 единиц техники.

Основные тактико-технические данные десантного вертолётоносца типа «Иво Дзима»: 2090 десантников; 20–30 вертолётов; водоизмещение 18340 т (полное); скорость хода 20 узлов; мощность ЭУ 23000 л.с.; экипаж 528 человек; вооружение 4 Х 2 76 мм, РК "Си Спарроу"

*Exercise 9. Translate the following text in a written form:*

## Aircraft carriers

The navy had established a minimum requirement for 11 aircraft carriers, but dropped to 10 when Enterprise retired in December 2012, before Gerald R. Ford enters service.

A carrier is typically deployed along with a host of additional vessels, forming a carrier strike group. The supporting ships, which usually include three or four Aegis-equipped cruisers and destroyers, a frigate, and two attack submarines, are tasked with protecting the carrier from air, missile, sea, and undersea threats as well as providing additional strike capabilities themselves. Ready logistics support for the group is provided by a combined ammunition, oiler, and supply ship.

Nimitz class – 10 in commission

Gerald R. Ford class – 2 under construction, at least 1 more planned.

## Aircraft

Carrier-based aircraft are able to strike air, sea, and land targets far from a carrier strike group while protecting friendly forces from enemy aircraft, ships, and submarines. In peacetime, aircraft's ability to project the threat of sustained attack from a mobile platform on the seas gives United States leaders significant diplomatic and crisis-management options. Aircraft additionally provide logistics support to maintain the navy's readiness and, through helicopters, supply platforms with which to conduct search and rescue, special operations, anti-submarine warfare (ASW), and anti-surface warfare (ASuW).

The U.S. Navy began to research the use of aircraft at sea in the 1910s, with Lieutenant Theodore G. "Spuds" Ellyson becoming the first naval aviator on 28

January 1911, and commissioned its first aircraft carrier, USS Langley (CV-1), in 1922. United States naval aviation fully came of age in World War II, when it became clear following the Attack on Pearl Harbor, the Battle of the Coral Sea, and the Battle of Midway that aircraft carriers and the planes that they carried had replaced the battleship as the greatest weapon on the seas. Leading navy aircraft in World War II included the Grumman F4F Wildcat, the Grumman F6F Hellcat, the Chance Vought F4U Corsair, the Douglas SBD Dauntless, and the Grumman TBF Avenger. Navy aircraft also played a significant role in conflicts during the following Cold War years, with the F-4 Phantom II and the F-14 Tomcat becoming military icons of the era. The navy's current primary fighter and attack airplanes are the multi-mission F/A-18C/D Hornet and its newer cousin, the F/A-18E/F Super Hornet. The F-35 Lightning II is presently under development and was scheduled to replace the C and D versions of the Hornet beginning in 2012. Initial operational capability of the F-35C is now expected to be February 2019. The Navy is also looking to eventually replace its F/A-18E/F Super Hornets with the F/A-XX program.

The Aircraft Investment Plan sees naval aviation growing from 30 percent of current aviation forces to half of all procurement funding over the next three decades.

# THE U.S. NAVY

## Lesson 3

## THE U.S. SUBMARINE

*Exercise 1. Read and learn the following words and word combinations by heart:*

**WORD LIST**

| | |
|---|---|
| submarine (SS) | подводная лодка |
| attack submarine | торпедная подводная лодка |
| fleet submarine | эскадренная подвод, лодка |
| ballistic missile submarine | ракетная подводная лодка |
| antisubmarine warfare submarine | подводная лодка ПЛО |
| hunter-killer submarine | подводная лодка ПЛО |
| to surface | всплывать |
| to submerge | погружаться |
| to operate submerged | действовать в погруженном состоянии |
| submersible | погружаемый, способный погружаться |
| true в. | истинная подводная лодка |
| waters | акватория противника |
| hostile w. | |
| friendly w. | своя акватория |
| deep w. | глубоководная акватория |
| shallow w. | мелководье |
| territorial w. | территориальные воды |
| international w. | международные воды |
| coastal w. | прибрежные воды |
| sonar | ГАС |
| active s. | гидролокатор |
| passive s. | шумопеленгатор |
| to dive | погружаться |
| to stay dived | находиться в погруженном состоянии |
| a dive | погружение |
| crash d. | срочное погружение |
| fast d. | быстрое погружение |
| maximum d. | предельная глубина погружения |
| running d. | погружение на ходу |
| stationary d. | погружение без хода |
| reduction Rear | редукционная передача, редуктор |

| | |
|---|---|
| a bank of storage batteries | блок аккумуляторных батарей |
| to charge storage batteries | заряжать аккумуляторную батарею |

**WORD COMBINATIONS**

| | |
|---|---|
| the invention of the nuclear power plant | создание ЯЭУ |
| the application of the nuclear power plant to submarines | применение ЯЭУ на подводных лодках |
| to lead to (the development of ...) | привести к ... |
| to shut down the nuclear reactor | остановить атомный реактор |
| to travel at high speed | идти на большой скорости хода |
| lack of dived speed and range | недостаточные скорость и дальность подводного хода |
| to establish identity | устанавливать принадлежность |
| the advantage lies with | преимущество принадлежит ... |
| in the immediate vicinity of ... | в непосредственной близости от... |

**COMMENTARY**

**A.** Given below are several English sentences which have something in common. Give the reason why they have been grouped together. Translate the sentences into the Russian.

"The submarine can operate in hostile waters without revealing its presence."

"The submarine has a considerable range advantage in detecting the presence of other shipping."

The enemy will have a considerable difficulty in establishing identity without committing a warlike act likely to cause a deteriorating situation to grow worse.

**B. Glossary.**

Probe and Penetrate

The word "penetrate" suggests the achieving of any entrance into or through something.

Probe suggests a deliberate cautious, or exploratory attempt to penetrate something, it may also mean a thorough investigation or examination.

There is an expression with the verb "Probe": to probe for the weak spots (нащупывать слабые стороны). The verb can also be found in the expression "probing action" (разведка боем).

*Exercise 2. Read the following text and translate it into Russian at sight:*

**SUBMARINE**

Submarine is a ship capable of running on or below the surface of the sea. Diesel engines are used for power while the ship is surfaced, and electric motors

while it is submerged. Power for the electric motors is provided by banks of storage batteries. The batteries are charged by Diesel generators while the submarine is surfaced. Since the batteries can store only a limited amount of power, the submarine can operate submerged for only limited periods.

The invention of the nuclear power plant and its application to submarines led to the development of the first true submersible. Nuclear submarines can operate submerged indefinitely because their power plants do not require air to be mixed with the fuel.

Nuclear submarines are driven by steam turbines connected to the propellers for reduction gearing. When the electric motor is used for propulsion, the turbines and reduction gearing are disconnected. As in conventional submarines, electric power is stored in banks of storage batteries. The batteries are charged by turbine driven generators or Diesel generators when the nuclear reactor is shut down.

*Answer the following questions:*

1. Why do you think submarines can operate under the surface of the sea?
2. If a submarine is equipped with a Diesel engine what will it require for operation while it is submerged?
3. Why do you think nuclear-powered submarines can operate submerged indefinitely?

## The Role of the Submarine

A submarine has the following advantages compared with surface warships:

It can operate in hostile waters, virtually without restriction, and without revealing its presence.

Being able to move in three dimensions, and so take advantage of oceanological conditions to deploy various sensors (but more particularly, passive sonar), a considerable range-advantage in detecting the presence of other shipping.

As a result of 1 and 2 above, the ability to dictate tactical situations to their own advantage.

These advantages have been enormously extended by the nuclear submarine's ability to stay dived and travel at high speed for very long periods. Lack of dived speed and range, and dependence on the atmosphere for the maintenance of life and power, have always been considered the most serious disadvantages of the non-nuclear submarine; although modern developments in propulsion efficiency and power storage have made these a less serious disadvantage than they used to be. But with the eventual disappearance of the diesel-electric patrol submarine it is reasonable to assume that patrol-type duties will have to be undertaken by the Fleet submarine, in the event of a limited war at sea.

*Answer the following questions:*

1. Do you think a submarine can operate in hostile waters virtually without being detected? Is this feasible?

2. What advantages do you think an ability to move in three dimensions provides a submarine with?

3. How can a submarine dictate tactical situations to its advantages?

4. What differs the patrol submarine from the Fleet submarine?

Fleet submarines are large, complex, and expensive, and it can be argued that their size and complexity render them more vulnerable to action damage if attacked by surface antisubmarine forces. The fleet-support role, such attacks are unlikely: the submarine is operating in deep waters and can rely on the ability to maneuver – at high speed and in three dimensions – to escape surface attack.

The task of the patrol submarine is quite different from that of its Fleet counterpart. Its role is to probe to intrude; to operate in waters regarded by the enemy as his own by territorial right; and in the last resort, to inflict damage and cause trouble out of proportion to the size or cost of the war vessel involved. Alternatively, in a limited war which has not yet achieved this particular level of violence, the patrol submarine can still intrude, observe, report, and record valuable information. The en may well suspect its presence, but would have considerable difficulty in establishing identity without committing a warlike act likely to cause a deteriorating situation to grow worse. In such conditions, all the tactical and political advantage lies with patrol submarine.

All continents are surrounded by areas of fairly shallow water; and it is implicit to the role of the patrol submarine that it must be capable of efficient operation in these conditions if it is to probe, intrude, and in general make a nuisance of itself to the extent of threatening war in the immediate vicinity of potential enemies. The Fleet submarine is dependent on deep water and speed to maintain invulnerability, so operation in coastal waters would entail acceptance of considerable penalties: which in turn would have to be balanced against increased size and complexity making the submarine more vulnerable to surface ship counterattack in a situation where speed alone will not ensure safety.

*Answer the following questions:*

1. What do you think renders Fleet submarines vulnerable to surface antisubmarine action?

2. What is the task of the patrol submarine?

3. In what conditions do you think the tactical and political advantage can lie with the patrol submarine as compared with its Fleet counterpart?

4. What is the Fleet submarine dependent on in maintaining its invulnerability?

*Exercise 3.Decipher the following abbreviations, and translate them into Russian:*

AAA; CVAN; CVA; NSC; DA; DAF; DN; JCS, ammo; ASW; CLGP; GP; ATGM; HEAT; CEV; Lnchr; LFH; mg; SFGM; GM; SAM; SSM; ICBM; SRAM; ALCM; SLCM; ALBM; SLBM; TNT; CW; X; NORAD; SAGE; CE; SSN; FCS; USMC; RR.

*Exercise 4. Translate the following words and word combinations by ear off hand:*

**A. from English into Russian**

while the ship is surfaced; to operate submerged; the reactor is shut down; to dictate tactical situations to one's own advantage; to stay dived; to render smth vulnerable to; to maintain invulnerability; to entail penalties;

**B. from Russian into English**

источником питания является аккумуляторная батарея; батарея заряжается; в погруженном положении; появление ЯЭУ; применение ЯЭУ на подводной лодке; при остановке реактора; действовать в акватории противника; делать более уязвимым; действовать на большой глубине; погружаться.

*Exercise 5. Translate the following questions into English in a written form, and answer them orally:*

1. Какие ПЛАРБ находятся на вооружении ВМС США в настоящее время?
2. Какова дальность стрельбы ракеты «Трайдент»?
3. Сколько ракет «Трайдент» имеется на борту головной ПЛАРБ «Огайо»?
4. Когда планируется завершить строительство 10 ПЛАРБ «Трайдент»?
5. Какие атомные торпедные лодки строятся для ВМС США?
6. Каково вооружение атомных торпедных лодок?
7. Каково предназначение крейсерских и патрульных подводных лодок?
8. Каковы преимущества атомной подводной лодки по сравнению с дизельной?

*Exercise 6. Get prepared to make a two way translation of the following text quickly by ear:*

Подводная лодка способна выполнять стратегические, оперативно-тактические задачи как в подводном, так и надводном положении.

*Submarines have two distinct hulls. The outer hull encloses inner or pressure hull which resists water pressure when the ship is submerged.*

Подводная лодка имеет металлический корпус, способный выдержать давление воды на глубинах погружения.

*Built into the space between the inner and outer hulls are the ballast and fuel oil tanks. To prevent them from being crushed by water pressure, these tanks must be kept filled with fluid or compressed air.*

Для погружения балластные цистерны заполняются водой. Изменение глубины и всплытие производятся с помощью горизонтальных рулей с последующим вытеснением воды из балластных цистерн сжатым воздухом.

*To dive, a submarine opens vent valves in the main ballast tanks allowing water to enter them.*

*To surface, the vents are closed and compressed air is admitted to the tanks. This forces water out of the tanks what enables the submarine to rise.*

Для движения в надводном положении применяются АЭУ или дизельные установки, в подводном положении АЗУ, электрические аккумуляторы, на малых глубинах – дизельные установки, имеющие соответствующие воздухозаборные устройства.

*Snorkels are used for allowing the air to enter the submarine and mix with the fuel.*

*Exercise 7. Translate the following text in a written form from English into Russian:*

**Navy Cruise Missile**

Successful completion of a series of launch tests in the open ocean has been announced by General Dynamics Corporation on a sea-launched cruise missile (SLCM), concluding with an underwater launch of an inert test vehicle and capsule from the nuclear submarine USS Hawkbill.

The missile, in a protective stainless-steel capsule, is loaded into a torpedo tube for firing. To launch, the tube is flooded and the missile pressurized; the weapon is checked out and the guidance aligned, using the Mk.117 fire-control system.

The missile is kept fry in the capsule until firing, when the submarine's hydraulic ejection system pushes it out of the capsule. When the missile clears the submarine, the booster gets initiated. Underwater boost and steering are provided by a solid-propellant motor and jet tabs. Emerging from the water and transitioning to cruise flight, the missile deploys its aerodynamic surfaces and inlet automatically. Its engine starts and reaches full thrust as the missile rises to its apogee and then levels down into a low-to-the surface flight profile.

The missile can carry a conventional or nuclear warhead thus making it either strategic or tactical in application. Both versions can be launched from submarines, surface ships, and land platforms. Without the capsule and booster the missile can be launched from strategic or tactical aircraft.

*Exercise 8. Translate the following text at sight:*

A. When running submerged, the submarine uses diving planes to control the angle of its motion. These planes are hydrofoils which can be tilted to develop vertical forces on the submarine. Conventional or Diesel-powered submarines have their forward diving planes mounted high on the sail or conning tower. When running on the surface, the planes of the nuclear submarine are well above the water and look like aircraft wings.

Since the end of World War II, the submarine has evolved into a large warship whose range and underwater capability were limited only by its need for Diesel fuel and air. This problem was solved by the application of nuclear power.

B. Only the nuclear-powered vessels are true submarines, the older diesel/electric boats being in fact submersibles. While the nuclear-powered submarines are capable of cruising at high speeds over long ranges under water, the diesel/electrics can dive only for short and rather slow submerged cruising; unless, that is, they use snorkel tubes, in which case they are vulnerable to detection, and detection, or rather location, is of course the name of the game in anti-submarine warfare. Once a submarine is detected it can easily be destroyed, since its pressure hull is very vulnerable to explosive shock waves under water. When the submarine is on the surface it is of course destroyed. But submarines are not supposed to meet an attack on the surface, and finding a submerged submarine is generally very difficult.

C. ASROC RUR-5A. Antisubmarine missile Asroc is an anti-submarine weapon operational since 1961 and deployed on many US navy vessels; it is also available to some US allies. It consists of a system of sonar detectors, a fire-control computer (which tracks the target and aims the missile), a launcher device for 8 missiles, plus the missile itself. The missile is a ballistic solid-fuel rocket carrying a warhead which is either an acoustic homing torpedo or a nuclear depth charge. After a sonar detection, the computer tracks the target, and the missile-launcher turns towards the target; a choice of the warhead is then made. After launching, the missile follows a ballistic trajectory.

D. SLBMs. In the ballistic missile field, America has now to get a further 35-odd Poseidon missiles into service during this year. Replacing the older Polaris A3, the Poseidon carries ten 50-kiloton MIRV warheads.

The USA is building a nuclear submarine base 90 miles away at Bangor, Washington. The Bangor base will house 10 Trident nuclear submarines. Bach of them is 550 feet in length, weighs 16,000 tons; double the size of Polaris subs; is nuclear-powered and capable of speeds of 40 mph. Each Trident sub will carry 24 MIRVs (multiple independently targeted re-entry vehicles) and 408 nuclear warheads, to a range of 6,000 miles.

E. In recent years, the ability of submarines to hunt other submarines has been emphasised to the extent of being regarded as a primary role; hence the suffix 'Hunter/Killer' which has become synonymous with "Fleet", when applied to nuclear submarine.

Traditionally, the torpedo has always been regarded as the submarine's main armament, but war records show that the gun was also highly effective. The ability to surface and dive rapidly – attributes complementary to the deployment of the submarine gun – are no longer important functions. The submarine must now stay dived; if it is to maintain maximum ptotection against air or surface-ship attack; but having now lost the gun, no alternative weapon which can be fired without surfacing has yet been provided a3 a result, there are many surface targets which cannot

now be attacked. These include fast patrol boats, hydrofoils, hovercraft and all shallow-draught ships. They are beyond the reach of torpedo attack.

Comprehensive tracking requires many (nuclear) hunter-killers.

*Exercise 9. Translate the following text in a written form:*

**Submarines**

The primary missions of submarines in the U.S. Navy are peacetime engagement, surveillance and intelligence, special operations, precision strikes, battle group operations, and control of the seas. The U.S. Navy operates three types: ballistic missile submarines, guided missile submarines, and attack submarines. Ballistic missile submarines have only one mission: to carry and launch the Trident missile. Four Ohio-class ballistic missile submarines were converted to guided missile submarines, which have a primary mission of attacking targets on land. Attack submarines have several tactical missions, including sinking ships and other subs, launching cruise missiles, gathering intelligence, and assisting in special operations. Earlier attack submarines, such as the Los Angeles class, are typically named for cities while Ohio class and later attack submarines are typically named for states. Attack submarines prior to the Los Angeles class were named for denizens of the deep, while pre-Ohio-class ballistic missile submarines were named for famous Americans (including foreigners with notable connections to the United States).

Ohio-class ballistic missile submarines – 18 in commission, with 4 converted into guided missile submarines

Los Angeles-class attack submarines – 41 in commission (of which 1 to be decommissioned in Sep 2014), 2 in reserve

Seawolf-class attack submarines – 3 in commission

Virginia-class attack submarines – 10 in commission, 8 under construction, at least 30 more planned.

# THE U.S. NAVY

## Lesson 4

## THE U.S. MARINE CORPS

*Exercise 1. Read and learn the following words and word combinations by heart:*

**WORD LIST**

| | |
|---|---|
| discharge | увольнение с военной службы |
| fully found division | полностью укомплектованная дивизия |
| Fleet Marine Force (FMF) | силы морской пехоты флота |
| embark | грузиться, производить посадку |
| disembark | высаживаться; выгружаться |
| backbone | основа |
| amphibious | десантный |
| amphibious assault ship | универсальный десантный корабль |
| helicopter amphibious assault ship | десантный вертолетоносец |
| amphibious command ship | штабной корабль десантных сил |
| amphibious dock ship | десантный транспортный док |
| amphibious troop transport ship | десантный войсковой транспорт |
| landing | |
| infantry landing ship | пехотно-десантный корабль |
| tank landing ship | танко-десантный корабль |
| dock landing ship | десантный транспорт. док |
| landing craft | десантно-высадочное средство |
| landing barge | десантная баржа |
| assault boat | десантный катер |
| amphibious landing vehicle | десантно-высадочное средство |
| assault force | войска десанта |
| lead ship | головной корабль (в серии) |
| dock landing ship | десантный транспорт-док |

**WORD COMBINATIONS**

| | |
|---|---|
| to conduct overseas amphibious operations | проводить морские десантные операции вне территории США |
| to keep in a high state of readiness for action | держать в высокой степени боеготовности |
| to be up in strength in as of | быть полностью укомплектованным (по состоянию) на... |

**COMMENTARY**

Amphibious force is a naval force and landing force, together with supporting forces that are trained, organized, and equipped for amphibious operations.

Amphibious force is the administrative title of the amphibious type command.

Amphibious operation is an attack launched from the sea by naval and landing forces, embarked in ships or craft involving a landing on a hostile shore.

Amphibious assault ship (TARAWA-class) is a ship designed to transport and land troops, equipment, and supplies by means of embarked helicopters.

Amphibious task force is the task organization formed for the purpose of conducting an amphibious operation. The task force always includes Navy forces and a landing force, with their organic aviation.

Amphibious transport dock is a ship designed to transport and land troops, equipment, and supplies by means of embarked landing craft, amphibious vehicles, and helicopters.

Landing craft is an amphibious vehicle used to land troops and armored equipment.

To be able to make head or tail of BREEZES, WINDS and GALES, have a look at the table that follows:

Баллы по шкале Бофорта

| | |
|---|---|
| light air | тихий ветер (1 балл) |
| light breeze | лёгкий ветер (2 балла) |
| gentle breeze | слабый ветер (3 балла) |
| moderate breeze | умеренный ветер (4 балла) |
| fresh breeze | свежий ветер (5 балл.) |
| strong breeze | сильный ветер(6 балл.) |
| high wind | крепкий ветер (7 баллов) |
| fresh gale | очень крепкий (8 баллов) |
| strong gale | шторм (9 баллов) |
| severe (whole) gale | сильный шторм (10 баллов) |
| storm (violent) gale | жестокий шторм (11 баллов) |
| hurricane wind | ураганный ветер (12 баллов) |

*Exercise 2. Read the following text and translate it into Russian at sight:*

## US Marine Corps

The USMC is a component of the Naval Establishment. It was 196,000 men strong as of 1975. The HQ, USMC is one of the principal divisions of the Navy Department. It is organized at the office of the Commandant of the Marine Corps, who is the top USMC officer.

The Commandant is responsible directly to the Secretary of the Navy for the procurement, discharge, education, training, discipline, and distribution of officers

and EM of the Corps, including the USMC Reserve, and its equipment, supply, administration, and general efficiency.

A total strength of nearly 200,000 enables the USMC to maintain three fully found divisions each with its associated air wing.

## The Operating Forces of the USMC

The Operating Forces of the USMC consist of two Fleet Marine Forces (FMF), which are integral units of the US Atlantic and Pacific Fleets. The FMF includes the air and ground tactical units of the USMC. Its mission is to conduct overseas amphibious operations for the seizure and defense of advanced bases as part of a naval campaign. The FMF keeps in a high state of readiness for action such organizations as Inf, Arty, Armor, Commo, Engr, log, and avn units. The FMF is responsible for their keeping continuously trained and mobile. The fully found formations of the two FMF's (Atlantic and Pacific) are held in readiness ashore, although on occasion units from them may be held afloat in specialized shipping.

A full range of specialized shipping is maintained in Amphibious Groups based on the sea lift required for these formations. Provision is made for facilities to enable all types of mil equip to be embarked and disembarked rapidly. Air cover and support for these forces are the responsibility of the carrier-based aircraft, while close air spt is to be rendered by the USMC avn. The Marines are authorized 408 M60 tks, which mount a 105-mm gn against the former backbone of their armored forces of 431 M48 tks with 90-mm gns. As for AT wpns the Marines still depend on RE. The USMC has two SAM Bns, one of which is equipped with the Hawk msl designed to engage low-level tgts.

*Answer the following questions:*

1. What is the main operating force of the USMC?
2. What units are maintained by the EMF?
3. What fully found formations are held in readiness and where?
4. What AT wpns are available to the USMC?
5. How many SAM Bns are maintained by the USMC?

## Marine Aircraft and Amphibious Ships

In acft the USMC is supplied by its standards with ftr-bmrs, such as the F4 Phantom, gnd-atk planes – the A4 Skyhawk and the A6 Intruder. The USMC is also up to strength in hcptrs and amphibious landing vehicles.

As of 1975 the US Navy had 66 amhp ships scattered from Okinawa to the Mediterranean Sea.

There are estimates that to assemble the ships, embark an aslt force of 25,000 Marines and trans them to a distant point – say the Persian Gulf – would take at least 45 days.

The latest addition to the amhp ship force are Tarawa-class amph aslt ships, the lead ship of which was completed in 1975 There are also comd ships, infantry ldg ships, tk ldg ships, amph troop, trans ships, hcptr amph aslt ships, amph trans docks, landing craft, as well as ldg barges and aslt boats.

*Answer the following questions:*

1. What aircraft are available to the USMC?
2. Is the USMC up to strength in helicopters and amphibious vehicles?
3. How many amphibious ships does the US Navy maintain at present?
4. What amphibious assault ships and helicopter amphibious assault ships do you know?
5. What other amphibious ships do you know?

*Exercise 3.Decipher the following abbreviations, and translate them into Russian:*

SN; DA; CVAN; LHA; USS; USMC; FMF; LPH; SLBM; USN; X; amph; CIC; SEV; VTOL; STOL; USCG; ECM; SA; SAM; SPGM; ATGM; GP; FA; TNT; NSC; MICV; nm; DAF; ICBM; APC; JCS; mg; smg; GP; FM; POL; TOE; Admin Co; aslt; CFV; mfld; hvy; DZ; LZ; ALCM; SRAM; RWacft; FWacft; HTAacft; BMEWS; SPADATS; DEW; HIMAD; LCMAD; SHORAD; tgt; IR; SAGE; EMP; EW; CW; PPI; NORAD; OrdC; HE; RR; MV; rkt arty; ADM; wld mtd; CNO

*Exercise 4. Translate the following words and word combinations by ear off hand:*

**A. From English into Russian:**

Naval Establishment; to maintain three fully found divisions; to conduct overseas amphibious operations; for seizure and defence of advance bases; as part of naval campaign; to keep in a high state of readiness for action; to held afloat; provision is made for; to be embarked and disembarked rapidly; to be authorized 408 M60 Tks; against the former backbone of; to be up to strength in Hcptr; to assemble ships; to embark an assault force; the lead ship.

**B. from Russian into English:**

быть составной частью; увольнение с военной службы: полностью укомплектованные .дивизии; проводить морские десантные операции; силы морской пехоты флота; операция по захвату и удержанию; поддерживать в высокой степени боеготовности; находиться в боеготовности на кораблях; предусматриваются; грузиться на корабли; быть полностью укомплектованным; расчет; сосредоточить десантные корабли; универсальный десантный корабль; десантный вертолетоносец; десантно-высадочные средства (плавающие транспортеры).

*Exercise 5. Translate the following questions into English in a written form, and answer them orally:*

1. Каков состав корпуса морской пехоты США и какова его организациям настоящее время?
2. Каковы боевые возможности сил морской пехоты Тихоокеанского флота ВМС США?
3. Какие части морской пехоты находятся в состоянии боеготовности на кораблях?
4. Какие танки находятся на вооружении корпуса морской пехоты в настоящее время?
5. Сколько ракетных дивизионов ПВО имеется в составе корпуса морской пехоты?
6. Какие средства борьбы с танками помимо безоткатных орудий находятся на вооружении корпуса морской пехоты?
7. Сколько авиационных крыльев имеется в составе корпуса морской пехоты и какие типы самолетов состоят на его вооружении?
8. Какие новые десантные корабли поступили на вооружение ВМС США?
9. Когда головной универсальный десантный корабль типа «Тарава» вступил в состав ВМС США?

*Exercise 6. Get prepared to make a two way translation of the following text quickly by ear:*

Морская пехота США является важным элементом вооруженных сил, она содержится в постоянной боеготовности.

*The Headquarters of the US Marine Corps is one of the principal divisions of the Naval Establishment.*

Во главе морской пехоты США стоит командующий корпуса морской пехоты.

*The Commandant of the Marine Corps is the top Marine Corps officer.*

Морская пехота включает: наземные силы, авиацию, части усиления и МТО.

*The Marine Corps includes Atlantic and Pacific Fleet Marine Forces which in turn comprise ground forces, air force, reinforcement and service elements.*

Наземные силы морской пехоты предназначены для ведения десантных операций, действий в операциях, проводимых совместно с сухопутными войсками, и несения патрульно-полицейской службы.

*The Marine detachment detailed for duty aboard a Navy ship is to be part of the ship's landing party; to act as part of a landing party of Marines from ship of a Fleet; to provide internal security for the ship.*

Дивизия является высшим тактическим соединением морской пехоты, которое состоит из штаба, 4 полков и 7 батальонов (разведывательного, инженерного, медицинского, автотранспортного, обслуживания, штабного и др.).

*The basic tactical unit of a Marine Division is a battalion. There are Hq Bn, Motor Transport Bn, Pioneer Bn, Recce Bn, Medical Bn, three Inf Regiments, one Arty Regiment.*

В части усиления входят 9 отдельных батальонов (3 танковых, 4 связи и 2 радиотехнических), 3 группы полевой артиллерии и 6 отдельных рот различного назначения.

*As for the reinforcement there are 9 Ind Bns. The Marine air wing has from 300 to 400 aircraft that form such major operational groups as fighter, fighter-bomber, attack fighter, helicopter.*

Авиация морской пехоты предназначена для оказания авиационной поддержки наземным силам морской пехоты.

*The Marine air force is to render close air support to the Marines operating ashore, while carrier-based aircraft are to furnish air cover for these forces.*

На вооружении авиации имеются самолеты и вертолеты, которые могут использоваться с береговых аэродромов, авианосцев, десантных вертолетоносцев и кораблей некоторых других классов.

*Exercise 7. Translate the following text at sight:*

**Hovercraft for Amphibious Assaults**

Hovercraft are attractive for many applications, especially because of their speed and amphibious potential, and in some few instances are in competition with hydrofoils. The two craft have comparable speed ranges; however, the hovercraft has the advantage of being amphibious, while the hydrofoil has the advantage when it comes to operation on the high seas.

The US Navy is investigating SEV's (ACV's) for carrying men and equipment from ship to shore during amphibious assaults. For establishing beachheads, it wants craft that are faster, more flexible, and cheaper to operate than those now in use. Current landing craft are powered by diesels, have speeds of less than 10 kt, and must unload at the water's edge. The ACV appears to be an ideal solution to the Navy's problems, and thus it is working on ACV's as part of the amphibious assault landing craft (AALC) program.

One advantage of the ACV, besides its much greater speed, is its ability to travel overland at high speed and even up 13 per cent grades. This allows men and equipment to be offloaded on the beach or farther inland, rather than at the water's edge.

Во время одного из морских десантных учений ВМС США высадка войск на побережье проводилась с помощью десантных катеров для пехоты и автотранспортных средств (LCVP). Их ТТХ: водоизмещение 13,5 т, длина 11, ширина 3,2 м, осадка 1,1 м, мощность двигателя 225 л.с., скорость хода 9 узлов.

*Exercise 8. Translate the following text from English into Russian in a written form:*

**WARNING**

Lock the torpedo in the tube immediately after loading. If the stop bolt is left in the LOAD or FIRE position after the torpedo is loaded in the tube, the torpedo may move in the tube, endangering the torpedo room personnel or the tube doors.

When securing a tube, be certain it is vented. If it is not, tube pressure buildup can endanger personnel opening the breech door.

Do not open the breech door of a torpedo tube until all pressure has been vented. A blown open breech door can injure personnel and damage equipment.

When disconnecting a mechanical interlock to enable a functional check of electrical interlock switches, be certain to reconnect it immediately following completion of the inspection.

ALL PERSONNEL involved in the operation and maintenance of the torpedo tube system must fully understand the warnings and the procedures by which the hazards are to be reduced or eliminated. Personnel should become thoroughly familiar with all aspects of safety of personnel and equipment before operation or maintenance of the equipment.

*Exercise 9. Translate the following text from Russian into English in a written form:*

**Дивизии морской пехоты США**

По сообщениям зарубежной печати, дивизии морской пехоты в отличие от армейских, имеющих бригадную структуру, состоят из полков (три пехотных и один артиллерийский). В полку три батальона и один артиллерийский дивизион; в батальоне три стрелковые роты и рота оружия. Общая численность 17-18 тысяч человек. Дивизия имеет собственные десантно-высадочные средства, бронетанковую технику и вертолёты поддержки.

Третья дивизия действует совместно с 7-м оперативным флотом. Один батальон (усиленный) этой дивизии постоянно находится на кораблях флота в боевой готовности «к немедленному использованию в случае возникновения угрозы интересам США».

Такую же задачу имеет и усиленный батальон, постоянно находящийся с кораблями 6-го флота в Средиземном море.

*Exercise 10. Translate the following text in a written form:*

**The US MC Equipment**

**Infantry weapons**

The basic infantry weapon of the Marine Corps is the M16 assault rifle family, with a majority of Marines being equipped with the M16A2 or M16A4 service

rifles (the M16A2 is being phased out). The M4 carbine and Colt 9mm SMG have also been issued. The standard side arm is the M9A1 pistol. Suppressive fire is provided by the M249 SAW (currently transitioning to the M27 IAR) and M240 machine guns, at the squad and company levels respectively. In addition, indirect fire is provided by the M203 grenade launcher in fireteams, M224 60 mm mortar in companies, and M252 81 mm mortar in battalions. The M2 .50 caliber heavy machine gun and MK19 automatic grenade launcher (40 mm) are available for use by dismounted infantry, though they are more commonly vehicle-mounted. Precision firepower is provided by the M40 series, and the Barrett M107, while designated marksmen use the DMR (being replaced by the M39 EMR), and the SAM-R.

The Marine Corps utilizes a variety of direct-fire rockets and missiles to provide infantry with an offensive and defensive anti-armor capability. The SMAW and AT4 are unguided rockets that can destroy armor and fixed defenses (e.g., bunkers) at ranges up to 500 meters. The smaller and lighter M72 LAW can destroy targets at ranges up to 200 meters. The Predator SRAW, FGM-148 Javelin and BGM-71 TOW are anti-tank guided missiles. The Javelin can utilize top-attack profiles to avoid heavy frontal armor. The Predator is a short-range fire-and-forget weapon; the Javelin and TOW are heavier missiles effective past 2,000 meters that give infantry an offensive capability against armor.

The USMC is currently seeking to purchase commercial off-the-shelf bullet-trap or shoot-through rifle-grenades. These grenades will provide individual Marines additional firepower and will allow indirect fire against targets in defilade, behind walls and buildings or rooftops and elevated positions at ranges between 30 and 150 meters.

## Ground vehicles

The Corps operates the same HMMWV and M1A1 Abrams tank as does the Army. However, for its specific needs, the Corps uses a number of unique vehicles. The LAV-25 is a dedicated wheeled armored personnel carrier, similar to the Army's Stryker vehicle, used to provide strategic mobility. Amphibious capability is provided by the AAV-7A1 Assault Amphibious Vehicle, an armored tracked vehicle that doubles as an armored personnel carrier, due to be replaced by the Amphibious Combat Vehicle, a faster vehicle with superior armor and weaponry. The threat of land mines and improvised explosive devices in Iraq and Afghanistan has seen the Corps begin purchasing heavy armored vehicles that can better withstand the effects of these weapons as part of the Mine Resistant Ambush Protected vehicle program. The Marine Corps has ordered 1,960 MRAP vehicles, hoping to use them to replace HMMWVs and some Medium Tactical Vehicle Replacements on patrols in Iraq. The Logistics Vehicle System Replacement began replacing the Logistics Vehicle System in 2009.

Prior to 2005, the Marines operated exclusively tube artillery – the M198 155 mm howitzer, now being replaced by the M777 155 mm howitzer. However, the Corps has expanded its artillery composition to include the High Mobili-

ty Artillery Rocket System (HIMARS), a truck-mounted rocket artillery system. Both are capable of firing guided munitions.

## Aircraft

The organic aviation capability of the Marine Corps is essential to its mission. The Corps operates both rotary-wing and fixed-wing aircraft mainly to provide assault support and close air support to its ground forces. However, other aircraft types are also used in a variety of support and special-purpose roles.

The light-attack and light transport capabilities are provided by AH-1W SuperCobras and UH-1N Hueys, slated to be replaced by the Bell AH-1Z Viper and the Bell UH-1Y Venom. Medium-lift squadrons flying the CH-46E Sea Knight and CH-53D Sea Stallion helicopters are in the process of converting to the MV-22 Osprey, a tiltrotor with superior range and speed. Heavy-lift squadrons are equipped with the CH-53E Super Stallion helicopter, eventually to be replaced with the upgraded CH-53K.

Marine attack squadrons fly the AV-8B Harrier II; while the fighter/attack mission is handled by the single-seat and dual-seat versions of the F/A-18 Hornet strike-fighter aircraft. The AV-8B is a V/STOL aircraft that can operate from amphibious assault ships, land air bases and short, expeditionary airfields, while the F/A-18 can only be flown from land or aircraft carriers. Both are slated to be replaced by 340 of the STOVL B version of the F-35 Lightning II, beginning training operations in 2008, and 80 of the carrier F-35C versions for deployment with Navy carrier air wings.

In addition, the Corps operates its own organic aerial refueling and electronic warfare (EW) assets in the form of the KC-130 Hercules and EA-6B Prowler, respectively. The Hercules doubles as a ground refueller and tactical-airlift transport aircraft. The Prowler is one of only two active tactical electronic warfare aircraft left in the United States inventory, and has been labeled a "national asset"; frequently borrowed along with Navy Prowlers and EA-18G Growlers to assist in any American combat action since the retirement of the Air Force's own EW aircraft.

The Marines operate unmanned aerial vehicles: the RQ-7 Shadow and Scan Eagle for tactical reconnaissance.

Marine Fighter Training Squadron 401 (VMFT-401), operates F-5E, F-5F and F-5N Tiger II aircraft in support of air combat adversary (aggressor) training. Marine Helicopter Squadron One (HMX-1) operates the VH-3D Sea King and VH-60N Whitehawk helicopters in the VIP transport role, most notably Marine One, but are due to be replaced. A single Marine Corps C-130 Hercules aircraft "Fat Albert" is used to support the U.S. Navy's flight demonstration team, the "Blue Angels".

# WEAPONS OF MASS DESTRUCTION

## Lesson 1

## NUCLEAR WEAPONS. GENERAL CHARACTERISTICS

*Exercise 1. Practise for the following for pronunciation:*

| | |
|---|---|
| atomic [ə'tɔmɪk] | uranium [juə'reɪnɪəm] |
| fission['fɪʃ(ə)n] | plutonium [pluː'təunɪəm] |
| nucleus ['njuːklɪəs] | trotyl ['trəutɪl] |
| yield [jiːld] | reaction [rɪ'ækʃ(ə)n] |
| neutron ['njuːtrɔn] | isotope ['aɪsətəup] |

*Exercise 2. Read and learn the following words and word combinations by heart:*

| | |
|---|---|
| mass destruction weapon | оружие массового поражения |
| nuclear explosion | ядерный взрыв |
| hydrogen | водород |
| carbon | углерод |
| oxygen | кислород |
| nitrogen | азот |
| nucleus | ядро |
| proton | протон |
| neutron | нейтрон |
| atomic weapon | ядерное оружие; ядерный боеприпас |
| nuclear weapon | ядерное оружие; ядерный боеприпас |
| fission | расщепление, деление (*ядер*) |
| fusion | синтез (*ядер*) |
| isotope | Изотоп |
| uranium | Уран |
| plutonium | Плутоний |
| chain reaction | цепная реакция |
| critical mass | критическая масса |
| subcritical quantity | подкритическая масса |
| supercritical quantity | надкритическая масса |

| | |
|---|---|
| deuterium | дейтерий, тяжелый водород |
| helium | гелий |
| thermonuclear process | термоядерная реакция |
| thermonuclear weapon | термоядерное оружие; термоядерный боеприпас |
| yield | мощность (*ядерного боеприпаса*) тротиловый эквивалент |
| kiloton | килотонна |
| megaton | мегатонна |
| to alter the atomic composition | изменять атомный состав [ядерную структуру] |
| to split a nucleus | расщеплять ядро |
| to split under bombardment by neutrons | расщепляться при бомбардировке нейтронами |
| outer electrons | электроны, вращающиеся вокруг ядерного ядра |
| self-sustaining nuclear chain reaction | саморазвивающаяся ядерная цепная реакция |
| to cause destruction on a mass scale | вызывать массовое уничтожение |
| rapid release of energy | быстрое высвобождение энергии |
| to enter the nucleus of an atom | проникать в ядро атома |
| to set off by means of a detonator | подрывать с помощью детонатора |
| to arise from fission | возникать в результате деления (*ядер*) |

*Exercise 3. Read the following text and translate it into Russian at sight:*

Weapon of mass destruction (otherwise known as NBC weapons) are termed so because they all cause destruction on a mass scale. Most powerful of all is a nuclear weapon.

As the war in Europe had began in 1939, the world's scientific community had been in a state of some professional ferment over a rapid series of discoveries on the process by which uranium atoms split under bombardment by neutrons. This phenomenon was named fission because of its similarity to the division of a biological cell.

The image of the atom is one of a small solar system with a heavy positively charged nucleus made of protons and neutrons, orbited by light negative electrons. As each atom is electrically neutral the number of protons in the nucleus is equal to that of the outer electrons. The atomic number of an atom, and its fundamental chemical properties is determined by the number of protons. The number of neutrons in atom of the same element is not necessarily constant. Variations which can lead to differing physical and nuclear properties are known as isotopes. They are distinguished from one another by quoting the total number, neutrons plus protons, of particle contained in the nucleus (e.g. uranium, 235, or plutonium, 239).

A key characteristics of neutrons which makes them potential agent of change in a nucleus, is that they are uncharged. Only certain combinations of neutrons and protons are stable. When few in number, equal amounts of protons result in stability. For larger nuclei the proportion of neutrons required is much greater. The heavy elements relevant to the design of nuc wpns are U and Pu.

By 1939 it was discovered that when U atoms were bombarded with neutrons they could split with the release of enormous quantities of energy. Furthermore, free neutrons could cause fission in other nuclei and thus start a chain reaction in a mass of fissionable material and produce energy of great yield.

The first man-initiated self-sustainig nuclear chain reaction was achieved on 2 December 1942 in Chicago as part of the wartime Manhattan project organized in the US for building nuc bombs. The bombs that destroyed Hiroshima and Nagasaki in August 1945 produced explosions equivalent to that of 14000 and 20000 tons of trotyl, or TNT, respectively. Many of nuc munitions now in possession of the major powers are in the megaton range.

*Exercise 4. Answer the following questions:*

1. What is term "weapons of mass destruction" meant?
2. What is the name of the process by which uranium atoms split under bombardment by neutrons?
3. When and where was the first chain reaction achieved?
4. When and where was the first atomic bomb employed as the weapons of mass destruction?

*Exercise 5. Give corresponding English equivalents:*

Тяжелое ядро с положительным зарядом, состоящее из протонов и нейтронов; основные химические свойства определяются количеством протонов; процесс, вызывающий расщепление атомов урана при бомбардировке их нейтронами; высвобождение огромного количества энергии; для более крупных ядер необходимо гораздо большее количество нейтронов; свободные нейтроны способны вызывать деление других ядер; ядерные боеприпасы мегатонной мощности.

*Exercise 6. Decipher and translate the following abbreviations:*

Nuc; chars; explo; NBC; wpns; TNT; elm; ammo; spt; msl; sup; kt; Pu; SSBN; FA; U; HE; AVLB; SAC; MLRS; MIRV; Lt.Col.

*Exercise 7. Get ready and translate at normal speaking speed:*

Открытие нейтрона привело к возникновению новых направлений в ядерных исследованиях. Так в некоторых тяжелых элементах, в частности в уране и плутонии, ученые обнаружили такое явление, как распад ядра на два осколка. Этот процесс называется делением ядра. Он сопровождается выделением большого количества энергии на каждое разделившееся ядро.

Изучение процесса деления урана показало, что медленными нейтронами делится лишь U-235, более тяжелый уран U-238 поглощает медленные нейтроны без деления. Медленными нейтронами делятся также Pu-239 и U-233. Поэтому делящимися материалами или ядерными взрывчатыми веществами для цепных реакций деления называются те вещества, в которых реакцию деления вызывают медленные нейтроны. Реакция деления тяжелых ядер может быть использована для освобождения огромных количеств энергии.

Действительно, в соответствующем количестве ядерного взрывчатого вещества один нейтрон может дать начало разветвленной цепи делений, причем число ядер, участвующих в делении в единицу времени, будет возрастать по мере увеличения числа вторичных нейтронов в каждом поколении

*Exercise 8. Get prepared to make a two-way translation of the following sentences by ear:*

**A. from English into Russian:**

1. An explosion is a result of a very rapid release of a large amount of energy within a limited space.
2. This is true for a conventional explosion of TNT as well as for a nuclear explosion.
3. In a nuclear explosion, the energy is produced as a result of the formation of different atomic nuclei.
4. The materials used to produce a nuc explosion are certain isotopes of the U and Pu.
5. Isotopes are forms of the same element having identical chemical properties but differing in their atomic masses.
6. According to their yield, nuc munitions are broadly classed as strategic and tactical.
7. Strategic munitions are those with TNT equivalent ranging from 50 to 500kt as well as those in a megaton range.
8. Nuclear weapons differ from conventional type weapons in the fact that substances remaining after the explosion are radioactive.
9. The process of radioactivity is accomplished by the emission of alpha and beta particles and of gamma rays.
10. All atomic nuclei contain different number of protons and neutrons surrounded by light electrons.

**B. from Russian into English:**

11. Все вещества окружающей нас природы состоят из весьма малых частиц, которые называются атомами.

12. Атом имеет сложное устройство. В центре атома находится очень плотное ядро, вокруг которого вращаются электроны.

13. Высокая плотность ядра свидетельствует об огромной энергии внутриядерных сил.

14. Простейшее ядро, ядро первого в таблице Д. Менделеева элемента – водорода, названо протоном.

15. Число протонов в ядре равно порядковому номеру элемента в периодической системе Д. Менделеева.

16. Число протонов в ядре каждого элемента строго определено, а число нейронов может изменяться в некоторых пределах.

17. Существую разновидности атомов одного и того же элемента, которые отличаются друг от друга массовым числом. Такие атомы называются изотопами.

18. Ядерный взрыв может не только вызвать массовое поражение личного состава, но и оказать на него большое психологическое воздействие.

19. Ядерные боеприпасы делятся на стратегические и тактические. К стратегическим относятся боеприпасы с тротиловым эквивалентом от 50 до 500 тыс.тонн тротила, а также боеприпасы в мегатонном диапазоне.

20. Стратегические ядерные боеприпасы рассматриваются, главным образом, как средство нанесения мощных ударов по крупным экономическим и политическим центрам противника.

*Exercise 9.Translate the following text in a written form from Russian into English:*

Так как почти вся энергия атомов сосредоточена в их ядрах, то правильнее ее назвать не атомной, а ядерной энергией. Когда стало известно, что в ядре атома заключается огромная энергия, этот факт привлек к себе внимание ученых всего мира. Все виды энергии, которые были известны ранее, обусловлены двумя видами сил – либо электрическими, либо силами тяготения. Силы, действующие внутри ядра атома, назвали ядерными.

Вопрос о связи между энергией и массой любого вещества был решен принципиально после создания А. Эйнштейном теории относительности. А. Эйнштейн показал, что источником энергии может быть любое вещество, и установил определенное соотношение между количеством заключенной в веществе энергии и его массой.

Физическая сущность открытия А. Эйнштейна состоит в том, что в природе нет нематериального движения, так как нет и не может быть материи без движения. Материя и движение неотделимы друг от друга. Энергия, кото-

рую необходимо затратить для разрушения ядра и разделения его на свободные нейтроны (без сообщения им кинетической энергии), названа энергией связи ядра (binding energy) она идет на совершение работы против ядерных сил. Чем сильнее взаимодействуют протоны и нейтроны между собой в данном ядре, тем большую работу нужно совершить для его разрушения.

*Execise 10. Act as an interpreter:*

Q: Лейтенант Чопра, поясните нам, пожалуйста, как вы понимаете явление радиоактивности.
A: Well, radioactivity is a spontaneous release, or emission of radiation from the nuclei of an unstable isotope to form a stable one of another element. The process is accomplished by the emission of a nuclear particle like alpha and beta, and of gamma rays.
Q: А что представляют собой гамма-лучи?
A: A gamma ray is similar to a high-energy X-ray.
Q: А какие виды радиоактивности вы знаете?
A: There exist two types of radioactivity: natural and artificial. Natural radioactivity is a spontaneous process by which an element reduces its atomic weight and converts itself into a new and more stable element lower in the periodic table.
Q: Влияют ли на радиоактивность какие-нибудь внешние факторы?
A: No, the process can not be modified by the application of heat, cold, pressure or any chemical reagent.
Q: А искусственная радиоактивность?
A: Artificial radioactivity does not differ essentially from its natural prototype save that it is produced in element by manmade means, i.e. by the bombardment of an element by any of nuc particles.
Q: В чем заключается основное различие между альфа- и бета-излучением?
A: Alpha particles are a form of nuc radiation since they are emitted from atomic nuclei but they differ from the negatively charged beta particles arising from the fission products in being much heavier and carrying a positive electrical charge.

## WEAPONS OF MASS DESTRUCTION

### Lesson 2
### NUCLEAR EXPLOSIONS AND THEIR EFFECTS

*Exercise 1. Practise for the following for pronunciation:*

effect [ɪ'fekt]
pulse [pʌls]
residual [rɪ'zɪdjuəl]
radiation [ˌreɪdɪ'eɪʃ(ə)n]
neutron ['nju:trɔn]
soman [səʊmən]
phosgene ['fɔzdʒi:n]
fallout['fɔ:laut]
thermal ['θɜ:m(ə)l]
blast [blɑ:st]
subsurface [ˌsʌb'sɜ:fɪs]
sarin ['sɑ:rɪn]
cyanide ['saɪənaɪd]
binary ['baɪnərɪ]

*Exercise 2. Read and learn the following words and word combinations by heart:*

| | |
|---|---|
| effect | действие; влияние; результат; *pl* поражающие факторы (*ядерного взрыва*) |
| shock; blast wave | ударная волна; взрывная волна |
| thermal radiation | световое излучение |
| heat and light | световая и тепловая энергия |
| nuclear radiation | ядерное излучение |
| radioactive material | радиоактивные продукты |
| radioactive contamination | радиоактивное заражение |
| fallout | выпадение радиоактивных осадков |
| electromagnetic pulse | электромагнитный импульс |
| neutron radiation | нейтронное излучение |
| initial nuclear radiation | проникающая радиация |
| residual nuclear radiation | остаточная радиация |
| air burst | воздушный взрыв |

| | |
|---|---|
| fireball | светящаяся область (*ядерного взрыва*) |
| surface burst | наземный [надводный] взрыв |
| subsurface burst | подземный [подводный] взрыв |
| mushroom-shaped cloud | грибовидное облако |
| primary burn | первичный ожог |
| secondary burn | вторичный ожог |
| gamma rays | гамма-лучи |
| electron | электрон |
| to cause a considerable increase of temperature and pressure | вызывать значительное повышение температуры и давления |
| to emit in the form of light and heat | излучать в виде света и тепла |
| to classify according to height of burst | классифицировать в зависимости от высоты взрыва |
| to explode beneath the surface of the ground or water | производить наземный или подводный взрыв |
| to give off great quantities of heat and nuclear radiation | выделять большое количество светового излучения и радиации |

*Exercise 3. Read the following text and translate it into Russian at sight:*

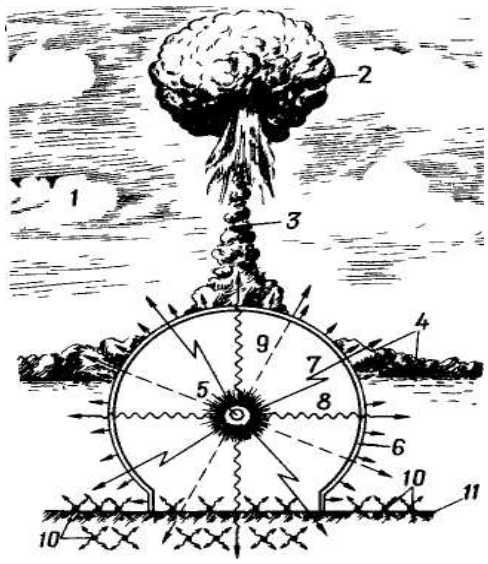
**Nuclear explosions**

Among the principal effects produced by a nuc explosion are: blast or shock wave, thermal radiation, nuclear radiation, radioactive contamination, electromagnetic pulse and neutron radiation.

The sudden liberation of energy causes a considerable increase of temperature and pressure, so that all the materials present are converted into hot, compressed gases These gases rapidly expand and initiate a shock wave in the surrounding medium – air, water or earth. This shock wave is called a blast wave because it resembles an explosion and is accompanied by a very strong wind. In water or in the gnd, however, the term "shock" is used, because the effect is like that of a sudden impact.

A fairly large proportion of the energy in a nuc explosion is emitted in the form of light and heat, generally referred to as "thermal radiation". The nuc explosion is also accompanied by highly-penetrating and harmful invisible rays, called "the initial nuclear radiation". Finally, the substances remaining after a nuc explosion are radioactive, emitting similar radiations over an extended period of time. This is known as the "residual nuclear radiation".

There are three types of explosions, classified according to height of burst: the air burst when the fireball does not touch the gnd, the surface burst when the fireball touches the gnd, and the subsurface burst when the wpn is exploded beneath the surface of the gnd or water.




***Nuclear explosion***

1 – nuclear explosion ядерный взрыв; 2 – mushroom cloud грибовидное облако; 3 – column (stem) of dirt столб пыли; 4 – clouds of dirt клубы пыли; 5 – ground zero эпицентр взрыва; 6 – shock (blast) wave ударная волна; 7 – heat (thermal) radiation световое излучение; 8, 9 – (initial) nuclear radiation проникающая радиация; 8 – neutrons поток нейтронов; 9 – gamma radiation гамма излучение; 10 – radioactive contamination of ground радиоактивное заражение местности; 11 – the earth's surface поверхность земли

## Effects

At the instant of a nuc explosion, the fission or fusion produces a fireball that gives off great quantities of heat and nuclear radiation. As the fireball rises, it creates an updraft that pulls material from the gnd into the air to mix with the material from the bomb. The heat from a nuclear explosion injures humans in two ways: primary (flash) burns and secondary burns from fires caused directly or indirectly by the explosion.

The blast energy can cause damage either through direct action of blast overpressure or through secondary effects caused by flying debris or by overturning and tumbling objects.

A nuc explosion is accompanied also by tremendous output of initial nuclear radiation. This radiation is in the form of gamma rays, neutrons and alpha and beta particles. Gamma rays are invisible and of very short wave length. They pass through the human body and cause damage to the blood and tissues. They are extremely dangerous to an individual at all times. Neutrons are small, electrically neutral particles emitted as a result of atomic breakdown (fission) or fusion. They have the ability to induce radioactivity in other substances and to cause dangerous levels of radioactivity in the vicinity of GZ. Beta particles are electrons with a negative electrical charge. Alpha particles are positively charged. When beta and/or alpha particles or radioactive material giving them off enter the body through wounds, the mouth or the nose, they can be a long-term hazard.

The extent of the hazard from a nuclear radiation emitted at the time of the explosion (initial nuclear radiation) depends mainly on the power or yield of the wpn. The extent of the hazard which arises from the radioactivity left in the fireball and subsequently deposited on the ground ("residual nuclear radiation") is, however, influenced more by the height of the burst and the nature of the surface underneath.

*Exercise 4. Answer the following questions:*

1. What is the nature of the blast wave?
2. What are the principal effects produced by a nuclear explosion?
3. What initiates a shock wave in 'the surrounding medium?
3. What does the term "thermal radiation" mean?
4. What is the "residual nuclear radiation"?
5. What does the initial radiation consist of?
5. What are the three types of explosions?

*Exercise 5. Give corresponding English equivalents:*

Вызывать значительное повышение температуры; лучи, обладающие высокой проникающей способностью; наносить поражение личному составу; вызывать поражение крови и тканей; создавать опасные уровни радиации; излучать альфа-частицы; производить разрушения; наносить ущерб; сопровождаться сильным ветром; классифицироваться в зависимости от высоты взрыва; во время взрыва.

*Exercise 6. Decipher and translate the following abbreviations:*

GZ; nuc explo; NBC atk; SP how; Pu; cbt veh; nuc whd; msl; ammo; vic; ALCM; CSUSAF; AFB; USN.

*Exercise 7. Get ready and translate at normal speaking speed:*

Ударная волна является основным фактором ядерного взрыва. На ее образование расходуется более половины всей энергии взрыва. Ударная волна представляет собой область резкого сжатия воздуха, распространяющаяся в стороны от центра взрыва со сверхзвуковой скоростью. Обладая большим запасом энергии, ударная волна способна наносить поражения людям, разрушать различные сооружения, боевую технику и другие объекты.

Световое излучение также относится к числу основных поражающих факторов. На его долю приходится до 40 % энергии взрыва. При подземном и подводном взрывах световое излучение как поражающий фактор отсутствует. Световое излучение представляет собой мощный поток ультрафиолетовых, видимых и инфракрасных лучей, распространяющиеся со скоростью света во все стороны от центра взрыва. Результатам действия светового излучения являются первичные ожоги от вспышки, а также вторичное поражение людей и техники от вызванных вспышкой пожаров.

Ядерная радиация и, прежде всего, проникающая радиация представляет собой поток радиоактивных излучений, в основном гамма-лучей и нейтронов, испускаемых из зоны взрыва и способных проникать через значительные толщи материалов. Действие проникающей радиации продолжается 10–15 секунд. Она оказывает вредное биологическое воздействие на людей и животных, вызывая у них так называемую лучевую болезнь.

*Exercise 8. Get prepared to make a two-way translation of the following sentences by ear off hand:*

**A. from English into Russian:**

1. Initial nuc radiation is that nuc radiation which is emitted by a nuclear explosion within the first minute after the burst.
2. The blast energy can cause damage either through direct action of blast overpressure or through secondary effects caused by flying debris or by overturning and tumbling objects.
3. The nuc explo is also accompanied by highly-penetrating and harmful invisible rays, called "the initial nuc radiation".
4. There are three types of explosions, classified according to height of burst: the air burst, the surface burst and the subsurface burst.
5. The thermal effect of the fireball will produce more casualties than any other product of the explosion.
6. The heat travels with the speed of light and is so brief that is accurately described as a flash.
7. A soldier in nuclear warfare must protect himself against blast, heat, and nuclear radiation.
8. Very high winds accompany the blast wave adding to its harmful nature.
9. The fireball of the explosion reaches temperatures hotter than the surface of the sun.

**B. from Russian into English:**

10. В зависимости от вида взрыва распространение воздушной ударной волны будет иметь свои особенности.
11. При наземном взрыве воздушная ударная волна имеет форму полусферы с центром в точке взрыва ядерного боеприпаса.
12. При воздушном ядерном взрыве ударная волна, достигая поверхности земли, отражается от нее.
13. Энергия светового излучения поглощается поверхностями освещаемых тел, которые при этом нагреваются.
14. Степень воздействия светового излучения на технику и сооружения зависит от свойств их конструкционных материалов.
15. Источником проникающей радиации являются ядерные реакции деления и синтеза, протекающие в боеприпасах в момент взрыва.

16. Источником проникающей радиации является также радиоактивный распад осколков деления.

17. Ядерные взрывы в атмосфере и в более высоких слоях приводят к возникновению мощных электромагнитных полей.

18. Одновременное воздействие ударной волны, светового излучения и проникающей радиации обуславливает комбинированный характер поражающего действия ядерного боеприпаса.

*Exercise 9.Translate the following text in a written form from Russian into English:*

**Виды ядерных взрывов**

К воздушным ядерным взрывам относятся взрывы, произведенные в воздухе на такой высоте, когда светящаяся область взрыва не касается поверхности земли (воды). Наземным ядерным взрывом называется взрыв, произведенный на поверхности земли или в воздухе, но на небольшой высоте. При этом взрыве светящаяся область в начале ее развития имеет форму полусферы, лежащей своим основанием на поверхности земли.

Подземным ядерным взрывом называется взрыв, произведенный на глубине нескольких метров. При этом взрыве светящаяся область может не наблюдаться, так как происходит почти полное поглощение светового излучения грунтом и отсутствует характерная грибовидная форма.

Надводный взрыв имеет внешнее сходство с наземным взрывом. Грибовидное облако надводного взрыва состоит из плотного радиоактивного тумана или водяной пыли, оседание которых приводит к радиоактивному заражению акватории, местности и объектов.

Подводным ядерным взрывом называется взрыв, осуществленный под водой. При таком взрыве вспышка и светящаяся область, как правило, не видны. При взрыве на небольшой глубине над поверхностью воды поднимается столб воды, в верхней части которого образуется облако, состоящее из брызг и паров воды.

*Exercise 10. Act as an interpreter:*

Q: Капитан Кэсс, расскажите хотя бы вкратце, что должны знать морские пехотинцы о видах ядерных взрывов и их основных поражающих факторах?

A: Well, we normally tell our men what the main indications of a nuclear explosions and inform them of the principal effects and teach them how to survive on the nuclear battlefield, i.e. how to withstand the blast, heat and nuclear radiation. We all know how important it is. I used to tell my Marines about three types of nuclear explosion.

Q: Вот и продолжайте так, как если бы вы проводили занятия с подчиненными?
A: Ok sir. I know that the air burst is the one in which the fireball does not touch the ground. And the greatest damage here is from blast and heat.
Q: А уровень радиации?
A: The only hazardous radiation is the initial radiation and the neutron-induced radiation in the immediate area of the burst.
Q: Могли бы охарактеризовать наземный взрыв?
A: This burst permits a portion of the fireball to touch the ground. Here blast damage is reduced but damage from heat and radiation is about the same as in the air burst.
Q: Характеризуя наземный ядерный взрыв, вы ничего не сказали об остаточной радиации. На что Вы прежде всего обращаете внимание, когда говорите морским пехотинцам о подземном взрыве?
A: Well, I say that in case most of the blast is a ground or water shock wave. And radiological contamination in the burst area is very high.

# WEAPONS OF MASS DESTRUCTION

## Lesson 3

## CHEMICAL WARFARE AGENTS

*Exercise 1. Practise for the following for pronunciation:*

agent ['eɪdʒ(ə)nt]
soman [səʊmən]
phosgene ['fɔzdʒiːn]
incendiary [ɪn'sendj(ə)rɪ]
lewisite ['luːɪsaɪt]
sarin ['sɑːrɪn]
cyanide ['saɪənaɪd]
binary ['baɪnərɪ]
incapacitant [ɪnkə'pæsɪt(ə)nt]
phosphorus ['fɔsf(ə)rəs]

*Exercise 2. Read and learn the following words and word combinations by heart:*

| | |
|---|---|
| chemical agent | боевое химическое вещество |
| casualty gas | ОВ поражающего действия |
| physiological action | физиологическое воздействие |
| nerve gas | ОВ нервно-паралитического действия |
| blood gas | ОВ общеядовитого действия |
| blister gas | ОВ кожно-нарывного действия |
| choking gas | ОВ удушающего действия |
| vomiting gas | ОВ рвотного действия |
| tear gas | ОВ слезоточивого действия |
| irritant chemical agent | ОВ раздражающего действия |
| smoke agent | дымообразующее вещество |
| incendiary agent | зажигательное вещество |
| flame fuel | горючая смесь |
| sarin (GB) | зарин |
| tabun (GA) | табун |
| soman (GD) | зоман |
| V-gas | ОВ нервно-паралитического действия |
| hydrogen cyanide (AC) | синильная кислота |
| mustard (HD) | иприт |
| lewisite (L) | люизит |

| | |
|---|---|
| phosgene (CG) | фосген |
| chloropicrin (PS) | хлорпикрин |
| adamsite (DM) | адамсит |
| chloracetophenone (CN) | хлорацетофенон |
| white phosphorus (WP) | белый фосфор |
| portable flame thrower | ранцевый огнемет |
| flame mine | огневой фугас |
| spray-type equipment | выливное авиационное оборудование |
| binary chemical weapon | бинарный химический боеприпас |
| to maintain an active cml program | осуществлять активную программу по подготовке к химической войне |
| to be integrated within other units | входить в состав других частей |
| to conduct research and development on binaries | проводить научно-исследовательскую работу по созданию и совершенствованию бинарного химического оружия |
| to be employed primarily against personnel | применяться в основном для поражения личного состава |

*Exercise 3. Read the following text and translate it into Russian at sight:*

## Chemical agents

Since the end of World War II the United States has maintained an active cml program.

Current CW preparations in the USA and NATO countries include the stockages of bombs, shells and msl warheads filled with lethal or harassing agents; the maintenance of CW agent plants on a standby conditions; and the deployment of associated equip and pers. NATO armies have specialized troops for the offensive role in CW; this tends to be integrated within other units, but in the US Army there is a Chemical Corps (Cml C).

Chemical agents may be classified by physical state (solid, liquids, gases), by tactical use (casualty gases, training and riot control gases, screening smokes, signaling smokes, incendiaries) and by physiological action (nerve gases, blood gases, blister gases, choking gases, vomiting and tear gases). Cas gases may be persistent or nonpersistent.

Another classification divides cml agts into toxic, «irritant, smoke and incendiary including flame fuels.

## Toxic Chemical Agents

Nerve agents sarin (GB), tabun (GA), soman (GD) and V-gases are quick-acting cml agts that in liquid or vapor form produce casualties from incapacitation to death by paralyzing respiratory muscles of exposed pers.

Blood gases as hydrogen cyanide (AC) attack the bloodstream barring oxygen to tissue.

Blister agents–mustard (HD), lewisite (L) are delayed-acting cml agts that in liquid or vapor form produce cas among exposed pers by their blistering action on the eyes, skin or parts of the respiratory system.

## Binary Chemical Weapons

For years, the Army Cm l C has been conducting research and development on binaries with a view to replacing its ageing stockpiles of nerve agents–estimated to amount to about 40 million pounds – with the new wpns. The idea is that since binaries consist of two relatively nontoxic components which form a lethal agent (CB) only when they are mixed together, they can be manufactured and stored much more safely than conventional nerve gases. This is a new generation of cml wpns. Besides, the US Army is pushing ahead its plans to produce a binary wpn which would form the much more persistent nerve agent VX. The gas GB quickly breaks down in the environment, but VX can remain lethal for several weeks under some conditions. The new agents can be delivered on tgt by "artillery projectiles filled with a nontoxic chemical solution." The nerve gas codenamed VX is the most toxic of a family of V-agents. VX is said to be so toxic that in liquid form a drop the size of a pinhead, placed on the skin is lethal.

## Irritant Chemical Agents

Choking gases or lung irritants–phosgene (CG) and chloropicrin (PS), when being breathed, cause irritation and inflammation of bronchial tubes and lungs.

Vomiting gases such as adamsite (DM), when disseminated as an aerosol, cause violent sneezing, nausea and vomiting.

Tear gases–chloracetophenone (CN) and bromobenzylcyanide (BBC) cause a copious flow of tears and intense eye pain.

## Smoke Agents

Signaling smoke is produced by a fuel containing an organic dye. When the fuel is burned the dye is vaporized and then is condensed to form the colored smoke.

Screening – fog and oil that produces a very dense white smoke when vaporized and condensed; white phosphorus (WP) is a solid that burns when exposed to air, forming a very dense white smoke.

## Flame Fuels and Incendiary Agents

Flame fuel is employed primarily against pers. It consists of special blends of petroleum products, usually in thickened form. Incd agts consist of a combination of flammable substances that burn with an intense heat.

## Methods of Dissemination

Cml agts may be disseminated by bursting-type munitions (artillery and mortar shells, rockets, bombs, grenades and land mines), generating-type equipment and munitions which employ heat to vaporize and disseminate cml agts (mechanical generator, thermal generator, burning-type generator), pressure-type weapons and munitions which employ industrial compressed gases to project cml agts towards the tgt. They include mechanical pressure wpns (portable flame thrower) and field expedient munitions (flame mines) and spray-type equip which can be used to disseminate large quantities of liquid or solid particle chemical agents from acft.

*Exercise 4. Answer the following questions:*

1. What do current CW preparations in the USA and NATO countries include?
2. What service of the US Army is responsible for CW preparations?
3. What is the general classification of chemical agents?
4. What are the basic characteristics of toxic chemical agents?
5. What are the basic characteristics of binary chemical weapons?
6. What are the basic characteristics of irritant chemical agents?
8. What are the principle methods of cml agts dissemination?

*Exercise 5. Give corresponding Russian equivalents:*

to produce casualties; to paralyze respiratory muscles; to attack the bloodstream; to bar oxygen to tissue; to cause irritation; to cause nausea; to cause a copious flow of tears; to contain an organic dye; to project chemical agents towards the target; to disseminate chemical agents; to vaporize chemical agents.

*Exercise 6. Decipher and translate the following abbreviations:*

WP; DM; CN; HD; SGF; L; GA; BBC; PS; CG; GD; AC; GB; cml; CW; msl; equip; pers; Cml C; wpns; tgt; cas; agt; CB; acft.

*Exercise 7. Get ready and translate at normal speaking speed:*

Химическое оружие – один из видов оружия массового поражения. К нему относятся такие средства боевого применения, поражающие свойства которых основаны на токсическом воздействии ОВ на организм человека.

Результатом длительного применения химического оружия могут быть тяжелые экологические и генетические последствия, устранение которых потребует несколько десятилетий.

Массированное применение химического оружия для решения боевых задач специально созданными средствами было осуществлено только в годы первой мировой войны. Общее количество пораженных ОВ составило 1 млн 300 тыс. человек.

17 июня 1925 года представители 37 государств подписали в Женеве Протокол о запрещении применения на войне удушливых, ядовитых и других подобных газов и бактериологических средств. Советский Союз в 1927 году ратифицировал этот протокол. США отказались от его ратификации и только в 1975 году были вынуждены ратифицировать договор, выдвинув при этом ряд оговорок.

В нарушение международных соглашений США применяли химическое оружие в Корее, а затем во Вьетнаме. От них пострадали 2 млн человек.

*Exercise 8. Get prepared to make a two-way translation of the following sentences by ear:*

**A. from English into Russian:**

1. The current US chemical weapons stockpile is composed mostly of VX, sarin, and mustard gas.
2. These chemical agents are in 105mm, 155mm, and 8-in howitzer rounds as well as air bombs.
3. The Navy's 600lb MK 116 Weteye bomb is filled with non-persistent sarin.
4. US open-air testing of chemical weapons was banned in 1968 when a flock of sheep was killed in Dugway Proving Ground in Utah.
5. The bigeye program is considered to be the backbone of US chemical modernization.
6. Some sources say that the bigeye is to be used only until it can be replaced by an air-to-surface standoff missile.
7. Many consider the cruise missile too expensive for chemical delivery because it can not carry a large enough payload.
8. It has been said that chemical weapon are the poor man's nuclear bomb but there are considerable differences between the two.
9. Individual masks and overgarment offer good protection against chemical agents but reduce combat mobility by 40–50 %.

**B. from Russian into English:**

10. Химическое оружие применяется с помощью авиации, ракетных войск, артиллерии, химических войск и др.
11. В сентябре 1914 года германская армия, нарушив соглашения Гаагских конференций, применила артиллерийские химические снаряды (с раздражающими ОВ).
12. В 1935–36 гг. в войне с Эфиопией итальянцы провели 19 массированных химических нападений.

13. Из 50 тысяч человек потерянных Эфиопией, 15 тысяч погибло от ОВ.

14. Химическое оружие применяла империалистическая Япония во время войны против Китая в 1937–43 гг.

15. ОВ составляют основу химического оружия. Они поражают организм человека, проникая через органы дыхания, кожные покровы и раны.

16. В армии США ОВ различают по тактическому назначению и физиологическому действию на организмы.

17. По тактическому назначению ОВ распределяются на смертельные, временно выводящие из строя, раздражающие и учебные.

*Exercise 9.Translate the following text in a written form from Russian into English:*

По мнению американского командования, химическое оружие имеет ряд преимуществ по сравнению с другими видами оружия, в том числе и по сравнению с ядерным оружием, так как не вызывает разрушений промышленных объектов. ОВ составляют основу поражающего действия химического оружия.

ОВ называются токсические соединения, которые при боевом применении способны наносить поражение живой силе или снижать ее боеспособность. Под поражением живой силы понимается всякое нарушение нормальной деятельности организма, вызванное действием ОВ. Поражения могут быть различной степени тяжести: от поражений, вызывающих временный вывод живой силы из строя, до поражений, приводящих к смертельному исходу.

ОВ в отличие от других боевых средств, способны наносить массовое поражение живой силе на больших площадях, проникать в танки, боевые машины и сооружения, не имеющие специального оборудования.

*Exercise 10. Act as an interpreter:*

Q: Сенатор, какова была политика США в отношении химического оружия после Вьетнама?

A: In the US, partly because of the protests aroused by the use of herbicides and defoliants in Vietnam, and because of growing environmentalist concern about chemical testing, the Nixon administration renounced chemical weapon production.

Q: Изменилась ли ситуация с химическим оружием с приходом Рональда Рейгана?

A: Yes. In 1981 funds were made available for construction of the facilities to produce new chemical weapons but the Congress balked at allotting money.

Q: А что было потом?
A: In 1985, Congress approved funds for new chemical weapons.
Q: О каком оружии вы говорите?
A: I mean binary chemical weapons.
Q: Это новый тип химического оружия?
A: Well, I would not say new. Actually, it is not exactly new since the process was known back in 60s. But since that time the Army was not able to get the program approved.
Q: Какие средства доставки бинарных боеприпасов планирует создать Пентагон?
A: The Pentagons program request is for production of a short range binary artillery projectiles with the non-persistent Sarin, long-range aerial bomb with the persistent agent VX, and funding for chemical warhead for the multiple launch rocket system.
Q: Где планируется складировать бинарное оружие? Будет ли оно хранится в Европе?
A: After considerable controversy about the question of forward deployment in Europe, it was finally decided that the new weapons would be stocked in the US only, and air-lifted to Europe in case of crisis or they could be stored on ships in international waters.
Q: А какие еще варианты предусматриваются?
A: It has been suggested that the artillery shells filled with one component only could be forward deployed, while the other component woolbearing-lifted in time of crisis.

# WEAPONS OF MASS DESTRUCTION

## Lesson 4

## COLLECTIVE AND INDIVIDUAL NBC PROTECTION

*Exercise 1. Practise for the following for pronunciation:*

| | |
|---|---|
| agent ['eɪdʒ(ə)nt] | sarin ['sɑːrɪn] |
| soman [səʊmən] | cyanide ['saɪənaɪd] |
| phosgene ['fɔzdʒiːn] | binary ['baɪnərɪ] |
| incendiary [ɪn'sendj(ə)rɪ] | incapacitant [ɪnkə'pæsɪt(ə)nt] |
| lewisite ['luːɪsaɪt] | phosphorus ['fɔsf(ə)rəs] |

*Exercise 2. Read and learn the following words and word combinations by heart:*

| | |
|---|---|
| individual protection | индивидуальная защита; индивидуальные средства защиты |
| collective protection | коллективная защита; коллективные средства защиты |
| overhead cover | защитное покрытие; укрытие от навесного огня |
| burn-resistant clothing | огнестойкая одежда |
| shielding | защита; прикрытие; экранирование |
| concrete | бетон; бетонный |
| abrasion | ссадина |
| gas mask | противогаз |
| protective mask | противогаз |
| contamination | заражение |
| immunizing shot | предупредительная прививка |
| quarantine | подвергать карантину |
| inhalation | вдыхание |
| permeable protective clothing | импрегнированное обмундирование |
| impregnated combat uniform | импрегнированная полевая форма |
| vesicant gas resistant leather dressing | смазка для обуви, предохраняющая от ОВ кожно-нарывного действия |

| | |
|---|---|
| impermeable protective suit | изолирующая защитная одежда |
| atropine | атропин |
| radiac instrument | дозиметрический прибор |
| meter | измерительный прибор |
| dosimeter | дозиметр |
| radiation dose | доза радиации |
| radiation counter | дозиметрический прибор |
| chemical-agent detector | прибор химической разведки |
| Geiger counter | счетчик Гейгера |
| roentgen | рентген |
| milliroentgen | миллирентген |
| pocket dosimeter | индивидуальный дозиметр |
| to be effective against heat | быть эффективным против светового излечения |
| portals of entry | точки попадания ОВ в организм |
| to don the protective mask | надевать противогаз |

*Exercise 3. Read the following text and translate it into Russian at sight:*

**Collective and individual NBCprotection**

Protection against the effects of blast, heat and nuclear radiation can be provided by the use of certain common materials. Protection against blast is accomplished by keeping pers below gnd or in safe structures and by keeping structures below gnd. The best protection against blast is the foxhole or any underground shelter with an overhead cover since the blast wave can penetrate into an open foxhole. The cover should be strong and rugged.

Protection against thermal radiation is provided by the usual Army field uniform, special creams and ointments and burn resistant clothing. Special care must be taken to shield the face and hands.

Protection against nuclear radiation is also effective against heat. Both alpha radiation and beta radiation are primarily internal or contact hazards therefore the problem of protection is one of shielding against gamma radiation and neutrons. The most readily available and one of the best shielding materials is earth, then comes concrete which is denser than earth and therefore provides better shielding. But the best shielding material usually available is steel. A tk will provide excellent protection in the majority of sits.

Wherever fallout occurs there is a possibility, that radioactive material will enter the body through the digestive tract (due to the consumption of food and water contaminated with fission products), through the lungs (by breathing air containing fallout particles) or through wounds and abrasions. Correct use of gas masks and protective clothing is therefore of vital importance.

The protection of pers against cml agts in aerosol form is effected by donning the protective mask. Ordinary clothing offers protection for the skin against contamination with cml agts. Other means of protection include immunizing shots, quarantining of contaminated buildings and areas, cleanliness of body, clothing and living quarters, proper care of cuts and wounds, and education of trps to eat and drink from approved sources only.

The protective mask when properly fitted gives protection against all known war gases as well as radn material. Besides the protective masks trps are issued permeable protective clothing which consists of impregnated combat uniform, socks and gloves and boots treated with vesicant gas resistant leather dressings; impermeable protective suit which is coated fabric cover-all type and suit impregnated underwear. In addition – to these, the soldier has the following protective items: vesicant agent protective ointment, vesicant gas resistant feather dressing and atropine injection.

In the event of biological weapons employment, additional immunizations may be given, or special medication issued. One should mask, button cuffs and collar, tuck trousers into boots or socks, turn collar up, apply insect repellent if available.

If toxic chemical agents are used, put on personal protective equipment, protect the eyes, nose, throat, lungs and body and keep on the protective mask, and move to an upwind area, a higher area or a chemical-proof shelter.

For the detection of atomic threat trps are issued radiac instruments which include dose-rate meters and dosimeters.

Radiac (abbreviation for "radioactivity detection, identification and computation) are designed to detect, aloha, beta, gamma, and neutron radn, to measure the extent and intensity of contamination, to provide means for calculating the length of time the contamination will exist in an area and to protect pers by determining the radn dose they receive. There are several types of radiac devices used in the US Armed Forces for this purpose: Geiger counters (dose-rate meters in an area), dosimeters (indicating the total dose of nuclear radn received in roentgens or milliroentgens), pocket dosimeters, etc.

For the detection of a CW atk the trps are issued detector paper in booklets of 25 sheets, detector crayon and chemical agent detector kits. The kit will determine presence of high concentration of nerve gas vapors but does not reveal presence of low concentrations which could cause casualties among unprotected pers.

*Exercise 4. Answer the following questions:*

1. What is the difference between individual and collective protection against nuclear and chemical weapons?
2. What is the best protection against blast?
3. What are the best means of protection against nuclear radiation?
4. For what purposes are protective masks used?
5. What other means of protection against cml agents do you know?
6. What instruments for the detection of atomic threat do you know?

*Exercise 5. Give corresponding English equivalents:*

Защита от воздействия ударной волны, светового излучения и проникающей радиации; обеспечивать лучшую защиту; независимо от применения ОМП; защищать точки от попадания ОВ в организм; укрываться; являться важным условием выживания; первая (медицинская) помощь; делать предупредительные прививки; выдавать специальные медикаменты; надевать противогаз; наносить репеллент; в случае применения ОВ; применять индивидуальные средства защиты; прибор химической разведки.

*Exercise 6. Decipher and translate the following abbreviations:*

Pers; gnd; tk; radn; cas; xmsn; opns; brg co; loc; incd agt; abn; fld tng; NCO; atc acft; dest; aslt; ahd; fwd spt; CNO; MLRS; nuc; CP; GI; ADA; ICBM.

*Exercise 7. Get ready and translate at normal speaking speed:*

Защита от оружия массового поражения представляет собой комплекс тактических и специальных мероприятий, осуществляемых в целях максимального ослабления поражения войск ядерным, химическим и бактериологическим (биологическим) оружием противника, сохранения боеспособности и обеспечения успешного выполнения ими боевых задач.

Защита от оружия массового поражения организуется командирами всех степеней в любых видах боевой деятельности войск и независимо от того, применяется оружие массового поражения или нет. В наибольшей степени достижению целей защиты способствует своевременное выявление и уничтожение средств массового поражения противника.

Содержание и порядок осуществления мероприятий защиты войск зависят от конкретной обстановки, возможностей противника по применению оружия массового поражения, наличия времени, сил и средств для организации защиты и других факторов.

*Exercise 8. Get prepared to make a two-way translation of the following sentences by ear:*

**A. from English into Russian:**

1. After exposure to NBC agents, both men and equipment have to be decontaminated within a short time.

2. In a NBC-contaminated environment, ensuring an adequate water supply will be a major problem.

3. Individual proficiency standards call for the marine to mask in 9 seconds or less.

4. If warned that a nuc explosion is about to occur, pick the strongest shelter available and get down, facing away from the explosion area.

5. Clothing, equipment, and weapons can be decontaminated by brushing, washing and wiping.

6. If attacked by biological agents, immunizations may prevent disease and will certainly reduce its severity.

7. The simplest and most effective method of decontaminating the body after a biological agent attack is use of soap and water.

8. Special procedures are recommended for sighting a rifle while wearing the protective task.

**B. from Russian into English:**

9.Наиболее надежную защиту личного состава от средств массового поражения обеспечивают сооружения закрытого типа.

10.Для защиты от ОМП используются убежища со специальным фильтровентиляционным оборудованием.

11.Автомобили и артиллерийские тягачи могут обеспечивать защиту от избыточного давления ударной волны.

13.Антидоты – лекарственные средства, способствующие обезвреживанию или удалению ОВ из организма.

14.Противогазы обеспечивают защиту личного состава при применении противником химического оружия.

15.Личный состав, находящийся в перекрытой щели будет лучше защищен от проникающей радиации, чем при нахождении в танке.

16.Рельеф местности и растительный покров ограничивают действие поражающих факторов ядерного взрыва.

*Exercise 9.Translate the following text in a written form from Russian into English:*

Для защиты личного состава от радиоактивных веществ и ОВ служат индивидуальные и коллективные средства защиты. Индивидуальные средства защиты личного состава предназначаются для защиты от попадания внутрь организма человека, а также на кожу и обмундирование радиоактивных и отравляющих веществ. Они позволяют войскам сохранять боеспособность при действиях в условиях зараженной местности и воздуха. К индивидуальным средствам защиты относятся противогазы и средства защиты кожи – защитный плащ, защитные чулки и перчатки.

К коллективным средствам защиты от радиоактивных и отравляющих веществ относятся различные специально оборудованные инженерные сооружения, предназначенные для групповой защиты личного состава от пора-

жающего действия ядерного и химического оружия. В качестве групповой защиты от радиоактивных и отравляющих веществ также могут служить подвижные объекты (боевые, специальные и транспортные машины) при наличии в них специального оборудования.

*Exercise 10. Act as an interpreter:*

Q: Господин бригадный генерал, какое место в планах командования НАТО занимает подготовка к боевым действиям в условиях применения ОМП?

A: It is obvious that the battle against "invisible enemies" i.e. radiation, bacteria, and gas and the soldier's ability to carry out mission his mission, even wearing cumbersome NBC protective clothing, require training.

Q: Приведите какой-нибудь конкретный пример подготовки американских военнослужащих в Европе к защите от ОМП.

A: Well, eh… For instance, all US Air Force in Europe and particularly personnel stationed in Germany, from four-star generals down to civilian employees, are required to undergo familiarization training in a chamber filled with CS gas within 30 days of their arrival, and to repeat this training once a year.

Q: Насколько интенсивно проводится подготовка к защите ОМП?

A: As a rule, these exercises last for 48 hours and include all forms of action in defense and attack, with the exception of live fire.

Q: Надо полагать, что подготовка военнослужащих для действий в условиях применения ОМП ведется и в самих США?

A: Oh, sure. In the USA the Chemical School at Fort Mc Cleland, Alabama was reopened in 1979.

Q: Чем занимается эта школа?

A: It's conducting actual NBC courses which last year were attended by 6100 trainees from all branches of the US armed forces, as well as from the National Guard and the Army Reserve.

Q: А НИОКР там ведутся?

A: Yes, the School is engaged in working out operational principles and training methods and in the cooperation with the Chemical Research Center at Aberdeen Proving Ground.

Q: Во время подготовки используются ли реальные боевые ОВ?

A: Usually irritants or real agents are used to prevent "cheating" when wearing NBC protective clothing

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