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# **АНГЛІЙСЬКА МОВА**

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Методичний посібник призначено для здобувачів вищої освіти другого (магістерського) рівня за спеціальністю 035 Філологія, спеціалізації: 035.041. Германські мови та літератури (переклад включно), перша – англійська для практичних занять з курсу «Англійська мова». Посібник буде також цікавим всім, хто вчить англійську мову для професійного спілкування.

У посібнику розкривається короткий зміст курсу, надаються основні лексичні теми з вправами, тексти для обговорення та аналізу. Увага приділяється також завданням з перекладу.

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## ПЕРЕДМОВА

Курс «Англійська мова» входить до циклу лінгвістичних дисциплін, що формують лінгвістичну базу перекладача. Даний курс має за мету надати лінгвістичні та лінгвокраїнознавчі відомості з певних лексичних тем, що є необхідними перекладачеві для професійного спілкування. У ньому надаються такі основні лексичні теми, як Military Forces, Construction, Energy Efficiency, Maritime, ICT. Крім вивчення лексики певної тематики, курс передбачає використання цієї лексики при читанні незнайомих текстів, аудіюванні, усному спілкуванні. Даний курс тематично пов'язаний з курсом «Стратегії та аналіз в усному та письмовому перекладі» та служить його базою.

Основною **метою** дисципліни «Англійська мова» є формування інтегральної, загальних та фахових компетентностей у здобувачів другого освітньо-професійного рівня вищої освіти спеціальності 035 «Філологія», спеціалізації: 035.041. Германські мови та літератури (переклад включно), перша – англійська, формування навичок, необхідних для використання англійської мови в професійному спілкуванні, подальшому навчанні в аспірантурі. Основна мета обумовлює вирішення наступних **завдань**: 1) набуття навичок практичного володіння англійською мовою в різних видах мовленнєвої діяльності в обсязі тематики, зумовленої професійними потребами; 2) користування усним монологічним та діалогічним мовленням у межах певної професійної тематики; 3) розуміння на слух текстів, що відносяться до знайомих тем; 4) пошук, аналіз і систематизація новітньої лінгвокраїнознавчої інформації, її використання для створення власних презентацій за певними темами; 5) засвоєння певного обсягу соціокультурних знань за рахунок читання відповідних текстів, застосування ілюстративного матеріалу тощо.

Посібник розроблено згідно з робочою програмою навчальної дисципліни «Англійська мова» для здобувачів другого (магістерського) освітнього ступеня спеціальності «переклад». Повний курс з цієї дисципліни розрахований на 210 академічних годин (7 кредитів ЄКТС) та триває два семестри навчання в магістратурі з перекладу (перший та другий). В основі програми лежить системний та циклічний підходи до вивчення іноземної (англійської) мови та закріплення знань на матеріалі певних лексичних тем рівня *Proficiency*.

У результаті вивчення даного курсу студент повинен **знати**: лексику певної тематики для подальшого професійного спілкування;

У результаті вивчення даного курсу студент повинен **вміти**: володіти ключовими словами та фразами, розуміти на слух тексти, вільно спілкуватися за певними лексичними темами.

# Modern Military Force Structures

## The armed forces

In most countries the armed forces are divided into three or four categories: *the Army, the Navy and the Air Force*. Some nations also organize their marines, Special Forces or strategic missile forces as independent armed services. A number of countries have no navy, for geographical reasons.

The primary mission of the *Army* is to fight and win wars by providing land dominance promptly and whenever necessary. It is the branch responsible for land-based military operations. It is the largest branch of the military.

The mission of the *Navy* is to train and equip combat ready naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas. From navy ships to aircraft, specialty vessels and weapons, navy sailors work with some of the most powerful machines ever put to sea. They specialize in crisis response, special operations, evacuations and humanitarian operations. All of these operations are carried out in order to protect and defend the nation and make the world a safer place.

The mission of the *Air Force* is to fly and win wars in air, space and cyberspace. It is responsible for conducting military operations in the air and space. It acts in defense of the nation by deploying aircraft to fight enemy aircraft, bombing targets, providing reconnaissance and transporting other armed services.

It is worthwhile to make mention of the term *joint*. In western militaries, a *joint force* is defined as a unit or formation comprising representation of combat power from two or more branches of the military.

## 1. The Army Branches

The *Branches of the Army* are classified as basic and special branches, further divided into *arms* and *services* based on the normal functions and roles performed by the soldiers assigned to them.

The **ARMS** are those branches whose officers are primarily concerned with combat and combat support.

**Combat arms** include those branches directly involved in the actual conduct of fighting: *Infantry, Armor, Field Artillery, Air Defense Artillery, Aviation, Corps of Engineers and Special Forces*.

**Combat support arms** include those branches that provide fire support and operational assistance to the combat forces to secure victory on the battlefield: *Signal Corps, Chemical Corps, Military Intelligence and Military Police Corps*.

The **SERVICES** are those branches whose officers are mainly concerned with sustaining the operating forces in the theatre of operations at all levels of war. These include: *the Adjutant General's Corps, Finance Corps, Quartermaster Corps, Army Medical Corps, Chaplains Branch, Judge Advocate General's Corps, Ordnance Corps, Signal Corps, Chemical Corps, Military Police Corps, Transportation Corps and the Veterinary Corps*.

## COMBAT ARMS

Combat arms are those units and soldiers who close with the enemy and destroy enemy forces or provide fire power and destructive capabilities on the battlefield.

**INFANTRY** closes with the enemy by means of fire and maneuver in order to destroy or capture him or repel his assault by fire, close combat and counter attack. Despite any technological advantages that the armed forces might have over an enemy, only close combat between ground forces leads to victory in battle. Infantry forces play a key role in close combat situations. The Infantry forms the nucleus of the Army's fighting strength.

**ARMOR** closes with and destroys the enemy through firepower, shock action and mobility. The heritage and spirit of the Horse Cavalry lives today in Armor. And although the horse has been replaced by 60 tons of steel driven by a 1,500 HP engine, the dash and daring of the Horse Cavalry still reside in Armor. The tank was invented out of military necessity. In the Great War the allies developed the tank to support infantry, batter down strong points of resistance and serve as a defense against the deadly machine gun. It brought mobility to the battlefield and changed the course of land warfare.

The **FIELD ARTILLERY** is the Army's Fire Support branch, the "King of Battle." It destroys, neutralizes or suppresses the enemy by cannon, rocket or missile fire and integrates all supporting fires--field artillery, tactical air, naval guns, army aviation and mortars--into combined arms operations. Field Artillery puts "Steel on Target" in the right places, at the right time and in the right proportions to assure the success of the maneuver commander's plan--a task that requires thorough understanding of maneuver and fire support doctrine, tactics and techniques.

**AIR DEFENSE ARTILLERY** protects the force and selected geopolitical assets from aerial attack, missile attack and surveillance. The artillerymen are the only servicemen with experience in firing at moving targets and protecting the ground forces from the threat of aerial bombardment.

The mission of Army **AVIATION** is to find, fix and destroy the enemy through fire and maneuver; to provide combat, combat service and combat service support in coordinated operations as an integral member of the combined arms team. On the modern battlefield, Army Aviation, unlike the other members of the combined arms team, has the organic flexibility, versatility and assets to fulfill a variety of maneuver, roles and functions.

Combat engineers of the **CORPS OF ENGINEERS** are the first in and last to leave a battle. Combat missions for engineers include: bridge building and destruction; minefield emplacement and reduction, as well as other tasks requiring specialized engineer skills and equipment. Construction engineers build and maintain roads, airfields and facilities to support combat operations. Topographic engineers provide the terrain depiction products and analyses that give maneuver commanders an edge in battle.

Due to their extensive training, **SPECIAL FORCES** soldiers are unquestioned experts in unconventional warfare. They are generally the first on the ground or already at a crisis location as trouble emerges. They are culturally savvy and have, as

a cornerstone of their training, foreign language skills that allow them to successfully operate in their areas of responsibility.

### **COMBAT SUPPORT ARMS**

Combat support arms provide fire support and operational assistance to combat elements. These units and soldiers perform critical combat functions in conjunction with combat units and soldiers to secure victory.

**SIGNAL CORPS** operations range from tactical combat signal units to detachment command in signal units which operate strategic fixed station telecommunications switching centers, satellite terminals and radio relay stations. Other duties involve the research and development of new communications electronics equipment, missile guidance systems, lasers and computer hardware. Signal officers advise commanders on the employment of cable, switching radio and satellite communications systems, as well as command signal units at company, battalion, and brigade levels.

The job of **MILITARY INTELLIGENCE (MI)** is to determine an enemy's plans, intentions and capabilities before they are set into motion, which is of critical value to military leaders. The Army must be prepared to fight even if outnumbered and win in a high-intensity conflict, or to defeat the guerilla insurgency in a low-intensity situation. In any scenario, Military Intelligence is of paramount importance. Duties include all aspects of planning, organization, training and operations of tactical intelligence, counterintelligence, signals intelligence and electronic warfare, security, interrogation, aerial reconnaissance and surveillance. By collecting, analyzing and disseminating intelligence data, Military Intelligence is engaged in fighting the "silent war" at tactical, operational and strategic levels.

**MILITARY POLICE CORPS** is trained to detect and deter the enemy in the rear area, protecting command posts, communications centers and vital resources. Today's military police officer enjoys the distinction of a unique role in the Army by having two diverse and challenging missions. First is the ever-present need to prepare for war by leading and training combat ready military police forces that can conduct combat operations against enemy forces in the rear area and expedite battlefield movement of critical resources. Second is the peacetime garrison environment of law enforcement, criminal investigation, terrorism counter-action, physical security, corrections and crime prevention. This mission focuses on the human aspects of law enforcement and reflects the military police motto--of the troops and for the troops.

**CHEMICAL CORPS** is responsible for battlefield nuclear, biological, chemical, smoke and flame operations, including combat operations, logistics, training, intelligence, personnel management, research, development and analysis.

### **THE SERVICES**

The **SERVICES** are those branches whose officers are primarily concerned with combat service support and/or administration of the Army as a whole. They provide the essential capabilities, functions, activities and tasks necessary to sustain all elements of operating forces in theatre at all levels of war.

These are: *the Adjutant General's Corps, Finance Corps, Quartermaster Corps, Medical Corps, Chaplains Branch, Judge Advocate General's Corps, Ordnance Corps, Transportation Corps and Veterinary Corps.*

The **ADJUTANT GENERAL'S CORPS** is responsible for helping servicemen with the tasks that affect their overall welfare and well-being, while assisting commanders by keeping servicemen combat ready. In many cases, the duties of an Adjutant General Officer are very similar to the function of a high level human resources executive in the civilian world. The AG Corps officer is responsible for both peacetime and wartime personnel systems. These systems cover all personnel activities from accession of new soldiers, to discharge and retirement, as well as specialized wartime personnel systems such as replacement operations, strength accounting, casualty reporting, as well as postal.

The Army's **FINANCE CORPS** is responsible for sustaining operations through purchasing and acquiring supplies and services. Officers in the Finance Corps make sure commercial vendors are paid, contractual payments are met, balancing and projecting budgets, paying servicemen for their service and other financial matters associated with keeping the Army running.

The **JUDGE ADVOCATE GENERAL'S CORPS** provides legal services for the Army and its soldiers. Judge advocates serve as prosecutors and defense attorneys for criminal trials under the code of Military Justice. In addition, they practice international, operation, labor, contract, environmental, tort, and administrative law. Judge advocates also provide routine legal services for the soldiers, retirees and their families.

The **QUARTERMASTER CORPS** is the "Sustainer of the Army" by planning and directing activities which provide soldiers with food, water, petroleum, repair parts, weapon systems and a multitude of field services. The three occupational specialties of the Quartermaster Corps are Petroleum Management, Materiel/Service Management and Subsistence Management.

The **ORDNANCE CORPS** is responsible for keeping the Army's combat forces moving and shooting by developing, producing, acquiring and supporting the Army's weapons systems, ammunition, missiles, wheeled and tracked vehicles. It manages and maintains a diverse range of Army materiel from conventional and special ammunition to major weapon and missile systems.

The **MEDICAL CORPS** treats and looks after the sick, injured and wounded soldiers, offering the kind of professional challenges that prevents a doctor's career from becoming a predictable daily routine.

The **CHAPLAIN CORPS** provides religious support to servicemen and their families in war and peace. They contribute to the operational effectiveness of the armed forces by supporting the moral and spiritual well-being of military personnel and their families in all aspects of their lives, during conflict and peacetime. Chaplains minister to the needs of all servicemen and their families, whether they attend church or are of the same religion, or have any spiritual beliefs at all.

The **TRANSPORTATION CORPS** officers are experts in the systems, vehicles and procedures related to moving troops and supplies in the Army. They are responsible for commanding and controlling transportation.

## ***2. Military formations, units and ranks***

Military organization is the structuring of the armed forces of a state so as to offer military capability required by the national defense policy. Military organization is hierarchical.

### **Armed services**

In most countries the armed forces are divided into three or four armed services (military branches): **army, navy, and air force**. It is worthwhile to make mention of the term joint. In western militaries, a joint force is defined as a unit or formation comprising representation of combat power from two or more branches of the military.

### **Commands, formations and units**

It is common, at least in the European and North American militaries, to refer to the building blocks of a military as *commands, formations and units*.

In a military context, a **command** is a collection of units and formations under the control of a single officer. In general it is an administrative and executive strategic headquarters which is responsible to the national government or the national military headquarters. It is not uncommon for a nation's services to each consist of their own command (such as Land Component, Air Component, Naval Component), but this does not preclude the existence of commands which are not service-based.

**Formations** are those military organizations which are formed from different specialty Arms and Services troop units to create a balanced, combined combat force. Example of formations include: divisions, brigades, battalions, wings, etc. Formation may also refer to tactical formation, the physical arrangement or disposition of troops and weapons.

A typical **unit** is a homogeneous military organization (combat, combat-support or non-combat in capability) that includes service personnel predominantly from a single arm of service, or a branch of service and its administrative and command functions are self-contained. Any unit subordinate to another unit is considered its sub-unit or minor unit. It is not uncommon for unit and formation to be used synonymously, although formation is rarely used for small units like platoon or company. Other examples of units are: divisions, brigades, battalions, etc.

### **Military ranks**

Military ranks are a system of hierarchical relationships in armed forces or other institutions organized along military lines. Uniforms usually denote the bearer's rank by particular insignia affixed to the uniforms. Ranking systems have been known for most of military history to be advantageous for military operations, in particular with regards to logistics, command and coordination; as time continued and military operations became larger and more complex, military ranks increased and ranking systems themselves became more complex.

The military is comprised of three categories of rank: *Commissioned Officers, Enlisted Personnel and Warrant Officers*.

**COMMISSIONED OFFICERS** generally have a minimum of a bachelor's degree. Additionally advanced degrees are encouraged to continue to be promoted.

Commissioned ranks are the highest in the military. These officers hold presidential commissions.

They do not specialize as much as enlisted personnel and Warrant Officers.

As an officer moves up in rank, he or she gains more experience in different areas with the ultimate goal of taking command over more and more troops.

### **Commissioned Officers ranks**

The rank system forms the backbone of the army's structure and it defines a soldier's or officer's role and degree of responsibility. Soldiers and officers have different rank systems. Broadly speaking, officers have more leadership duties. However, many officers start off as soldiers before gaining their commission.

**Officer Cadet** is the rank held during initial officer training at the military academy.

**Second Lieutenant** is the first rank held on commissioning. It is normally held for up to two years, during which time they complete special to arms training relevant to their Corps. Afterwards they are responsible for leading up to 30 soldiers in a platoon or troop, both in training and on operations.

**Lieutenant** is a rank typically held for up to three years. They normally command a platoon or troop of around 30 soldiers, but with experience come increased responsibilities. They also have the opportunity to gain specialized skills outside their unit.

**Captains** are normally made second-in-command of a sub-unit of up to 120 soldiers. They are key players in the planning and decision-making process, with tactical responsibility for operations on the ground, as well as equipment maintenance, logistic support and manpower.

Promotion to **Major** follows between 8-10 years of service. Typically a Major will be given command of a sub-unit of up to 120 officers and soldiers, with responsibility for their training, welfare and administration both in camp and on operation, as well as the management of their equipment.

**Lieutenant Colonels** typically command units of up to 650 soldiers, containing four or five sub-units. They are responsible for the overall operational effectiveness of their unit in terms of military capability, welfare and general discipline. This is typically a two-year appointment.

**Colonels** are not usually field commanders - typically they serve as staff officers between field commands at battalion/brigade level. It is the lowest of the staff ranks and they are the principal operational advisors to senior officers.

**Brigadiers** can command a brigade or be a director of operational capability groups such as a director of staff.

**Major Generals** command formations of division size and hold senior staff appointments in the Ministry of Defense and other headquarters.

**Lieutenant Generals** command formations of Corps size and hold very senior staff appointments in the Ministry of Defense and other headquarters.

**Generals** hold the most senior appointments - such as the *Chief of Defense Staff*, *Vice Chief of Defense Staff*, *Chief of the General Staff*, *Deputy Supreme Allied Commander Europe* and *Commander in Chief Land Forces*.

**ENLISTED PERSONNEL** are personnel below commissioned rank and make up the vast majority of military personnel. They are known by different names in different countries, such as other ranks (ORs) in the United Kingdom.

Enlisted ranks are for those who enter the military without going through any formal officer training programs.

The education level may vary from right out of high school to having a master's degree.

Enlisted personnel progress through the ranks, their leadership responsibilities increase significantly. This responsibility is recognized formally by the use of the term Non Commissioned Officer (NCO).

### **Enlisted Personnel ranks**

On completion of Phase 1 Training, all new soldiers start as *Privates* although the title may be *Trooper, Gunner, Signaler, Sapper, Rifleman*, depending on Corps/Regiment.

Promotion to *Lance Corporal* may follow after Phase 2 Training or after about 3 years as a private. Lance Corporals are required to supervise a small team of up to four soldiers. They also have opportunities to specialize and undertake specialist military training.

After 6-8 years, and depending on ability to lead, promotion to *Corporal* typically follows. In this rank additional trade and instructor qualifications can be gained. Corporals are given command of more soldiers and equipment such as tanks and guns.

*Sergeant* is a senior role of responsibility, promotion to which typically takes place after 12 years depending on ability. Sergeants typically are second in command of a troop or platoon of up to 35 soldiers, with the important responsibility for advising and assisting junior officers.

After a few years as a Sergeant promotion to either *Staff or Color Sergeant* may follow. This is a senior role combining man and resource management of around 120 soldiers, or even command of a troop or platoon.

### **Non-commissioned officers**

Non-commissioned officers (NCOs) are enlisted personnel, under the command of an officer, granted delegated authority to supervise other military members or assigned significant administrative responsibilities.

A non-commissioned officer (sometimes spelled noncommissioned officer, abbreviated to NCO in British English or non-com in American English, called a sub-officer in some countries) is a military officer who does not have a high rank and who has not been given a commission. Non-commissioned officers usually obtain their position of authority by promotion from the lower ranks.

The NCO corps usually includes all grades of sergeant and corporal; in some countries, warrant officers also carry out the duties of NCOs.

NCO training and education typically includes leadership and management, as well as service-specific and combat training. Senior NCOs are regarded to be the primary link between enlisted personnel and the commissioned officers in a military

organization. Their advice and guidance is particularly important for junior officers, who begin their career. Most senior NCOs have more experience, possibly including combat, than junior officers, thus in many armies junior officers are paired with senior NCO advisers due to their little operational experience.

**WARRANT OFFICERS** are highly specialized experts in specific career fields. They are appointed by warrant. Their purpose is to provide knowledge and instruction in their primary specialty (e.g., a geographic technician).

Warrant Officers do not focus on increased levels of command and staff duty positions like Commissioned Officers who are generalists.

### **Warrant Officers Ranks**

Warrant Officer Class 2 (*Company/Squadron Sergeant Major*) is a senior management role focusing on the training, welfare and discipline of a company, squadron or battery of up to 120 soldiers. WO2s act as senior adviser to the Major in command of the sub-unit and may also be selected for a commission as an Officer.

Warrant Officer Class 1 (*Regimental Sergeant Major*) is the most senior soldier rank in the army, typically reached after 18 years of outstanding service. WO1s are the senior advisors of their unit's Commanding Officer, with leadership, discipline and welfare responsibilities of up to 650 officers and soldiers and equipment.

### **Officer Cadets**

The British Army refers to its trainee officers as officer cadets, who rank as private soldiers at the start of their training, with no authority over other ranks (except when appointed to carry out a role as part of training). Officer Cadets are addressed to as "Mister" or "Miss" until the completion of the early stages of their training, thereafter other ranks (non-officers) will address them as "Sir" or "Ma'am".

In the US and several other western forces, officers in training are referred to as student officers and carry the rank of Cadet (the Army and Air Force). These officers may be serving at a military academy, or as members of a military training unit attached to a civilian college or university, such as an ROTC unit (common in the United States). This is due to a requirement that commissioned officers have at least a four-year degree.

In the US an alternative to spending four years as a Cadet is for college graduates with a four-year degree to attend officer candidate school, an intensive twelve-week training course designed to convert college graduates into military officers. Each service has at least one, and usually several, officer candidate school facilities. Students at these programs are called Officer Candidates.

### **Appointment**

Appointment refers to the instrument by virtue of which the person exercises his or her authority. Officers are appointed by a Royal Commission in most monarchies or a Presidential Commission in many other countries. In the Commonwealth, warrant officers hold a royal or presidential warrant. In the United States, officers are appointed by the president, with the advice and consent of the United States Senate.

NCOs are appointed by an instrument of appointment, a written document, often a certificate, usually from the service head. Entry into service is often referred to as enlistment throughout the English-speaking world, even in countries where soldiers do not technically enlist.

Sometimes personnel serve in an appointment which is higher than their actual rank.

### ***3. Military weapons***

A **weapon, arm** or **armament** is any device used with the intention to inflict losses or cause damages on structures or systems. Weapons are used to gain a strategic, material or mental advantage over an adversary.

#### **Infantry Firearms**

The word *firearms* usually is used in a sense restricted to small arms (weapons that can be carried by a single person), whereas the word *artillery* covers larger gunpowder-fired weapons.

A firearm is a portable gun – a barreled weapon that launches one or more projectiles, often driven by the action of an explosive force. Most firearms have similar parts: ***bore, breech, cylinder, grip, hammer, magazine, muzzle, trigger, trigger guard.***

Types of firearms: **handguns (single-shot pistols, revolvers and semi-automatic pistols), shotguns, rifles, automatic firearm (machine guns, sub-machine guns and assault rifles).**

#### **Artillery equipment**

*Artillery* is a class of large military weapons built to fire munitions far beyond the range and power of infantry's small arms. The word artillery usually refers to **shell-firing guns, grenade launchers, howitzers, mortars, rockets and guided missiles.**

#### **Anti-aircraft and anti-tank missile system**

Anti-aircraft warfare refers to all measures designed to annul or reduce the effectiveness of hostile air action. They include ground- and air-based weapon systems, such as **self-propelled howitzers, anti-aircraft guns and surface-to-air missiles.**

### ***4. Military Vehicles***

Vehicles have always played a significant role in the military. They carry soldiers, transport equipment and weapons, provide mobility for troops and perform a series of other important operations.

#### **Unarmored fighting vehicles (UFVs)**

Unarmored fighting vehicles are used in combat-support roles. Modern armies rely on unarmored fighting vehicles for an almost unlimited variety of purposes. These vehicles include: **light and heavy trucks, buses, ambulances, tractors, fire trucks, snowplows, amphibious vehicles and construction equipment.**

### **Armored fighting vehicles (AFVs)**

An armored fighting vehicle (tank) is a combat vehicle, protected by strong armor and generally armed with weapons, which combines operational mobility, tactical offensive and defensive capabilities. AFVs can be wheeled or tracked.

### **Armored personnel carriers (APCs)**

Troops on foot were vulnerable to enemy fire. The armored personnel carrier was designed to transport infantry troops to the frontline.

### **Military Aircraft**

Military aircraft can be either combat or non-combat.

Combat aircraft are designed to destroy enemy equipment using their own aircraft ordnance. These include: **fighter aircraft, bomber aircraft, attack aircraft, electronic warfare aircraft, maritime patrol aircraft, multirole combat aircraft and attack helicopters.**

Non-combat aircraft are not designed for combat as their primary function.

Non-combat roles of military aircraft include search and rescue, reconnaissance, observation/surveillance, airborne early warning and control, transport, training and aerial refueling.

### **Military history of the United States**

The history of the U.S. military dates to 1775, even before the Declaration of Independence marked the establishment of the United States. The Continental Army, Continental Navy, and Continental Marines were created in close succession by the Second Continental Congress in order to defend the new nation against the British Empire in the American Revolutionary War. These forces demobilized in 1784 after the Treaty of Paris ended the War for Independence. The Congress of the Confederation created the United States Army, and the US Congress created the US Navy, and the US Marine Corps. All three services trace their origins to the founding of the Continental Army the Continental Navy and the Continental Marines respectively. The 1787 adoption of the Constitution gave the Congress the power to “raise and support armies”, “provide and maintain a navy” and to “make rules for the government and regulation of the land and naval forces” as well as the power to declare war. The United States President is the U.S. military's commander-in-chief. Rising tensions at various times with Britain and France and the ensuing Quasi-War and War of 1812 quickened the development of the U.S. Navy and the United States Marine Corps The U.S. Coast Guard dates its origin to the founding of the Revenue Cutter Service that service merged with the US Life-Saving Service in 1915 to establish the Coast Guard. The US Air Force was established as an independent service.

### **The UK Armed Forces**

The British Armed Forces is a professional force with 156,940 Regular and 30,000 Volunteer Reserve personnel. This gives a total strength of 186,940 Service Personnel. The army has a single command structure based at Andover and known as “Army Headquarters”. Deployable combat formations consist of two divisions (1st

Armoured and 3rd Mechanized) and eight brigades. Within the United Kingdom operational and non-deployable units are administered by three regionally defined “regenerative” divisions (2nd, 4th, and 5th) and London District. The Army has 50 battalions (36 regular and 14 territorial) of regular and territorial infantry organized into 17 regiments. The majority of infantry regiments contain multiple regular and territorial battalions. Modern infantry have diverse capabilities and this is reflected in the varied roles assigned to them. There are four operational roles that infantry battalions can fulfill: air assault, armoured infantry, mechanized infantry, and light role infantry. Regiments and battalions e.g.: the Parachute Regiment exist within every corps of the Army functioning as administrative or tactical formations. Armoured regiments are equivalent to an infantry battalion. There are 11 armoured regiments within the regular army of which six are designated as “Armoured” and five as “Formation Reconnaissance”. With the exception of the Household Cavalry armoured regiments and their Territorial counterparts are grouped under the Royal Armoured Corps. Arms and support units are also formed into similar collectives organized around specific purposes such as the Corps of Royal Engineers, Army Air Corps and Royal Army Medical Corps. Britain has the fifth or sixth-largest defence budget in the world with the country spending more than countries like Germany or Japan but more or less comparable to that of France or Saudi Arabia. In September 2011 according to the Royal United Services Institute current “planned levels” of defence spending should be enough for the United Kingdom to maintain its position as one of the world's top military powers as well as being one of NATO Europe's top military powers. Its edge – not least its qualitative edge – in relation to rising Asian powers seems set to erode but will remain significant well into the 2020’s and possibly beyond.

### **Command organization of the UK Army**

As Sovereign and head of state Queen Elizabeth II is Head of the Armed Forces and their Commander-in-Chief. Long-standing constitutional convention however has vested de facto executive authority by the exercise of Royal Prerogative powers in the Prime Minister and the Secretary of State for Defence and the Prime Minister (acting with the support of the Cabinet) makes the key decisions on the use of the armed forces. The Queen however remains the ultimate authority of the military, with officers and personnel swearing allegiance to the monarch. The department is controlled by the Secretary of State for Defence and contains three deputy appointments: Minister of State for the Armed Forces, Minister for Defence Procurement and Minister for Veterans' Affairs. Responsibility for the management of the forces is delegated to a number of committees: the Defence Council, Chiefs of Staff Committee, Defence Management Board and three single-service boards. The Defence Council composed of senior representatives of the services and the Ministry of Defence provides the “formal legal basis for the conduct of defence”. The three constituent single-service committees (Admiralty Board, Army Board and Air Force Board) are chaired by the Secretary of State for Defence. The Ministry of Defence is the Government department and highest level of military headquarters charged with formulating and executing defence policy for the Armed Forces. The Chief of the Defence Staff is the professional head of the Armed Forces and is an appointment that

can be held by an Admiral, Air Chief Marshal or General. Before the practice was discontinued in the 1990s those who were appointed to the position of CDS had been elevated to the most senior rank in their respective service (a 5-star rank). The CDS along with the Permanent Under Secretary are the principal advisers to the departmental minister. The three services have their own respective professional chiefs: the First Sea Lord, the Chief of the General Staff and the Chief of the Air Staff.

### **Royal Navy**

The Royal Navy is a technologically sophisticated naval force and as of April 2015 consists of 77 commissioned ships. Command of deployable assets is exercised by the Fleet Commander of the Naval Service. Personnel matters are the responsibility of the Second Sea Lord/Commander-in-Chief Naval Home Command an appointment usually held by a vice-admiral. The Surface Fleet consists of amphibious warfare ships, destroyers, frigates, patrol vessels, mine-countermeasure vessels and other miscellaneous vessels. The Surface Fleet has been structured around a single fleet. The recently built Type 45 destroyers are technologically advanced air defence destroyers. The Royal Navy is building two Queen Elizabeth class aircraft carriers embarking an air-group including the advanced fifth-generation multi-role fighter, the F-35B. A submarine service has existed within the Royal Navy for more than 100 years. The Submarine Service's four Vanguard class nuclear-powered submarines carry ballistic missiles forming the United Kingdom's nuclear deterrent. The service possessed a combined fleet of diesel-electric and nuclear-powered submarines until the early 1990s. Seven Astute class nuclear-powered attack submarines have been ordered with two completed and four under construction. The Astute class is the most advanced and largest fleet submarines ever built for the Royal Navy.

### **The Royal Air Force**

The Royal Air Force has a large operational fleet that fulfills various roles consisting of both fixed-wing and rotary aircraft. Frontline aircraft are controlled by Air Command which is organized into three groups defined by function: 1 Group (Air Combat), 2 Group (Air Support) and 22 Group (training aircraft and ground facilities). In addition Expeditionary Air Group directs formations in the Middle East. Deployable formations consist of Expeditionary Air Wings and squadrons – the basic unit of the Air Force. Independent flights are deployed to facilities in Afghanistan, the Falkland Islands, Iraq and the United States. The Royal Air Force operates multi-role and single-role fighters, reconnaissance and patrol aircraft, tankers, transports, helicopters, unmanned aerial vehicles and various types of training aircraft.

### **The North Atlantic Treaty Organization**

The North Atlantic Treaty Organization, also called the North Atlantic Alliance, is an intergovernmental military alliance based on the North Atlantic Treaty which was signed on 4 April 1949. The organization constitutes a system of collective defense whereby its member states agree to mutual defense in response to an attack by any external party. NATO's headquarters are located in Haren, Brussels, Belgium, where the Supreme Allied Commander also resides. Belgium is one of the 28

member states across North America and Europe, the newest of which, Albania and Croatia, joined in April 2009. An additional 22 countries participate in NATO's Partnership for Peace program, with 15 other countries involved in institutionalized dialogue programs. The combined military spending of all NATO members constitutes over 70 percent of the global total. NATO has twenty-eight members, mainly in Europe and North America. Some of these countries also have territory on multiple continents, which can be covered only as far south as the Tropic of Cancer in the Atlantic Ocean, which defines NATO's "area of responsibility" under Article 6 of the North Atlantic Treaty. During the original treaty negotiations, the United States insisted that colonies like the Belgian Congo be excluded from the treaty.

**MILITARY PERSONNEL**  
**Military ranks of Army, Air force, Navy, Marines**

Army Сухопутні війська	Air Force ПВС	Navy ВМС	Marines Морська пехота
General of the Army Генерал армії	General of the Air Force Генерал ПВС	Fleet Admiral адмірал флоту	—
General Генерал	General Генерал	Admiral Адмірал	General Генерал
Lieutenant General генерал-лейтенант	Lieutenant General генерал-лейтенант	Vice Admiral віце-адмірал	Lieutenant General генерал-лейтенант
Major General генерал-майор	Major General генерал-майор	Rear Admiral контр-адмірал	Major General генерал-майор
Brigadier General бригадний генерал	Brigadier General бригадний генерал	Commodore Коммодор	Brigadier General бригадний генерал
Colonel Полковник	Colonel Полковник	Captain Капітан	Colonel Полковник
Lieutenant Colonel підполковник	Lieutenant Colonel підполковник	Commander коммандер	Lieutenant Colonel підполковник
Major Майор	Major Майор	Lieutenant Commander лейтенант-коммандер	Major Майор

<p>Captain Капітан</p> <p>First Lieutenant перший лейтенант</p> <p>Second Lieutenant другий лейтенант</p> <p>Chief Warrant Officer-4 старший уорент-офіцер 4 класу</p>	<p>Captain капітан</p> <p>First Lieutenant перший лейтенант</p> <p>Second Lieutenant другий лейтенант</p> <p>Chief Warrant Officer-4 старший уорент-офіцер 4 класу</p>	<p>Lieutenant лейтенант флоту</p> <p>Lieutenant, Junior Grade молодший-лейтенант-флоту</p> <p>Ensign енсін</p> <p>Chief Warrant Officer-4 старший уорент-офіцер 4 класу</p>	<p>Captain Капітан</p> <p>First Lieutenant перший лейтенант</p> <p>Second Lieutenant другий лейтенант</p> <p>Chief Warrant Officer-4 старший уорент-офіцер 4 класу</p>
<p>Chief Warrant Officer-3 старший уорент-офіцер 3 класу</p> <p>Chief Warrant Officer-2 старший уорент-офіцер 2 класу</p>	<p>Chief Warrant Officer-3 старший уорент-офіцер 3 класу</p> <p>Chief Warrant Officer-2 старший уорент-офіцер 2 класу</p>	<p>Chief Warrant Officer-3 старший уорент-офіцер 3 класу</p> <p>Chief Warrant Officer-2 старший уорент-офіцер 2 класу</p>	<p>Chief Warrant Officer-3 старший уорент-офіцер 3 класу</p> <p>Chief Warrant Officer-2 старший уорент-офіцер 2 класу</p>
<p>Warrant Officer-1 уорент-офіцер 1 класу</p> <p>Sergeant Major of the Army сержант-майор СВ</p>	<p>Warrant Officer-1 уорент-офіцер 1 класу</p> <p>Chief Master Sergeant of the Air Force головний майстер-сержант ПВС</p>	<p>Warrant Officer-1 уорент-офіцер 1 класу</p> <p>Master Chief Petty Officer of the Navy майстер-головний-старшина ВМС</p>	<p>Warrant Officer-1 уорент-офіцер 1 класу</p> <p>Sergeant Major of the Marine Corps сержант-майор МП</p>
<p>Staff Sergeant Major/Command Sergeant Major штаб-сержант-майор/комманд-сержант-майор</p>	<p>Chief Master Sergeant головний майстер-сержант (старшина)</p>	<p>Master Chief Petty Officer майстер-головний-старшина</p>	<p>Sergeant Major/Master Gunnery Sergeant сержант-майор/майстер-комендор-сержант</p>

First Sergeant/Master Sergeant перший сержант/майстер-сержант	Senior Master Sergeant старший майстер-сержант (старшина)	Senior Chief Petty Officer перший головний старшина	First Sergeant/Master Sergeant перший сержант/майстер-сержант
Platoon Sergeant/Sergeant/ First Class звідний сержант/сержант 1 класу	Master Sergeant майстер-сержант (старшина)	Chief Petty Officer головний старшина	Gunnery Sergeant комендор-сержант
Staff Sergeant штаб-сержант	Technical Sergeant технік-сержант	Petty Officer, First Class старшина 1 класу	Staff Sergeant штаб-сержант
Sergeant Сержант	Staff Sergeant штаб-сержант	Petty Officer, Second Class старшина 2 класу	Sergeant Сержант
Corporal Капрал	Sergeant Сержант	Petty Officer, Third Class Старшина 3-Класу	Corporal Капрал
Private, First Class рядовий 1 класу	Airman, First Class рядовий авіації 1 класу	Seaman Матрос	Lance Corporal молодший кап-рал
Private (E-2) рядовий	Airman рядовий авіації	Seaman Apprentice молодший матрос	Private, First Class рядовий 1 класу
Private (E-1) рядовий-рекрут	Airman, Basic рядовий-рекрут авіації	Seaman Recruit матрос-рекрут	Private рядовий-рекрут

## **Commands:**

(Left) shoulder, ARMS!  
ABOUT FACE!  
AS YOU WERE!  
AT EASE!  
AT MY COMMAND!  
ATTENTION!  
By twos, NUMBER!  
COUNT OF!  
DISMISSED!  
Double, time, MARCH  
DRESS, ready FRONT!  
EYES, RIGHT! (LEFT,  
FRONT)!  
EYES, RIGHT, (LEFT)  
FALL IN!  
FALL OUT!  
Fix (unfix), BAYONETS!  
Forward, MARCH!  
HALT!  
Mark time, MARCH!  
Order, ARMS!  
Present, ARMS!  
Quick time, MARCH!  
REST!  
RIGHT (LEFT), FACE!  
Right shoulder, ARMS!  
Sling, ARMS!  
Yes, sir (ma'am)  
No, sir ( ma'am)  
A message arrived

**Find the Ukrainian equivalents of these commands**

### **NATO code words for English letters**

A Alpha N November  
B Bravo O Oscar  
C Charlie P Papa  
D Delta Q Quebec  
E Echo R Romeo  
F Foxtrot S Sierra  
G Golf T Tango  
H Hotel U Uniform  
I India V Victor  
J Juliet W Whiskey  
K Kilo X X-ray  
L Lima Y Yankee  
M Mike Z Zulu

**Ukrainian Armed Forces ranks and their NATO equivalents**  
**THE ARMY and THE AIR FORCE**

**Рядовий, сержантський, старшинський склад**

солдат – private E1  
старший солдат – private E2  
молодший сержант – corporal  
сержант – sergeant  
старший сержант – sergeant first class  
старшина – first or master sergeant

**Офіцерський склад**

молодший лейтенант – junior lieutenant  
лейтенант – lieutenant  
старший лейтенант – senior lieutenant  
капітан – captain  
майор – major  
підполковник – lieutenant colonel  
полковник – colonel  
генерал-майор – major general  
генерал-лейтенант – lieutenant general  
генерал-полковник – colonel general  
генерал армії – general of the army

**THE NAVY**

**Старшини та матроси**

матрос – seaman  
старший матрос – senior seaman  
старшина II статті – petty officer 2nd stage  
старшина I статті – petty officer 1st stage  
головний старшина – chief petty officer  
головний корабельний старшина – senior chief petty officer of the ship  
мічман – Master Chief Petty Officer  
старший мічман – Master Chief Petty Officer of the Navy

**Адмірالی та офіцери**

молодший лейтенант – junior lieutenant  
лейтенант – lieutenant  
старший лейтенант – senior lieutenant  
капітан-лейтенант – captain lieutenant  
капітан III рангу – captain 3rd rank  
капітан II рангу – captain 2nd rank  
капітан I рангу – captain 1st rank  
контр-адмірал – rear admiral  
віце-адмірал – vice admiral  
адмірал – admiral

## EXERCISES

*Ex. 1. Complete the following sentences with correct words from the list.*

• embargo • volley • capitulate • belligerents • bivouac • salvo • conscription • interned

1. Nations carrying on warfare are called ... .
2. A compulsory enrolment as soldiers is a ... .
3. An ... is an order prohibiting ships to leave the ports.
4. When citizens are kept in confinement, they are ... .
5. A ... is a shower of bullets.
6. The firing of many guns at the same time is a ... .
7. When troops surrender to an enemy on agreed terms, they ... .
8. A ... is an encampment in the open air.

*Ex. 2. Make 14 two-word expressions connected with military matters by combining words from the two boxes: A and B. Then match each expression with the appropriate phrase. Use each word once. The first one has been done for you as an example.*

### Box A.

compassionate • voice • exclusion • supply • harrassing • home • shock  
manoeuvre • field • pincer • distress • observation • static • flight

### Box B.

zone • gun • defence • signal • leave • post • action • dump  
path • procedure • line • fire • warfare • movement

1. Defence of a State's own territory in the event of war. – *home defence*
2. Area or region, which the armed forces or shipping of another State are not allowed to enter. –
3. Holiday granted to a service man who has problems at home. –
4. Standard words and expressions which are used when talking on the radio. –
5. Sign or message signifying that a person, ship or aircraft is in danger. –
6. Covert position from which an area of ground may be watched. –
7. Temporary store of ammunition, food, fuel, etc., in the field. –
8. Method used to open a parachute as the parachutist jumps out the aircraft. –
9. Tactical manoeuvre, in which two groupings attack an enemy force at the same time, but from different directions. –
10. Random bombardment of a likely enemy location, in order to disrupt his activities. –
11. Course taken by an aircraft or missile. –
12. Military doctrine which recommends the use of mobility and constant aggression. –
13. Artillery piece designed to be moved easily over all types of ground. –
14. Sudden or aggressive attack or counterattack, especially by tanks. –

**Ex. 3. Some nouns are formed by joining two words together to form a single word. Fill the gaps in the sentences below by combining a word from column A with a word from column B. The first one has been done for you as an example.**

<b>Column A</b>	<b>Column B</b>
cease	bridge
search	through
<i>life</i>	room
foot	<i>boat</i>
counter	horn
way	measure
road	head
guard	light
mine	point
fog	fire
war	field
break	block

1. He was drowned when the *lifeboat* capsized.
2. There has been an enemy \_\_\_\_\_ to the north of Brno.
3. A series of explosions informed us that a patrol had walked into the \_\_\_\_\_ .
4. The \_\_\_\_\_ will come into effect at 1100 hours tomorrow.
5. The missile had been fitted with a nuclear \_\_\_\_\_.
6. Our next \_\_\_\_\_ is the track junction at grid 491370.
7. The tank used its \_\_\_\_\_ to illuminate the target.
8. The ammunition will be kept in the \_\_\_\_\_ for the night.
9. We found a small \_\_\_\_\_ three hundred metres downstream.
10. We couldn't see the ship, but we heard its \_\_\_\_\_.
11. We have set up a \_\_\_\_\_ on every route into the town.
12. As a \_\_\_\_\_ against ambush, all convoys will be escorted by troops.

**Ex. 4. Fill the gaps in the sentences below by linking an adjective from the column on the left with a noun from the column on the right. The first one has been done for you as an example.**

<b>Adjectives</b>	<b>Nouns</b>
chemical	information
high-velocity	bomber
<i>first</i>	discharge
air	damage
collateral	agent
negligent	image
interior	iron
multinational	bullet

classified	photograph
corrugated	lines
thermal	force
stealth	<i>aid</i>

1. All the men are being given training in *first aid*.
2. These shells contain some sort of \_\_\_\_\_ .
3. A \_\_\_\_\_ is being deployed to the area.
4. The airstrike caused some \_\_\_\_\_ to the adjoining residential area.
5. This night-viewing device produces a high quality \_\_\_\_\_.
6. He was court-martialled for passing \_\_\_\_\_ to the media.
7. A \_\_\_\_\_ has been shot down over enemy territory.
8. He was killed when one of his comrades had a \_\_\_\_\_ inside the APC.
9. He was hit in the chest by a \_\_\_\_\_ .
10. We can use our \_\_\_\_\_ to redeploy the division.
11. You must revet the trenches with \_\_\_\_\_ .
12. The Ops Officer has asked for an \_\_\_\_\_ of the area.

**Ex. 5. Make 10 three-word expressions connected with military matters by combining words from the three lists: A, B and C. Then match each expression with the appropriate phrase. Use each word once. The first one has been done for you as an example.**

<b>A</b>	<b>B</b>	<b>C</b>
foreign	protective	missile
immediate	aircraft	position
<i>forward</i>	target	device
general	piloted	disorder
final	object	drill
post-traumatic	action	authorized
remotely	<i>air</i>	force
laser	ballistic	damage
improvised	deployment	designator
primary	task	vehicle
joint	stress	fire
inter-continental	explosive	<i>controller</i>

1. Air-force officer or NCO who is attached to ground troops to direct close air support. – *forward air controller*
2. Standard procedure to be carried out in the event of something going wrong. –
3. Missile which flies from one continent to another and then ends its flight by simply falling onto the target. –
4. Home-made bomb. –
5. Pre-selected position that a unit or sub-unit will occupy in the event of war. –

6. Mental collapse as a result of a horrific experience. –
7. Small unmanned radio-controlled aircraft designed to carry surveillance equipment. –
8. Pre-determined artillery target, registered on or just in front of your own position.  
–
9. Device which projects a laser beam onto a target in order to illuminate it for a laser-guided bomb or missile. –
10. Number of aircraft allocated to a unit for the performance of its operational role.  
–
11. Large combined arms grouping involving different branches of the armed forces, which is formed for a specific operation or campaign. –
12. Damage to an aircraft, caused by a loose object being sucked into its air intakes.  
–

**Ex. 6. All the nouns in the box relate to military matters. Use them to complete the sentences below. The first one has been done for you as an example.**

- fireplan • northing • password • resistance • frontage
- flagship • intsum • demolition • pillbox • O Group
- wreckage • trace • riot • interdiction • fallout

1. The sentry shot him because he didn't give the correct *password*.
2. This squadron's primary role is the \_\_\_\_\_ of the enemy's supply routes.
3. The approach to the bridge is guarded by a \_\_\_\_\_.
4. Your limit of exploitation is the five – seven \_\_\_\_\_.
5. The CO's \_\_\_\_\_ is at 1400 hours.
6. The whole area has been contaminated by \_\_\_\_\_.
7. The battle group's position has a \_\_\_\_\_ of five kilometres.
8. All our routes and report lines are marked on the \_\_\_\_\_.
9. Tell the battery commander to send us a copy of the \_\_\_\_\_.
10. We found \_\_\_\_\_ of the aircraft scattered across the hillside.
11. The Admiral's \_\_\_\_\_ was hit by an Exocet missile.
12. The enemy losses were included in the last \_\_\_\_\_.
13. The bridge has been prepared for \_\_\_\_\_.
14. It started as a peaceful demonstration, but it quickly turned into a \_\_\_\_\_.
15. The forward units are encountering stiff \_\_\_\_\_ from the enemy rearguard.

**Ex. 7. All the adjectives in the box relate to military matters. Use them to complete the sentences below. Each adjective should be used once only. The first one has been done for you as an example.**

- non-persistent • wire-guided • diversionary • untenable • self-propelled • incendiary • secure • subordinate • hostile • optical • civilian • unserviceable • preparatory • multirole • combat-effective

1. All units are equipped with *secure* radios.
2. Our battalion carried out a \_\_\_\_\_ attack on the left.
3. The enemy shelled the position with a \_\_\_\_\_ blood agent.
4. Any movement in that area should be considered \_\_\_\_\_.
5. The tank's \_\_\_\_\_ instruments were damaged by shrapnel.
6. There is a \_\_\_\_\_ gun in the farmyard.
7. The village was destroyed by \_\_\_\_\_ bombs.
8. Less than sixty percent of our units are still \_\_\_\_\_.
9. All \_\_\_\_\_ commanders are to attend the briefing.
10. Our position became \_\_\_\_\_ when the enemy captured the hill.
11. This aircraft is a \_\_\_\_\_ fighter.
12. The attack was preceded by a \_\_\_\_\_ bombardment.
13. The radio was \_\_\_\_\_ after he dropped it in the river.
14. The enemy have been bombing \_\_\_\_\_ targets.
15. The tank was destroyed by a \_\_\_\_\_ missile.

**Ex. 8.** *All the verbs in the box relate to military matters. Use them to complete the sentences below. You may have to change the forms of the verbs to fit the grammar of the sentences.*

- arm • relieve • interrogate • intercept • suppress
- replenish • commandeer • jam • bridge • insert
- deploy • shell • strafe • camouflage • mask

1. The prisoners were *interrogated* by an officer from the Intelligence Corps.
2. We have \_\_\_\_\_ an enemy radio transmission.
3. Enemy fighters \_\_\_\_\_ the refugee column, in order to clear the road.
4. The patrol will \_\_\_\_\_ by helicopter at 1930 hours.
5. We managed to \_\_\_\_\_ a civilian bus.
6. His weapon \_\_\_\_\_ because it was rusty.
7. The position was \_\_\_\_\_ by small-arms fire.
8. The battle group is \_\_\_\_\_ into attack formation.
9. They are \_\_\_\_\_ the vehicles with hessian and pieces of foliage.
10. The enemy have \_\_\_\_\_ the river between Mistelbach and Bocksdorf.
11. That line of hills will \_\_\_\_\_ our line of retreat.
12. Rations and water will be \_\_\_\_\_ at 2130 hours.
13. You \_\_\_\_\_ the rocket by pulling out this pin.
14. The enemy has been \_\_\_\_\_ C Company's position for over an hour.
15. I will \_\_\_\_\_ you in two hours.

**Ex. 9.** *Phrasal verbs are quite common in military English. They consist of two words: a verb and a preposition. Match each phrasal verb below with its correct definition. The first one has been done for you as an example: 1d*

## Phrasal Verb

1. pick up
2. dig in
3. stand to
4. mop up
5. take off
6. bomb up
7. push on
8. roll up
9. stand by
10. give up
11. fall in
12. bug out
13. home in
14. lie up
15. hold out

## Definition

- a. to resupply a fighting vehicle or aircraft with ammunition
- b. to abandon a position or location in a hurry
- c. to be ready to do something.
- d. to collect people or things with an aircraft, boat or vehicle, in order to transport them to another location
- e. to move forwards as fast as possible
- f. to be awake and at battle stations, in order to receive an enemy attack
- g. to admit that you cannot do something
- h. to be guided towards something
- i. to dig trenches or prepare other field fortifications
- j. to leave the ground
- k. to clear an area of any enemy who remain after their main force has withdrawn or been defeated
- l. to assault through an enemy position sideways, destroying or capturing it trench by trench
- m. to rest or wait in a concealed position before continuing a patrol or other covert operation
- n. to continue to defend or resist
- o. to take your place on a formal parade

**Ex. 10. Use the phrasal verbs from the previous exercise to complete the sentences below. You may have to change the forms of the verbs to fit the grammar of the sentence. The first one has been done for you as an example.**

1. The squadron took off while the airfield was being shelled.
2. We \_\_\_\_\_ in a small wood and observed the road.
3. B Company are \_\_\_\_\_ around the bridge.
4. If the enemy capture that hill, they will be able to \_\_\_\_\_ the entire position.
5. The installation was destroyed when a missile \_\_\_\_\_ on its radar system.
6. We had to \_\_\_\_\_ when C Company's position was overrun.
7. After several abortive assaults, the enemy \_\_\_\_\_ and withdrew.

8. The patrol was \_\_\_\_\_ by submarine.
9. The men collected their weapons and \_\_\_\_\_ outside company headquarters.
10. We \_\_\_\_\_ until last light. Then we were forced to withdraw.
11. Sunray says that we must \_\_\_\_\_ and capture the position.
12. D Squadron are still \_\_\_\_\_ their vehicles.
13. The company \_\_\_\_\_ for most of the night, after one of the trip-flares went off.
14. Two platoons are \_\_\_\_\_ to provide back-up.
15. The battalion has been \_\_\_\_\_ isolated groups of guerrillas in the hills.

**Ex. 11. Connect military words to the definitions.**

**leave • casualties • evacuate • bayonet • reconnoiter • aggression**  
**infantry neutral • invade • reveille • capitulate • mobilize**  
**conscriptations • convoy recruit • arsenal • cavalry**  
**battalion espionage • ammunition • parachute • besiege**

1. An unprovoked attack by an enemy.
2. Compulsory enrolment as soldiers and sailors.
3. The killed or wounded in a battle.
4. A number of ships or vehicles travelling together under escort for the sake of safety.
5. The act of spying.
6. To remove from one place to another to avoid the destruction of war.
7. To make troops and ships for war services.
8. To enter another country as an enemy.
9. Taking neither side in a battle.
10. Shells, bombs and other destructive items.
11. A knife fixed on to the end of a gun.
12. Music for awakening the soldiers in the morning.
13. A place where naval or military weapons are made or stored.
14. An apparatus which opens like an umbrella to enable a person to drop safely from an aircraft.
15. Horse-soldiers.
16. Foot-soldiers.
17. To make an examination of enemy territory.
18. To surrender to an enemy on agreed terms.
19. The main division of an army.
20. A soldier recently enlisted for services.
21. A soldier's holiday.
22. To surround a place with the intention of capturing it.

**Ex. 12. The twenty-four hour clock is always used in military timings and to avoid confusion, the word 'hours' is normally added to the end. This is usually written as 'hrs'.**

For example: *The briefing is at 1430 hrs.*

Now write the timings below as you would actually say them. The first one has been done for you as an example.

1. 1625 hrs \_\_\_\_\_ sixteen twenty-five hours \_\_\_\_\_
2. 0400 hrs \_\_\_\_\_
3. 1545 hrs \_\_\_\_\_
4. 0910 hrs \_\_\_\_\_
5. 2009 hrs \_\_\_\_\_
6. 1059 hrs \_\_\_\_\_
7. 1330 hrs \_\_\_\_\_
8. 1800 hrs \_\_\_\_\_
9. 0043 hrs \_\_\_\_\_
10. 2000 hrs \_\_\_\_\_
11. 0306 hrs \_\_\_\_\_
12. 2110 hrs \_\_\_\_\_
13. 2218 hrs \_\_\_\_\_
14. 1717 hrs \_\_\_\_\_
15. 0005 hrs \_\_\_\_\_

**Ex. 13.** *When you work with other units and formations, you may well have to deal with one or more of these officers. Match the appointment in column A with the job description in column B. The first one has been done for you as an example: 1d*

**Column A**

1. Staff Officer (SO)
2. Quartermaster (QM)
3. Public Relations Officer (PRO)
4. Aide-de-camp (ADC)
5. Forward Air Controller (FAC)
6. Commanding Officer (CO)
7. Intelligence Officer (IO)
8. Liaison Officer (LO)
9. Forward Observation Officer (FOO)
10. Battery Commander (BC)
11. Ammunition Technical Officer (ATO)
12. Executive Officer (XO)
13. Officer Commanding (OC)
14. Adjutant

**Column B**

- a. I act as personal assistant to the general.
- b. I direct close air support.
- c. I assist the battalion commander with his administrative work.
- d. I work in a brigade headquarters.
- e. I command a company-sized grouping of artillery.
- f. I am responsible for coordinating staff duties within the battalion headquarters.
- g. I command a company.
- h. I deal with the media.
- i. I direct artillery fire.
- j. I am responsible for the logistics of the battalion.
- k. I collect and analyse information about the enemy.
- l. I command a battalion.
- m. I act as a link between the brigade and the battle groups.
- n. I dispose of unexploded bombs.

**Ex. 14.** *a) Some verbs are associated primarily with offensive operations, while others are more usually associated with defence. Look at the verbs below and put them in the relevant columns. The first one has been done for you as an example.*

- advance • attack • capture • counter-attack • delay
- deny • envelop • fortify • hold • outflank

**Offence**  
*advance*

**Defence**

b) Now complete each sentence, using one of the verbs above. You may have to change the form of the verb to fit the grammar of the sentence.

1. We were still reorganizing on the objective when the enemy \_\_\_\_\_ .
2. The enemy are trying to \_\_\_\_\_ us on the left.
3. Corps is \_\_\_\_\_ towards Minden.
4. Our mission is to \_\_\_\_\_ the enemy until the other battle groups have crossed the river.
5. The brigade \_\_\_\_\_ its positions until 1030 hours. Then it was forced to withdraw.
6. The enemy has \_\_\_\_\_ B Company. They are now completely cut off.
7. We must \_\_\_\_\_ these routes to the enemy for as long as possible.
8. We were unable to support the Fusiliers as they \_\_\_\_\_ the village of Landshut.
9. Enemy paratroopers have \_\_\_\_\_ the bridge at Arnheim.
10. We had just finished \_\_\_\_\_ our positions when we came under fire.

***Ex. 15. Most large-scale military operations involve a high level of cooperation between the different arms and services. It is therefore essential for all servicemen to have a wide vocabulary of military terms and expressions.***

***Below is a report written about an imaginary combined arms operation. Use the words and expressions from the box to fill in the gaps in the text.***

- air defence • naval gunfire support • line of defence • beachhead
- naval bombardment • Engineer • sorties • airborne • deliberate attack
- forward observation officer • close air support • landing craft

## REPORT

### Combined arms operation

On D-1, (1) \_\_\_\_\_ units were dropped by parachute to seize strategic crossings over the River Dingwezi. All of these objectives were achieved, with minimal loss. The beach landings on D-Day were preceded by an intensive (2) \_\_\_\_\_, which failed to silence all of the enemy coastal batteries. Consequently, ten percent of the (3) \_\_\_\_\_ in the first wave were either destroyed or disabled.

Despite this, all primary objectives were achieved by 1100 hours, although ground forces continued to rely upon (4) \_\_\_\_\_ until the artillery had been fully offloaded. (5) \_\_\_\_\_ units suffered particularly high casualties in the breaching of a secondary line of obstacles in the sand dunes. The (6) \_\_\_\_\_ was fully established by 1900 hours on D-Day. The main enemy force has withdrawn to the River Muzenga and is now constructing a strong (7) \_\_\_\_\_ between Tangji and Leopoldville. To date, carrier-based strike aircraft have flown a total of 82 (8) \_\_\_\_\_. The enemy (9) \_\_\_\_\_ has been better than anticipated, and 8 allied aircraft have been shot down. Owing to a shortage of forward air controllers, most (10) \_\_\_\_\_ has been directed by (11) \_\_\_\_\_ from the artillery. The 4th and 7th Armoured Brigades started crossing the River Dingwezi at 1030 hours on D+1 and are now preparing to mount a (12) \_\_\_\_\_ on the Muzenga position at first light on D+2.

*Ex. 16. When you are operating with English-speaking troops, it is essential that you understand the various commands and warnings which are used. Your life may depend upon it!*

*Match the terms and phrases in column A to their correct definitions in column B. The first one has been done for you as an example.*

<b>Column A</b>	<b>Column B</b>
1. Make ready!	a. Get into a lifeboat; the vessel is about to sink .
2. Take cover!	b. A chemical agent has just been used.
3. Unload!	c. Shoot as quickly as possible (infantry).
4. Halt!	d. Cock your weapon.
5. Tank action!	e. The enemy has been sighted.
6. Open fire!	f. Shoot as quickly as possible (artillery or mortars).
7. Gas! Gas! Gas!	g. Find yourself some protection from enemy fire.
8. Fire for effect!	h. Stop moving and adopt a position of defence.
9. Go firm!	i. Get out of your vehicle.
10. Ceasefire!	j. Remove the magazine from the weapon and check that the breech is clear of ammunition. Pull the trigger and apply the safety catch, then replace the magazine on the weapon.
11. Abandon ship!	k. Start shooting.
12. Debus!	l. Fire one round, so that the fall of shot can be observed (artillery or mortars).
13. Rapid fire!	m. Go to your battle position immediately.
14. Make safe!	n. Remove all ammunition from the weapon and ensure that it is clear.
15. Incoming!	o. Prepare to engage armoured vehicles.
16. Action stations!	p. Stop shooting.
17. Adjust fire!	q. Stop moving immediately.
18. Contact!	r. Shells are about to land on our position.

*Ex. 17. Test your abbreviations. What do the following stand for? The first one has been done for you as an example.*

1. FUP – *forming-up point*
2. NCO –
3. QRF –
4. NGS –
5. HF –
6. UN –
7. LMG –
8. MAW –
9. ETA –
10. VCP –
11. MFC –
12. KIA –

- 13 AWLS –
14. NBC –
- 15 CAP –
16. GMT –
17. OOB –
18. PT –
- 19 SOP –
20. FGA –
21. STOV L –
22. IR –
23. ERA –
24. TEWT –
25. FTX –

***Ex. 18. Read the text and complete the chart.***

### **An Infantry Battalion in the British Army.**

With a total strength of 625 officers and men, the battalion is the basis tactical unit in the infantry and is commanded by a lieutenant colonel known as the Commanding Officer or CO. The battalion comprises the Battalion Headquarters (HQ) Company, a Support Company and three rifle companies. The CO commands from the HQ company, which provides the battalion's administration, command and logistic elements. The Support Company comprises the battalion's fire support assets and is equipped with mortars, anti-tank weapons and machine guns.

Each rifle company is commanded by a major, known as the Officer Commanding or OC, and consists of a company HQ and three rifle platoons. Platoons are numbered in sequence, for example A Company consists of 1, 2 and 3 Platoons and B Company comprises 4, 5 and 6 platoons. Each platoon comprises a Platoon HQ and three sections. Each section has a strength of eight men and is divided into two fire teams known as *Charlie* and *Delta*. A fire team consists of an NCO (Non-commissioned officer) and three soldiers.

During wartime or of any kind of operation, the Battalion is task organised for a specific mission and becomes a battle group. The battlegroup is made up of the Battalion HQ Company, Support Company and one or more rifle companies plus attached elements from armour, engineer and aviation units. On operation, the battlegroup is assigned to a brigade, which is made up of three or four battlegroups, plus artillery, aviation and support elements. The brigade forms part of a division, which is made up of three or four brigades with a total strength of about 15,000 soldiers.

	<b>Organisations</b>	<b>Strength</b>	<b>Composition</b>	<b>Commander</b>
<b>Formations</b>	division	15,000	3-4 brigades	major general
	brigade	5,000	3-4 battlegroups	brigadier
<b>UNIT</b>	1) .....	625	HQ Company and Support Company + 3 Companies	2) .....
	company	100	Company HQ + 3 platoons	3).....
<b>Sub-units</b>	4) .....	28	Pl HQ + 3 sections	lieutenant
	section	5) .....	2 fire teams	corporal
	6) .....	4	1 NCO and 3 men	corporal / lance corporal

*Ex. 19. Match the words with the definitions.*

**airdrop • drop • zone • jumpmaster • pass • stick • (or • chalk) • wave**

1. A short run by an aircraft at a target. ....
2. The area paratroops land or equipment is dropped by a parachute. ....
3. A group of paratroops assigned to one aircraft. ....
4. The person who controls paratroops from entering the aircraft until they exit.  
.....
5. A formation of forces that land at the same time. ....
6. When troops or equipment leave an aircraft. ....

## Construction. Energy Efficiency

*What is “architecture”? Read the following information and compare your answer:*

Architecture is often considered to be the oldest and the most useful of the fine arts, as in some respect it is a prerequisite for the other arts. Architecture can be defined, albeit unsatisfactorily, in four different ways. It is the art and method of erecting structures; it is a planned entity; it is a body or corpus of work; it is a way to build. An observer of architecture will note that it meets requirements on functional, technological, and aesthetic levels. Throughout history, architecture has been studied through buildings that have been substantial enough to survive the test of time.

### History of architecture

From the earliest caves, daylight informed the lives of the inhabitants, initially in the difference between night and day. But as *dwelling*s became more **sophisticated** daylighting penetrated by means of openings or windows letting in light.

The history of architecture is synonymous with the history of the window and of daylighting from the initial crude openings, letting in light and air, heat and cold. The window was the *vehicle* for the introduction of daylight, and ultimately to the wondrous interiors of the medieval cathedral, the Baroque churches or the many private buildings of the 18th century.

The window has developed over the centuries, but its purpose of letting in daylight has remained its **primary role**. Window openings *required* a suitable infill to modify the external climate. At first *various materials* were used, such as thin slabs of marble, sheets of mica or oiled paper. But it was not until the development of glass for windows that substantial progress could really be made.

Glass had been discovered as early as 3000 BC in Egypt, and was used for **decorative objects**, but it is known that small panes of **hand-blown** glass set into bronze frames were used for the infill to window openings during the Roman period.

It was left until the 17th century for large panes of glass to be developed in England and for larger windows to be made possible.

The appearance of buildings of all periods *reflects* the nature of the windows which have always led to innovation, and this can be seen in the **stained glass windows** of the great medieval cathedrals. They tell us the Christian story, where whole walls of glass were made possible by structures such as the flying buttress.

Windows had to serve military needs in fortified buildings, leading to **slit windows** from which arrows could be fired.

A further innovative means of daylighting was that developed for the lighting of the Baroque churches of southern Germany. Here ‘indirect’ daylight onto the ornate decorations and ornaments of the church is gained from windows concealed from the direct view of the **congregation**. Indirect daylighting is equally valid today, as used by Basil Spence at Coventry Cathedral, or by Jorn Utson at the Bagsvaerd Church in Denmark.

Whilst the vertical windows were clearly of the first importance, and continue to be so today, it was the roof lights allowing daylight into the central parts of buildings that had an important influence on the plan form of the stately homes of the 17th and 18th centuries. These took several forms, from **domes** such as that at Kedleston Hall (1759) where light enters from the top or Chiswick House (1725) where the dome is surrounded by windows in the sides. In both cases the method of daylighting allowed architects to have more **flexibility** to plan the central areas of their buildings. It is of interest that this method of introducing daylight to the centre of buildings has a resonance with the atria which can be seen in many buildings today

***Answer the questions***

1. Why is the history of architecture synonymous with the history of the window?
2. What were the first materials used for windows?
3. What do you know about the earliest usage of glass?
4. How did the stained glass windows function in the great medieval cathedrals?
5. In which way did windows serve military needs?
6. What is the importance of roof lights?

***Ex. 1. Use the words below to complete the sentences:***

**inhabitants • ordinary • holes • shutters • floor-to-ceiling,  
glass • ancient • marble • economical**

Primitive windows were just 1) \_\_\_\_\_ in a wall. Later, windows were covered with animal hide, cloth, or wood. 2) \_\_\_\_\_ that could be opened and closed came next. Over time, windows were built that both protected the 3) \_\_\_\_\_ from the elements and transmitted light: mullioned glass windows, which joined multiple small pieces of glass with leading, paper windows, flattened pieces of translucent animal horn, and plates of thinly sliced 4) \_\_\_\_\_. The Romans were the first to use 5) \_\_\_\_\_ for windows. In Alexandria ca. 100 CE, cast glass windows, albeit with poor optical properties, began to appear. Mullioned glass windows were the windows of choice among European well-to-do, whereas paper windows were 6) \_\_\_\_\_ and widely used in 7) \_\_\_\_\_ China, Korea and Japan. In England, glass became common in the windows of 8) \_\_\_\_\_ homes only in the early 17th century whereas windows made up of panes of flattened animal horn were used as early as the 14th century in Northern Britain. Modern-style 9) \_\_\_\_\_ became possible only after the industrial glass making process was perfected.

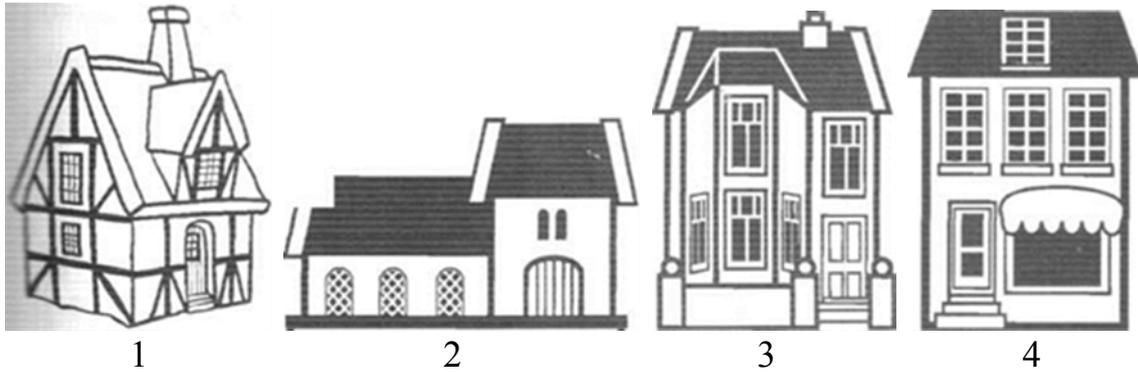
***What architectural styles do you know? Define “architectural style” as you see it:***

From the olden days till date, the architectural styles have undergone a massive change. When one studies the different architectural styles, one can understand the kind of creativity that has existed since the ancient days. Modern architects often look up to the olden styles of architecture, which continue to inspire professionals in terms of their design and functionality. Here are the descriptions of different architectural styles.

<b>Architectural Style</b>	<b>Description</b>
Ancient Egyptian Architecture	Ancient Egyptian architecture is about the major use of mud bricks and stones for the architectural structures. The beautiful Egyptian temples and pyramids are some examples of this style of architecture.
Ancient Greek Architecture	Ancient Greek architecture can be distinguished by the specific elements such as the rectangular buildings and the large columns.
Baroque Architecture	Baroque architectural styles always played around with a dramatic use of light, central projections, ornamental decoration, and pear domes, etc. The works of Michelangelo created for the late Roman buildings belong to Baroque architecture.
Byzantine Architecture	The use of the circular dome is one of the typical elements of Byzantine architecture.
Chinese Architecture	Chinese architecture is all about the balance and symmetry in the design. The designs have an emphasis of the use of a horizontal axis.
Gothic Architecture	This architectural style was prominent during the high and the late medieval period and began at the Abbey of Saint-Denis. Its certain characteristics are pointed arches, large individual windows, flamboyant designs and the emphasis on the creation of vertical lines in the design.
Roman Architecture	The Roman architecture had a lot of influence from the Greek architecture. The use of the arches and domes are some of the characteristics of this style. The Roman temples, amphitheaters, baths, basilicas, etc. stand testimony to the greatness of this style.
Renaissance Architecture	This term refers to the architectural monuments built from the 15th century to the early 17th century. The common features of this style are the use of balance in the design, geometrical shapes, beautiful columns and domes, etc.
East Slavic Architecture	East Slavic architecture has always been predominantly religious. Some of the basic elements of East Slavic architecture are the sharp sloping roofs, domes that cover the structure, the tent shaped spires, etc.

**Ex. 2. Match the names of the British and US architectural styles in A with their definitions in B and with the pictures below.**

Norman/Romanesque	A. connected with the period between 1485 and 1603: with the black wood of the house frame showing in the white outer walls
Tudor/Elizabethan	B. connected with the period from 1837-1901 when Victoria was Queen of England and her son Edward was King of England from 1901-1910: built in red brick and quite highly decorated
Georgian	C. style popular during the 11th and 12th centuries: thick, strong walls, sometimes with equally thick, strong pillars, narrow windows and doors with rounded tops and geometric patterns decorating the stonework
Victorian/Edwardian	D. related to the 18th century (the rule of Kings Georges, the First, Second, and Third): very attractive buildings built in red brick with white stone decorations



## **RESIDENTIAL AND INDUSTRIAL BUILDINGS**

In technically developed countries the building industry, comprising skilled and unskilled workers in many trades, building engineers and architects, managerial staff and designers employs a considerable proportion of the available labour force.

Building industry, including residential public and industrial construction, holds a considerable place in the National Economy and is being carried on a large scale. It is the largest single industry in the country. The problems of construction have grown into major, political issues in most countries.

Housing is prominent among the factors affecting the level of living. The improvement of the housing represents a concrete and visible rise in the general level of living. In many countries residential construction has constituted at least 12 per cent and frequently more than 25 per cent of all capital formation. Since the USSR home building industry is the concern of the state. The research and development in housing technology is carried out on a national scale and is being paid much attention to.

The ever growing housing demands have brought to life new methods of construction with great emphasis upon standardization, new levels of technological advance, utilizing such techniques as offsite prefabrication, precutting, use of reinforced concrete panels and large-scale site planning.

At present, prefabricated structures and precast elements may be classified into two principal groups – for residential houses and industrial buildings.

Present-day design for residential construction envisages all modern amenities for a dwelling. They advocate larger, better built and better equipped flats and houses. Steel was gradually substituted for iron and permitted wider rooms and larger windows. Windows can be enlarged to the extent that they constitute a large fraction of the wall area. There is a marked improvement in the heating and ventilating systems as well as in hot-water supply, kitchen and sanitary fittings. Many tenants now can afford better furnishings, refrigerators, washing machines, etc. A house which is a physical environment where a family develops is acquiring a new and modern look.

Industrial buildings comprise another significant type of construction. This type of construction involves factories, laboratories, food processing plants, mines, office buildings, stores, garages, hangars and other storage facilities, exhibition halls, etc. Modern industrial buildings have demonstrated the advantages of reinforced concrete arches, metal frames, glass walls and prefabricated standardized mass produced parts.

**Ex. 3. Choose a word to put into each gap:**

**building • offsite prefabrication • reinforced concrete • tenants • housing • site • issues • technology • frames • residential construction • furnishings • proportion • ventilating • steel • construction • level • amenities • fraction • labour • panels • heating • industrial buildings • enlarged**

1. In technically developed countries the building industry employs a considerable ... of the available ... force. 2. ... industry is being carried on a large scale. 3. The problems of ... have grown into major, political ... in most countries. 4. The improvement of the ... represents a concrete and visible rise in the general ... of living. 5. The research and development in housing ... is being paid much attention to. 6. At present it is necessary to utilize such techniques as..., precutting, use of reinforced concrete ... and large-scale ... planning. 7. Present day designs for ... envisage all modern ... for a dwelling. 8. There is a marked improvement in the ... and ... systems. 9. Many ... now can afford better ... , refrigerators, washing machines, etc. 10. ... comprise another significant type of construction. 11. Modern industrial buildings have demonstrated the advantages of ... arches, metal ..., glass walls etc. 12. ... was gradually substituted for iron. 13. Windows can be ... to the extent that they constitute a large ... of the wall area.

### **TYPES OF BUILDINGS**

Types of buildings depend upon social functions and may be classified according to the role in the Community. The types of buildings may be domestic, educational, office, industrial, recreational, etc. The common and necessary conditions are:

- a) its suitability to be used by human beings in general and its adaptability to particular human activities;
- b) the stability and permanence of its construction.

Speaking of residential construction we must say that the apartment houses are mostly built to suit urban conditions. Group housing provides home for many families and is at once public and private. The techniques of construction or the methods by which structures are formed from particular materials are influenced not only by the availability and character of materials but also by the total technological development of society.

The evolution of techniques is conditioned by two factors:

- 1) one is economic – the search for a maximum of stability and durability in building with a minimum of materials, labour and time;
- 2) the other is expressive – the desire to produce meaningful form.

Large housing programmes have tended to stimulate technological change in the building industry. Modular design (i.e. design in which the elements are dimensioned in combinations of a fixed unit) has led to standardization of elements, interchangeability of parts and increased possibilities for mass production, with resultant economies. Entire apartment assemblages are available and are being used to an increasing extent. These techniques aim at a higher output of better structures at lower cost. The high degree of mechanization and standardization is successfully achieved by reinforced concrete blocks and units. Reinforced concrete homes are produced by a variety of construction methods. Various methods of constructing reinforced concrete houses involve extensive use of large sections manufactured in heavily mechanized factories and erected at the site.

In order to build a house first an excavation is dug by bulldozers. Then a foundation is laid to carry the load of a structure and to keep the walls and the floors from the contact with soil. Floors divide a building into storeys and carry the loads too. The upper part of a structure is a roof; it ties a building, gives the firmness to the structure and protects people from rain, wind, snow, etc. Doors, windows, stairs, lifts are integral elements of a building and they are always precast or prefabricated.

When a structure is ready builders start to decorate it. When decoration work is over a building is considered to be finished. The built-in space of an apartment should be carefully thought of as well. There is a considerable trend toward built-in furniture. Rooms should be both efficient and visually satisfying. The extent of built-in cabinets must be determined. Drawers and shelves can often be concealed behind walls, freeing valuable floor space.

***Ex. 4. Choose a word to put into each gap:***

**public • resultant • technological • private • meaningful • stability • assemblages • techniques • standardization • the load • the firmness • reinforced concrete • interchangeability • foundation • roof • mechanization • precast • built-in • the evolution • permanence • freeing • modular • a building**

1. Among the common and necessary conditions are ... and ... of the construction. 2. Group housing provides home for many families and is at once ... and ... . 3. The ... of construction are influenced by the total ... development of society. 4. One of the factors influenced ... of techniques is the desire to produce ... form. 5. ... design has led to ... of elements, ... of parts and increased possibilities for mass production, with ... economies. 6. Entire apartment ... are available and are being used to an increasing extent. 7. The high degree of ... and standardization is successfully achieved by ... blocks and units. 8. A ... is laid to carry ... of a structure and to keep the walls and the floors from the contact with soil. 9. ... ties a building and gives ... to the structure. 10. Doors, windows, stairs, lifts are integral elements of ... and they are always ... or prefabricated. 11. There is a considerable trend toward ... furniture. 12. Drawers and shelves can often be concealed behind walls, ... valuable floor space.

***Ex. 5. Match the words with their translation***

- |                   |                  |
|-------------------|------------------|
| 1. pane           | a) комин         |
| 2. airtight       | b) шпаклівка     |
| 3. double-glazing | c) віконне скло  |
| 4. putty          | d) дуб           |
| 5. groove         | e) герметичний   |
| 6. hinge          | f) проріз, виріз |
| 7. handle         | g) ескиз         |
| 8. draft          | h) ручка         |

- |                            |                          |
|----------------------------|--------------------------|
| 9. mantelpiece (fireplace) | i) іпотека               |
| 10. oak                    | j) дверна петля          |
| 11. mortgage               | k) подвійне застосування |

### Materials

#### Ex. 6. Match the terms with definitions:

- |               |  |
|---------------|--|
| 1. cement     | a) calcium-containing inorganic materials, in which carbonates, oxides and hydroxides predominate  |
| 2. concrete   | b) a powdery substance made by calcining lime and clay, mixed with water to form mortar or mixed with sand, gravel, and water to turn into a solid                       |
| 3. lime       | c) a mixture of cement, water, sand and gravel (stones, crushed rock)  |
| 4. rock       | a) hard solid non-metallic mineral matter of which rock is made, especially as a building material   |
| 5. stone      | b) a building component, such as a block or lintel, made from cast concrete with a facing that resembles natural stone   |
| 6. marble     | c) a very hard, granular, crystalline, igneous rock consisting mainly of quartz, mica, and feldspar and often used as a building stone                                   |
| 7. granite    | d) any natural material, hard or soft (e.g. clay), having a distinctive mineral composition  |
| 8. cast stone | e) a hard crystalline metamorphic form of limestone, typically white with coloured mottlings or streaks, which may be polished and is used in sculpture and architecture |

#### Ex. 7. Match the types of houses in A with their definitions in B.

A	B
<i>British houses</i>	
1. semi	A. small old village house with a thatched roof
2. cottage	B. added bedroom in the roof space
3. thatched cottage	C. house whose wooden framework is covered with horizontal planking
4. conversion	D. semi-detached house
5. maisonette	E. (suburban) area where all houses were built at the same time and are similar in style
6. loft conversion	F. small old village house
7. weatherboard house	G. apartment on two floors (which is part of a larger house)
8. housing estate	H. result of changing a large house, warehouse etc. into several apartments

A	B
<i>US houses</i>	
1. ranch	A. additional (usually small) home where people live at the weekends and while on holidays
2. mansion	B. apartment with only one room
3. brownstone	C. (suburban) area where all the houses were built at the same time and similar in style
4. clapboard house	D. building or apartment owned by the people living in it
5. frame house	E. house with a front made of brown stone, common in New York City
6. studio / loft	F. very large house where rich people live
7. housing development	G. (esp. in the Midwest) wooden house with a pointed roof
8. condominium/ co-op	H. house that looks like an ordinary one but can be moved
9. mobile home	I. one-story farmhouse
10. vacation home	J. (esp. in New England) house whose wooden framework is covered with horizontal planking (usually white)

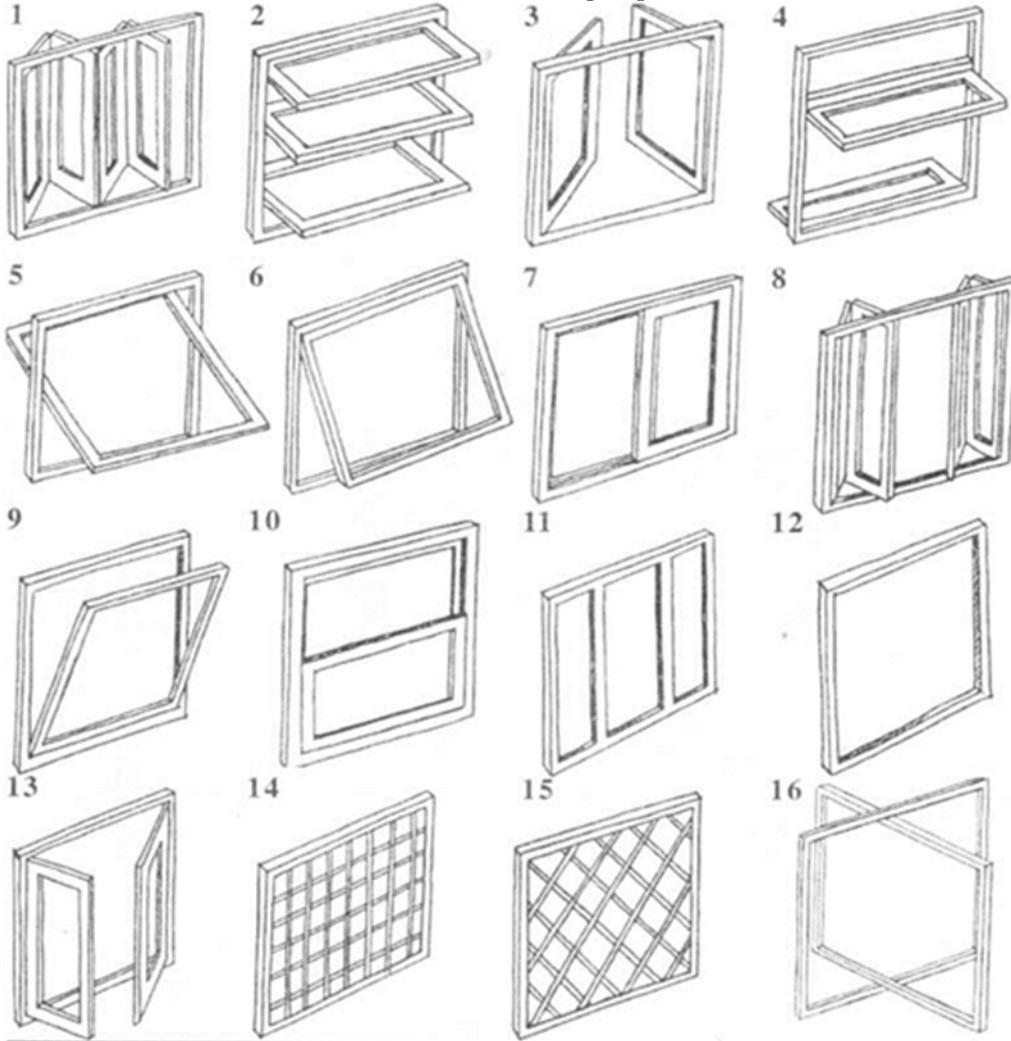
### Types of windows

#### *Ex. 8. Match the term with its definition:*

- |                                  |  |
|----------------------------------|--|
| 1) sash (double-hung) window     | a) a window (more usually a door-sized window) where the sash tilts inwards at the top and then slides horizontally behind the fixed pane  |
| 2) casement window               | b) a window composed of pieces of colored glass, transparent, translucent or opaque, frequently portraying people or scenes  |
| 3) tilt and slide window         | c) also known as a louvered window, it consists of parallel slats of glass or acryl that open and close like a Venetian blind, usually using a crank or a lever  |
| 4) transom window                | d) a window big enough and low enough so that occupants can escape through the opening in an emergency, such as a fire   |
| 5) jalousie window               | e) also known as a French door, it is really a type of door, but one which has one or more panes of glass set into the whole length of the door , meaning it also functions as a window  |
| 6) clerestory window             | f) the traditional style of window in the UK with two parts that overlap slightly and slide up and down inside the frame   |
| 7) fixed window                  | g) a window set in a roof structure or high in a wall, used for daylighting  |
| 8) emergency exit/ egress window | h) a window with a hinged sash that swings in or out like a door comprising either a slide-hung, top-hung, or occasionally bottom-hung sash or a combination of these types, sometimes with fixed panels on one or more slides of the sash |
| 9) stained glass window          | i) a window that cannot be opened, whose function is limited to allowing light to enter  |
| 10) French window                | j) a window above a door; it provides ventilation before forced air heating and cooling  |

*Ex. 9. Study the drawings (1-16) below and match the types of the windows (A-P) with a corresponding drawing.*

- |                                 |                              |
|---------------------------------|------------------------------|
| <b>A. hopper</b>                | <b>I. sliding</b>            |
| <b>B. louvered</b>              | <b>J. sash (double hung)</b> |
| <b>C. folding</b>               | <b>K. deadlight</b>          |
| <b>D. accordion</b>             | <b>L. mullion</b>            |
| <b>E. pivoting (vertical)</b>   | <b>M. awning</b>             |
| <b>F. pivoting (horizontal)</b> | <b>N. lattice</b>            |
| <b>G. French</b>                | <b>O. leaded</b>             |
| <b>H. casement</b>              | <b>P. projected</b>          |



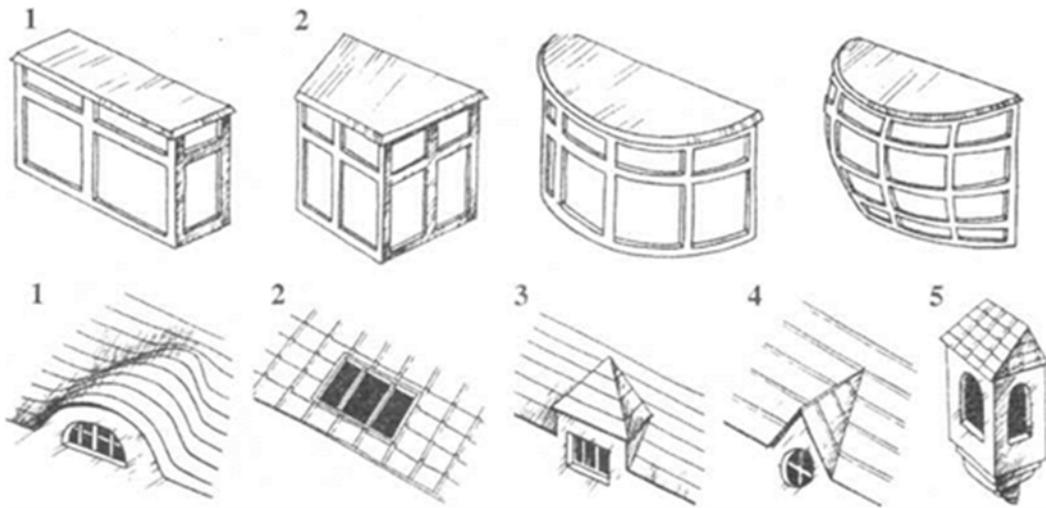
*Ex. 10. There are also protruding and roof windows. Study the drawings below with the further information on the types of windows.*

*Types of protruding windows:*

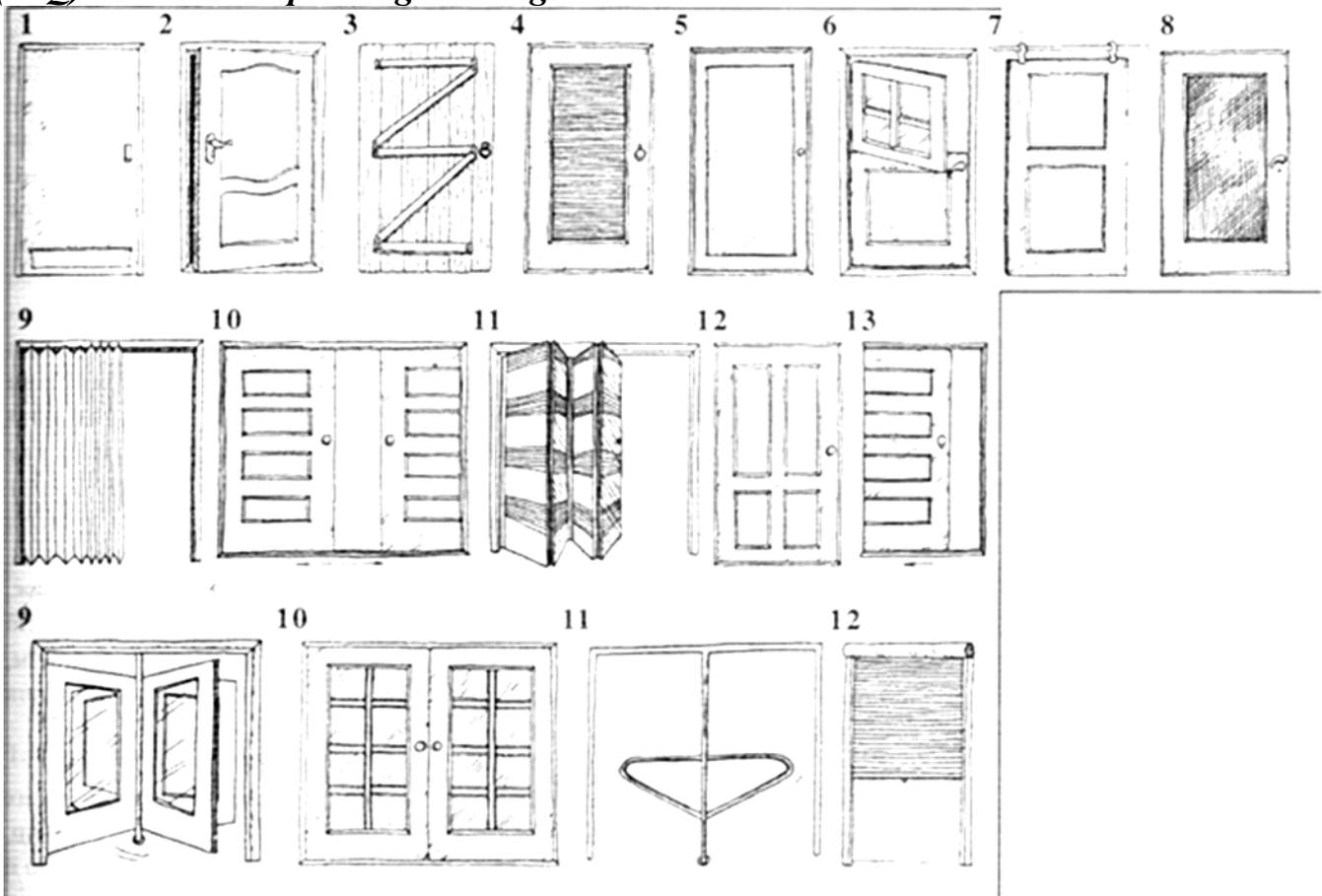
1. *box*
2. *bay*
3. *bow*
4. *barrel*

*Types of roof windows:*

1. *rooflight*
2. *eyebrow*
3. *gable dormer*
4. *hipped dormer*
5. *oriel*



*Ex. 11. Study the drawings (1-17) below and match the types of the doors (A-Q) with a corresponding drawing.*



### *Types of doors:*

*A. flush*  
*B. panel*  
*C. glass*  
*D. ledge and brace*  
*E. Dutch (stable)*  
*F. screen*  
*G. louvered*  
*H. French*  
*I. hanging*

*J. revolving*  
*K. swing*  
*L. sliding*  
*M. double side*  
*N. accordion*  
*O. folding*  
*P. roll*  
*Q. turnstile*

## **ROOFS**

A roof is the topmost part of a building. It is a covering constructed over the enclosed space to:

- keep out rain and wind;
- provide shade from the sun;
- keep the interior cool;
- **retain** heat in cool weather;
- ensure that the structure is properly weighted down.

Roofs should meet the following basic standards of performance: 1) allowing rainwater to flow freely away; 2) expanding and contracting without failure; 3) resisting fire adequately; 4) providing light and ventilation; 5) **durability**.

A pitched roof is often a popular choice. The main supporting structure is timber, which is easy to work and transport. A pitched roof is stable in most weather and its **slope** disposes of rainwater quickly. Additionally, the space enclosed by the roof can add some extra living or storage space.

In simple roof construction these types of roof are usually found:

### **Gable roof**

In this type of roof the ends of the roof enclose the end walls. The triangular wall between the roof verges is called the gable end.

### **Hipped roof**

A hipped roof is formed when two roof slopes meet right angles.

### **Lean-to roof**

This roof has a single pitch that rests against a higher wall.

### **Mono-pitch roof**

This roof has a pitch in one direction. The ridge does not rest against anything.

Three parts of a pitched roof affect the structural design: *span*; *pitch*; *roof covering*.

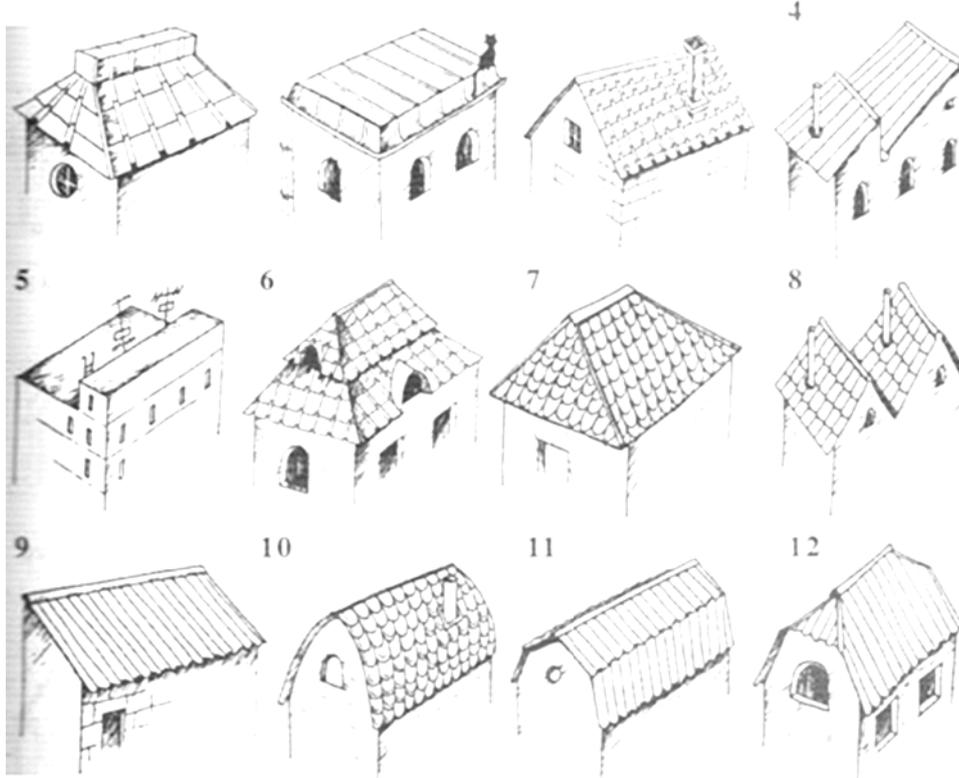
The *span* is the distance between the **masonry** structures that support the roof. The structure of the roof becomes more complex as the span increases.

The *pitch* is the angle of the slope of the roof measured from the horizontal. A **steeper** pitch needs more roof covering material, which increases the weight to be supported. The surface area affected by wind is also greater. The roof needs to be strong enough to allow for these factors.

**Ex. 12. Study the drawings (1-12) below and match the types of the roofs (A-L) with a corresponding drawing.**

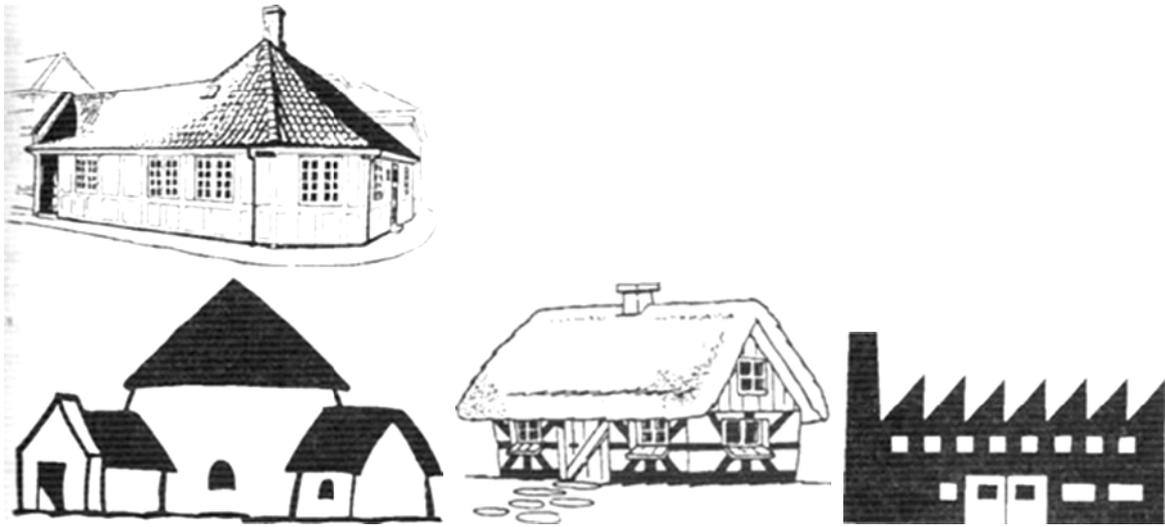
**Types of roofs:**

- |                                      |  |
|--------------------------------------|--|
| <b>A. rainbow</b>                    | <b>G. monitor</b>                      |
| <b>B. penthouse</b>                  | <b>H. double pitch</b>                 |
| <b>C. valley (m-shaped)</b>          | <b>I. saw tooth</b>                    |
| <b>D. mansard (UK), gambrel (US)</b> | <b>J. hipped gable (jerkin head)</b>   |
| <b>E. skirt</b>                      | <b>K. hipped</b>                       |
| <b>F. lean to</b>                    | <b>L. gabled (pitched, saddleback)</b> |



**Ex.13. Describe the houses below giving as many details about them as possible: architectural styles, types of roofs, windows, doors, etc.**





## BUILDING A HOUSE

*Planning a house.* If a person decides to build a house, he or she must first select a lot or piece of land. The next step is to consult an architect or builder. This expert will check local zoning laws and electrical, building and plumbing codes. Knowledge of these codes protects the buyer in both the present and the future. For example the zoning law in the area may permit the construction of factories near the new house. Such construction might well decrease the value of the house. The architect then designs the house, according to the buyer's ideas. He or she makes specifications and blue prints that become the basis for the contract between the builder and the buyer. They provide information on size, materials, and how the house is to be built. The architect also supervises the construction of the house.

*The frame* is the skeleton around which the rest of the house is built. After the footings and foundation have been formed, workers bolt wooden sills or base plates to the foundation. The sills support the outside walls. Floor joists or support beams are attached to the sills about 16 inches (41 centimeters) apart. A joist runs from one sill and joins with another joist from the opposite sill. They meet at a main support beam or basement wall about midway between the house's sides. Floor boards or plywood nailed on top of the joists make the bottom layer of the floor. The structure then is solid enough to hold the wall frames of the house. Wall frames include vertical pieces of lumber called studs and horizontal pieces called plates. Carpenters assemble and nail together each wall frame separately before attaching it to the sill. Then they lift each frame into place and brace it temporarily. When all the outside walls have been raised, they are nailed together and braced permanently. The sheathing or inner layer of the outside wall may be wood, fiberboard, or plasterboard nailed to the studs. Sometimes builders tack tar paper to the sheathing before adding the siding or outer layer. Siding may be aluminium, brick, stone, or wood placed directly over the sheathing or tar paper. The roof seals the top of the house. Some roofs are flat, but most are slanted. Slanted roofs are often formed by pieces of lumber called rafters. Carpenters nail the bottom ends of the rafters to the plates at the top of the outside walls. The rafters slant from the plates and meet at the ridgeboard. A board places at the ridge, or top edge of the roof. Rafters support the weight of the roof just as joists support the weight of the floor. After carpenters nail sheathing to

the tops of the rafters, they add heavy building paper or building felt to it. Then they add the final layer of asphalt or slate shingles, or roofing asphalt. Flashings, or strips of sheet metal, placed around the chimney and other roof openings, insulate the roof from the chimney and also prevent water from leaking into the house.

**Ex. 14. Choose a word to put into each gap:**

**carpenters • a joist • lumber • the frame • rafters • the sheathing • slate shingles • plates • plywood • plasterboard • studs • the footings • nail • the roof • stone • layer • the ridgeboard • bolt • asphalt • pieces • aluminium • leaking • slanted • the siding • sill • fiberboard • wall frame • tar paper • the chimney • wood • slant • the weight**

1. ... is the skeleton around which the rest of the house is built. 2. After ... and foundation have been formed, workers ... wooden sills or base ... to the foundation. 3. ... runs from one ... and joins with another joist from the opposite sill. 4. Floor boards or ... nailed on top of the joists make the bottom ... of the floor. 5. Wall frames include vertical pieces of ... called ... and horizontal ... called plates. 6. ... assemble and ... together each ... separately before attaching it to the sill. 7. ... or inner layer of the outside wall may be wood, ... , or ... . 8. Sometimes builders tack ... to the sheathing before adding ... or outer layer. 9. Siding may be... , brick, ... , or ... placed directly over the sheathing or tar paper. 10. ... roofs are often formed by pieces of lumber called ... . 11. The rafters ... from the plates and meet at ... . 12. Rafters support the weight of ... just as joists support ... of the floor. 13. Carpenters add the final layer of ... or ... , or roofing asphalt. 14. Flashings insulate the roof from ... and also prevents water from ... into the house.

**Ex. 15. Translate.**

1. Оселя розташовувалася у приміському житловому районі, спеціально побудованому для задоволення потреб представників “середнього класу”. Це був окремих двоповерховий будинок з двосхилим шпильастим черепичним дахом без дахового ліхтаря, але з двома слуховими вікнами шатрового типу, з димарем, звичайною телевізійною та сателітарною антенами. Ринва та водостічні труби служили для відводу води, яка під час дощу стікала донизу до водостоку. Під дахом було просторе горище, перероблене під додаткову кімнату. Зовнішні стіни були оббиті дранкою білого кольору, від чого будиночок виглядав ошатним. На бічній стіні другого поверху знаходився балкон з балюстрадою. На балкон вели скляні двері, які у спекотну погоду замінювали дверями з сіткою для захисту від комах, а вікно могло обертатися навколо власної осі. Бічні вікна першого поверху були з середником, білими підвіконнями та з віконницями. Тут були також пожежна драбина і запасний вихід, обладнаний щитовими дверями з поштовою скринькою на них та ліхтарем охоронного освітлення над ними. Парадні двері були фільонковими, а міжкімнатні - розсувними або подвійними розсувними, за винятком дверей до ванних кімнат, де стояли розпашні одностулкові двері. Ванна кімната другого поверху мала невелике підйомне вікно, а вікна фронтоної стіни були з

нижніми фрамугами. Підвальне приміщення з плінтусами та килимовим покриттям було таким затишним, що його можна було використовувати як кімнату для ігор або кабінет. Шедова покрівля, яку підпирали пофарбовані білим елегантні колони, утворювала ганок, на якому приємно було посидіти у гарну погоду, розглядаючи двір з клумбами та людей, що зрідка проходили за штахетним парканом у світлі вуличного ліхтаря, що горів/на електричному стовпі, На тротуарі, оздобленому бордюрним каменем, напроти стовпа воріт паркану, стояла червона телефонна будка, Зліва від будиночку розташувався гараж, збудований трохи в іншому стилі - плескатий дах, жовті цегляні стіни, по одному глухому вікну на кожній з бічних стін, підйомні металеві двері. На подвір'ї був ще й невеликий сарай з чотирисхилним дахом, ковзніми вікнами, масивними дощаними дверями з обкладками та діагональними зв'язками і ящиком для сміття біля них. Від парканних воріт до гаражних дверей вів охайний під'їзд.

2. Будівельна компанія пропонувала житло на будь-який смак. Для тих, хто бажав жити в окремих помешканнях, залежно від їхніх фінансових можливостей, - великі особняки, бунгало, котеджі, каркасні будинки, будинки типу ранчо, однокімнатні будинки в місті чи в приміських районах нової житлової забудови або житлові автопричепи з проживанням на стоянці таких причепів. На літо ще пропонувалися котеджі під солом'яною стріхою та дачі. Для тих, хто віддає перевагу міським квартирам, - помешкання в напівокремих будинках, будинках терасного типу, від мансардних однокімнатних до квартир у двох рівнях та пентхаусів у багатоквартирних, висотних будинках і хмарочосах! Пропонувалися також помешкання у кооперативних будинках.

3. Норманські будівлі відзначалися товстими стінами, масивними колонами та вузькими вікнами і дверима, заокругленим нагорі. Вікна часто були решітчастими (ромбами або прямокутниками). Георгіанський, вікторіанський та едвардіанський стилі відзначалися намаганням створювати привабливі будівлі: застосовувалася переважно червона цегла з білими прикрасами, еркерами з прямокутними, і багатограними, напівкруглими та циліндричними вікнами, слуховими вікнами (піддаховими, двосхилими, еркерними).

4. Архітектори експериментували з різними типами покрівель (напіввальмовими, мансардними, арковими, М-подібними, зубчатими, зі світловим ліхтарем), вікон (створними, складаними одно- та і двостворними, вікнами-жалюзі тощо), дверей (голандськими, жалюзійними, складаними, обертовими, турнікетними).

*Ex. 16. Read the ads below and try to reconstruct the abbreviations in the Woodhouse Realty ad.*

### **REALTY WORLD**

**Christians Warehouse**, SE1. Well refurbished apartments in a warehouse conversion (flat roof, sash and deadlight windows, wooden window sills, panel and flush doors), with views over the Historic St Saviours Dock in the popular Thames area. Including satellite dish, easy access to the mature secluded rear garden from the

ground floor, entry phone, security system. Drawing room, Kitchen, Bedroom 1: Dressing Area, En-Suite bathroom. Bedroom 2: Bathroom. Underground parking. Lift caretaker. Offer in the region of £175,000 Leasehold.

**Van Gogh Court**, E14. Set in a superb housing development with shops, restaurant and unique riverside beach, this converted studio is in immaculate decorative order and offers views over the River Thames. Gabled roof, double-glazed pivoting windows, French doors. Versatile studio room, fully fitted conservatory style kitchen/dining room, bathroom. Garage with a private drive. 20-foot south facing landscaped garden with a patio. Facilities, gas, cold and hot water, central heating. £108, 000 or nearest offer. No agents. Freehold.

**Waterman Way**, E1. Ideally placed for transport facilities this mid-Georgian 2-bedroom listed property (mansard roof, mullion and French windows, folding and sliding doors, cast-iron spiral staircase) offers excellent value for money, preserving many period features. Reception room. Open plan kitchen/dining room. Bathroom, separate: water closet. Self contained granny flat. Rear garden, Off-street parking. Near tube and British Rail stations. 24hr portorage. £229,500. As soon as possible - owners going abroad. Freehold.

**Eagle Wharf**, SE1. Large end-of-terrace one bedroom apartment in a listed Victorian house (hipped gabled roof, roof terrace, barrel protruding windows plus a hipped dormer window, swing doors, marble fireplace), close to Tower Bridge, with balcony overlooking the Central Piazza which will include shops, offices and restaurants. Through reception room. Open plan kitchen. Luxurious bathroom. Cloakroom. Alarm system. Secure parking space. Resident porter. £127, 000. Negotiable. Leasehold.

**Grosvenor Avenue, N5**. Set in a new housing estate this mid-terrace two-storey house overlooks a city park. Ideally placed for transport (buses, tube). 2 bedrooms, hallway, 2 bathrooms, through lounge, through fully fitted kitchen. Alarm system, secure parking space, FGCH (facilities, gas, cold and hot water), central heating. OIRO (offer in the region) £200,000, ono (or the nearest offer). Neg (negotiable). F/H (freehold). ASAP (as soon as possible). No chain (agents).

### WOODHOUSE REALTY

Immac refurb end of terr mid Vic listed prop in quiet cul-de-sac, period feats, 3 beds, thru recep, versatile draw rm, lge ftted conservatory style kit/bfast rm. Incl. ftted carpets/curtains, 35ft rear S/F secluded gdn. Nr shops/tube. FGCH, en-suite Lu Bath, sep WC. Fully double glazed, damp-proof cellarage, elks. Architect plans for loft conversion. Possible S/C granny flat. Convenient BR stn. Gge + OSP. OIRO £430K ono, neg, f/h. ASAP. No chain. Tel: 0483 509221

#### *Ex. 17. Translate.*

1. Продається унікальний пентхаус, найдорожча перероблена квартира в агенстві: вікна виходять на захід, дві бездоганні спальні, дві надзвичайні ванні кімнати з безпосереднім доступом зі спалень та мармуровими ванними, простора без перегородок вітальня зі скляним дахом та виходом на тераси на

даху. Пропозиція в районі £145,000 або найближча до цього пропозиція. Оренда на 99 років. Торг.

2. Офіційно зареєстрований, прикрашений, недавно відремонтований родинний будинок вікторіанського стилю, ідеально розташований у тихому куточку міста з гарним видом на річку. Відмінне капіталовкладення. Чудово збереглися архітектурні ознаки вікторіанського періоду. Чотири спальні плюс туалетний столик із дзеркалом та зона для одягання, дві розкішні повністю обладнані ванні кімнати, три просторі вітальні/приймальні, самотутній мармуровий камін, кручені чавунні сходи. Простора без перегородок кухня/їдальня оранжерейного типу, захищений від вологи підвал, гардероб. Є місце для добудови окремої квартири для літнього члена родини. На задньому дворі затишний ландшафтний зрілий приватний 50-футовий сад, що виходить на південь. Зручний доступ до надійного підземного гаража з приватним під'їздом. Недалеко станції метро та залізниця. Продаж у повне володіння. Щонайшвидше.

3. Продається простора квартира посередині вікторіанського будинку терасного типу, подвійні засклені рами, високий перший поверх, з усіма службами та зручностями: газ, холодна та гаряча вода, центральне опалення, система безпеки, охоронна сигналізація, консьєрж, що проживає у будинку, внутрішній дворик у саду, що є спільною власністю, домофон, підвальне приміщення. Окреме від вулиці місце для паркування. Універсальна простора студія, кухня/їдальня. оранжерейного типу, ванна, окремий туалет. Поблизу пляж на березі річки. Пропозиція в районі £56,000 або найближча до цього пропозиція. Оренда на 97 років. Торг.

4. Продається квартира на верхньому поверсі у переобладнаному під Едвардіанській терасний будинок складському приміщенні у тихому куточку міста: новий дах, слухове вікно, оранжерея, простора кухня/їдальня, ванна кімната, усі зручності, ліфтер, цілодобовий консьєрж, доступ до громадського саду. Власність для швидкого продажу - знижки. Пропозиція в районі £115,000 або найближча до цього пропозиція. Продаж у повне володіння. Торг.

**Ex. 18. Study the collocation table and then proceed to the task.**

Noun	Adjectives	Verb+word	Word +Noun	Preposition	Phrase
Accommodation	Comfortable, decent, suitable, poor, substandard, luxurious, temporary, permanent, private, rented, holiday, furnished, sheltered	Have, look for, secure, offer, provide with	Costs	In	
House	Comfortable, grand, magnificent, dream, dingy, ugly, shabby, dilapidated, gigantic, spacious, rambling, modest, tiny, four-	Live in, share, occupy, buy, rent, sell, let, reposess, move into/out of, set up, keep, build, demolish, knock down, maintain,	Agent, buyer, owner, tenant, renovation, painter,	At sb's/the, from-, to -, in	House-to-house

	bedroom(ed), eight-room(ed), half-timbered, red-brick, expensive, private, council, rented, empty, unoccupied, vacant, ancestral, communal	(re)decorate, refurbish, extend, be situated, stand, face, overlook, be worth, collapse, fall down, catch fire, bum down, come into view	design, plan(ning), prices, rents, purchase, mortgage, insurance, interior, number, plant, - warming		
Flat	Spacious, tiny, modest, cramped, cosy, next, (un)furnished, top-floor, downstairs, upstairs, unoccupied, privately-owned, rented, council, holiday	Have, own, rent, let, buy, sell, find, look for, live in, occupy, share, move into/out of, decorate, refurbish, lock, break into; be located, face, overlook		At a/the, in a/the	Convert/divide/make/ turn sth into flats
Rent	High, affordable, low, nominal, fair, rising, fixed, monthly, annual weekly, initial, back, unpaid, farm, ground, house	Be/fall due, go up, rise, increase, raise, reduce, pay, afford, be/fall behind with, owe, charge, collect, receive	Money, payment, increase, rise, allowance, subsidy/control, man	In- - for, - from, - on	Arrears on rent; a month's rent; the non-payment/payment of rent
Tenant	Current, existing, sitting; life, secure; joint; potential, prospective; business, council, local authority, private	Find, evict	farmer		Landlord and tenant (conflict between)

### *Translate using the collocation table*

1. **Помешкання, житло, притулок:** ціни на житло; (у)мебльоване помешкання; притулок; забезпечувати житлом; помешкання, що не відповідає вимогам до житла; постійне житло; пропонувати житло; у помешканні; пристойне житло; комфортабельне помешкання; додатне житло; житло на час відпустки; одержувати житло; мати розкішне житло; приватне житло; шукати тимчасове житло; орендоване помешкання.

2. **Дім, будинок:** входи; з'явився великий будинок; утримувати цей величний будинок; облаштовувати дім своєї мрії; жити в одному будинку з ...; мешканець будинку; у його комфортабельному будинку; жити в родовому будинку; займати цю огидну будівлю; ходити від одного дому до іншого; цей занедбаний будинок обвалився; в'їхати до восьмикімнатного будинку; напівзруйнований будинок; зносити будинки з червоної цегли; комунальний будинок спалахнув; купити будинок з чотирма спальнями; орендувати

приватний будинок; виїхати з темного, малесенького будиночка; вилучити величезний будинок; агент з продажу будинків; кредит на придбання скромного будинку; безладно збудований напівдерев'яний будинок; покупець будинку; підновляти будинки, що належать міській раді; конструкція будинку; розширяти будинок; внутрішнє обладнання дому; ремонт дому; страхування оселі; купівля будинку; нежилий будинок; незаселений будинок згорів; планування дому; орендна плата; будинок виходить вікнами на парк; будинок руйнується; ціни на житло; поліція опитала мешканців, переходячи від одного будинку до іншого.

3. **Квартира, помешкання:** ремонтувати малесеньку квартирку; винаймати квартиру на час відпустки; перебудувати офіс на квартири; в'їхати в квартиру на останньому поверсі; здавати скромне помешкання; зробити затишну квартиру; володіти квартирою на останньому поверсі; купувати тісну квартиру; квартира розташована на нижньому поверсі; ця приватна квартира виходить вікнами на площу; вломитися до незаселеного помешкання; мешкати у винайнятій квартирі; квартира, що належить міській владі.

4. **Орендна плата, квартирна плата, рента:** заборгованість з орендної плати; висока орендна плата за помешкання; справедлива плата; місячна орендна плата; підвищувати квартирну плату; несплачена рента; сплата оренди; квартирна плата, що підвищується; призначати орендну плату; орендна плата має бути сплачена; посильна квартирна плата; збирати орендну плату; субсидія на квартирну плату; підвищення орендної плати; отримувати фіксовану орендну плату; затримувати щорічну орендну плату; початкова орендна плата; орендна плата за землю; низька орендна плата за будинок; сплачувати щотижневу квартирну плату; зменшувати орендну плату; бути в змозі сплачувати орендну плату; контроль за орендною платою; прострочений платіж ренти, збирач ренти, номінальна орендна плата.

5. **Наймач, орендар, мешканець, власник нерухомості:** той, що орендує зараз; довічний орендар; співнаймач/співвласник; мешканці квартир, що належать місцевій владі; мешканці приватних квартир; наймач нежилого фонду; надійний орендар; потенційний орендар; висилати мешканця.

### **What is energy efficiency?**

The term 'energy efficiency' is used a lot these days. Labels on appliances, advertisements from energy companies and even promises from the government all use the phrase, but what does it really mean?

Something is more energy efficient if it lasts longer or works better than a traditional version of the same appliance, but uses the same amount of energy. Or even if it delivers the same performance as the traditional version, but uses less energy.

Ultimately, energy efficiency means doing more with less: that is, squeezing as much useful power out of as little energy as possible, and not letting any go to waste. Take an old-style light bulb, for example. These bulbs produced light, but wasted a lot of heat in the process. New energy-saving light bulbs create the same amount of light without creating wasted heat, and they use less energy in the first place.

The same principle applies to all kinds of energy-saving appliances. An energy-efficient fridge will use less energy than an old model but still keep your food cool, while an energy-efficient washing machine will get your clothes smelling fresh and clean without using as much power as an older version.

The term energy efficiency can also be used in a wider sense. Instead of focusing on the energy efficiency of a single item (such as an appliance), we can also look at the energy efficiency of whole buildings. If two buildings are supplied with the same amount of energy to create heat, the building that can generate and retain the most heat – rather than only creating a little heat and then losing it – is the more energy-efficient building.

Energy consumption has grown incredibly fast over the last few decades. We are in danger of using up the planet's natural resources, of destroying vital habitats and polluting the air we need to breathe.

Energy efficiency is a way of managing and limiting this growth in energy consumption, to save wildlife habitats, safeguard the planet, and make sure there is energy left for future generations.

Energy consumption is the amount of energy used up by a process, system or appliance – or by a country, person or business.

Energy conservation simply means using less energy, or even none at all.

Energy efficiency is playing an increasingly vital role in our lives, for three main reasons:

1. The environment

The more energy we use, the more carbon emissions are pumped into the atmosphere and the more our reserves of natural resources such as oil, coal and gas are depleted. We need to reduce our reliance on these energy sources, and one way to do that is to make sure we all use energy as efficiently as possible.

2. The economy

The global economy is based heavily on oil and gas, and as these resources dwindle their cost will increase, causing financial imbalances around the world and resulting in energy poverty in many areas of society.

3. Your bank balance!

Nobody wants to pay more than they have to for everyday necessities like heating and hot water, so it makes sense to be energy efficient. That way you fulfill your energy needs while paying as little as possible.

If you want to know how to be more energy efficient, the first place to start is to make sure your home and all your electrical appliances work as efficiently as possible. It isn't energy efficient to throw out all your old products and replace them with new, energy-saving items; instead, wait until they wear out and then replace them.

Here are a few ideas to get you started:

- Use less electricity. The first rule of saving electricity is: don't leave appliances on standby. Of course you need to leave your fridge and freezer on full time, and maybe your alarm system – and you may need to leave the TV or satellite box on to record your favourite programmes. But for practically everything else electrical: when you're not using them, switch them off at the wall.

- Rechargeable batteries can also be a good choice. Just make sure you get top-quality ones that will last and hold their charge. You could also invest in a ‘smart charger’ that can prevent your batteries from overcharging.

- If you want to make your laptop more energy efficient, you can get an Ecobutton. It plugs into a USB port, and flashes to remind you to press if you decide to stop using your computer for a while. It can then put your computer into its most efficient energy-saving mode. When you log on again, you can see on screen how much money and CO2 you’ve saved.

- Switch to energy-saving light bulbs. Energy-efficient bulbs use up to 80% less electricity than traditional light bulbs and can keep going for ten times as long. Just one energy-saving light bulb could save you approximately £2.50 per year – and this could rise to as much as £6 for brighter bulbs or any you leave on for several hours each day. So if you replace each of the standard bulbs in your home (when they stop working) with energy-saving bulbs, you could reduce your annual energy bill by as much as £37 and cut 135 kg of CO2 off your carbon footprint. That’s about the equivalent of taking a train from London to Glasgow and back, or using nearly 43 litres of petrol.

- Cut down the cost of heating your home. Hot water and heating make up around four-fifths of most fuel bills in the UK, so increasing the energy efficiency of your heating system can make a big difference to your utility bills. If you’ve had your boiler for more than 15 years, it’s probably time to consider upgrading to a newer, more eco-friendly model. You could reduce your heating bills by up to a quarter if you replace a creaky old G-rated boiler with a new A-rated condensing boiler – as long as you use it wisely and control it effectively. Make sure your thermostat and boiler are communicating properly, fit individual thermostats on radiators, and get a control system that lets you switch off the heating remotely if necessary.

- Insulate your roof and walls, install double glazing, stop draughts, update your heating system and take a bit more care about keeping doors and windows shut. You could also cut up to 10% off your heating bills if you lower your heating thermostat by 1°C and put on an extra jumper or fleece instead. There’s no need to have the thermostat on a hot water tank any higher than 60°C/140°F.

# Maritime

## HOW MERCHANT SHIPS OPERATE

Merchant ships are designed to carry cargo. Some are also designed to carry passengers. Nowadays, most merchant ships are built to carry cargo, but a few still carry passengers. Merchant vessels can operate in the following three basic ways.

They can operate as liners. These are employed on regular routes on a fixed timetable. A list of their arrival and departure dates is published in advance and they sail whether full or not. Liners can be classed as either **deep-sea liners** or **short-sea liners**. The former carry mainly containerized cargo across the oceans of the world; the latter carry containerized or conventional cargo on shorter routes. **Ferries** are also classed as liners. These offer a daily or weekly service for passengers and vehicles across channels and narrow seas. A few ships are still employed as **passenger liners**. They not only carry passengers but also some cargo on routes from Europe to North America and to the Far East. Nowadays the passenger trade is very small and passenger liners usually operate as **cruise ships** for part of the year.

Merchant ships also operate as **tramps**. These vessels do not sail on regular routes or keep to a fixed timetable, but are employed where there is cargo for them to carry. Tramps can be classed as deep-sea tramps or short-sea tramps. A number are classed as **coasters**. These ply on coastal routes and up rivers to inland ports. The traditional tramp cargoes are dry bulk cargoes, but some are designed to carry general cargoes. A large number of merchant ships operate as specialized vessels. These are designed to carry a particular type of cargo. There are several types of specialized vessel. The most common are **oil tankers**. They are owned by the major oil companies or by independent operators. Two other types of liquid bulk carrier of growing importance are **chemical carriers** and **liquefied natural gas (LNG) carriers**.

## TYPES OF MERCHANT SHIPS

Merchant ships can be classified according to what they carry. Most are designed to carry cargo, but a few still carry passengers.

Cargo ships can be divided into two basic types. One type carries dry cargo, the other carries liquid cargo; however, an **OBO ship (ore-bulk-oil carrier)** is designed to carry both. A traditional dry cargo ship is the multi-deck vessel. Her holds are divided horizontally by one or two 'tween decks, because these make stowage of individual packages easier.

Dry bulk cargo is carried in bulk carriers. These do not have 'tween decks as cargo is carried loose. The most modern type of dry cargo carrier is the **container ship**. They carry containers of standard dimensions, consequently stowage is easier. Fruit, meat and dairy products are carried in **refrigerated ships**. Oil tankers are the most common type of liquid cargo carrier. They are often very large, because huge quantities of oil need to be transported and one large vessel is more economical to operate than two smaller ones. Two other types of liquid bulk carrier of growing

importance are the liquefied natural gas (LNG) carrier and the chemical carrier, although chemicals can also be carried in drums in general cargo ships.

In comparison with cargo vessels, passenger ships are fewer in number and type. The traditional passenger ship is the passenger liner; however, many carry cargo as well. Nowadays their number has been greatly reduced, because of competition from air transport. Another type of passenger vessel is the cruise ship. These are similar in appearance to passenger liners. The most common type of passenger vessel is the ferry. Many of them are also designed to carry vehicles; therefore these have doors at the stern or bows.

### **Merchant ship types**

<b>Cargo ships</b>		<b>Passenger ships</b>
<i>Dry cargo ships</i>	<i>Liquid cargo ships</i>	<i>Passenger liners</i>
Multi-deck vessels	Oil tankers	Cruise ships
Bulk carrier	LNG carriers	Ferries
Container ships	Chemical carriers	
Refrigerated ships		

Merchant ships can be designed as cargo ships or passenger ships. Cargo ships can be divided into dry cargo ships and liquid cargo ships. Dry cargo ships include multi-deck vessels, bulk carriers, container ships and refrigerated ships. Oil tankers, LNG carriers, and chemical carriers are examples of liquid cargo carriers. Three types of passenger ship are passenger liners, cruise ships and ferries.

***Ex. 1. Translate the following types of vessels.***

An ice-breaker, a dry cargo vessel, a bulker (bulk carrier), a tanker, a drill ship, a reefer, a dredger, a container ship, a ferry, a gas-carrier, a timber-carrier, a salvage ship, a tug, a hovercraft, a cable ship, a trawler, a warship, a passenger liner, a barge carrier, a general purpose ship, a fruit ship, a sailing boat, a yacht, a steamer (steam ship), a motor ship, an aircraft carrier, a hydrofoil boat, a catamaran.

***Ex. 2. Match the types of the ships with their definitions.***

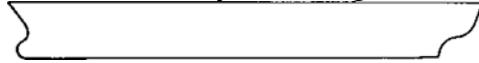
- |                            |  |
|----------------------------|--|
| 1. a tanker                | a. carries gas                                 |
| 2. a reefer                | b. gives assistance to the ships in distress   |
| 3. a salvage ship          | c. carries perishable cargoes                  |
| 4. a tug                   | d. carries timber                              |
| 5. an ice-breaker          | e. conducts ships through the ice              |
| 6. a passenger liner       | f. carries passengers                          |
| 7. a gas-carrier           | g. carries general cargo                       |
| 8. a fruit ship            | h. assists ships in entering and leaving ports |
| 9. a ferry                 | i. carries barges                              |
| 10. a barge carrier        | j. carries oil                                 |
| 11. a general purpose ship | k. carries passengers and cars                 |
| 12. a timber-carrier       | l. carries fruit                               |

# SHIP HANDLING

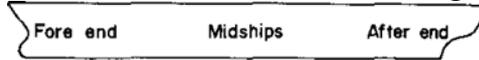
## Ship parts

### Terms relating to a ship's hull

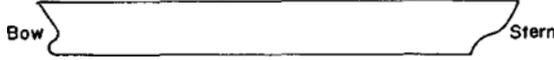
The main body of a ship is called **the hull**.



The hull is divided into three parts.

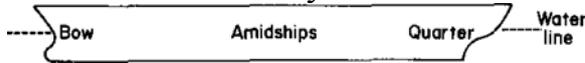


The foremost part is called **the bow** and the rearmost part is called **the stern**.



### Terms relating to the hull surface

The hull surface may be referred to using the following terms.



When standing in a ship and facing the bow, the left-hand side is called **the port** side and the right-hand side is called **the starboard** side. These can be added to the above terms (e.g. the port bow, the starboard quarter, the port side amidships.)

The side of the hull can be referred to more accurately by using the side, the part and the waterline. (e.g. the ship was hit on the port bow one metre below the waterline).

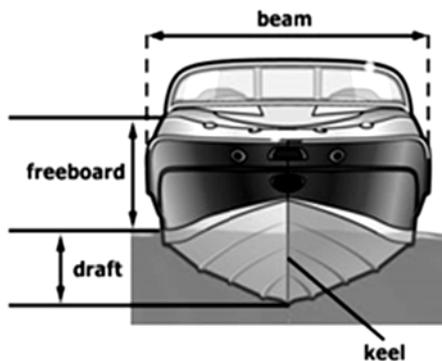
The fore end of a ship is known as **forward**.

The after end of a ship is known as **aft**.

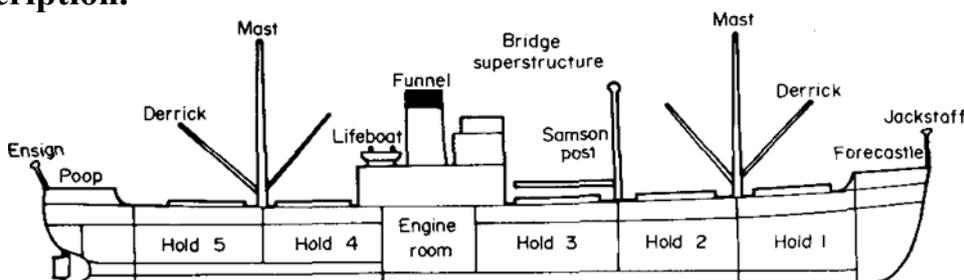
The midships part is known as **amidships**.

The extreme fore end is known as **right forward**.

The extreme after end is known as **right aft**.



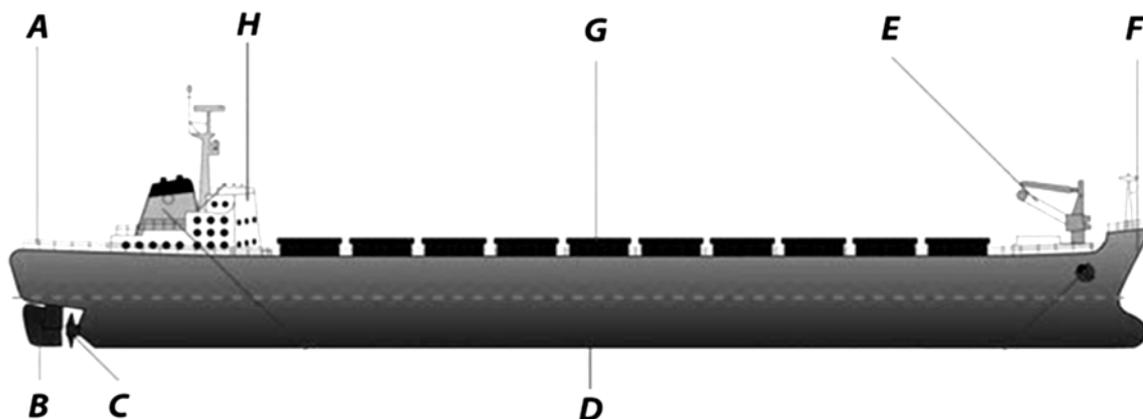
Now study this diagram of a traditional general cargo ship and read the description.



A traditional general cargo ship has her **engine room** and **bridge** superstructure amidships. She may have three **holds** forward of the bridge and two holds aft of the bridge. Forward of No.1 hold is the **forecastle** and right forward is the **jackstaff**. **Derricks** are supported by **masts** and **samson posts**. They are stowed fore and aft when the ship is at sea. There are two **lifeboats**, one on the port side amidships, another on the starboard side amidships, abaft the **funnel**. The **poop** is situated aft and there is an **ensign** staff right aft.

*Ex. 3. Use these words to name the parts of the ship (a–h) and name any other parts you know.*

1) stern, 2) keel, 3) rudder, 4) bows, 5) davit, 6) container, 7) bridge, 8) propeller

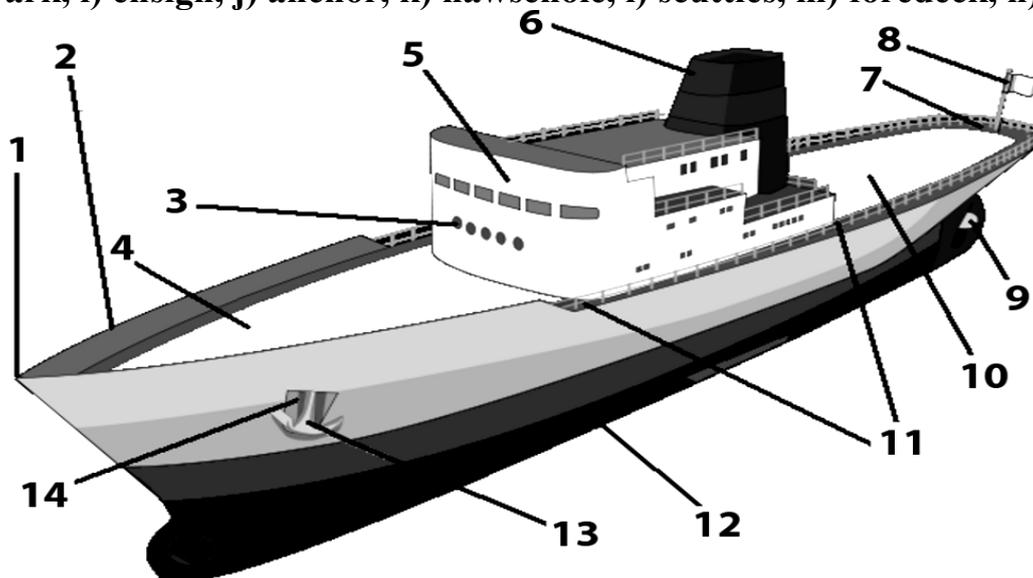


*Ex. 4. Write these words onto the correct places in the diagram above.*

1) port side, 2) starboard side, 3) dead astern, 4) abaft, 5) after end, 6) forward end

*Ex. 5. Label the parts of this ship by writing the correct numbers next to the words in the list.*

a) funnel, b) propeller, c) bow, d) bridge, e) stern, f) railings, g) after deck, h) bulwark, i) ensign, j) anchor, k) hawsehole, l) scuttles, m) foredeck, n) keel



**Ex. 6. Match words from the list above with correct definitions.**

Example: *scuttles*: A small opening or hatch

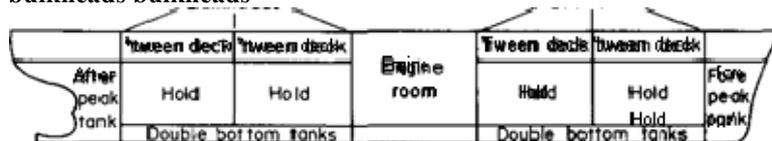
- 1) ..... : The point of a ship that is most forward
- 2) ..... : A weight that is cast overboard to hold a ship fast
- 3) ..... : The deck towards the stern
- 4) ..... : A national flag
- 5) ..... : An opening in the bows for a cable
- 6) ..... : A guard around a deck
- 7) ..... : A structure running from bow to stern
- 8) ..... : The part of a ship's side above the deck

**Ex. 7. Match the words on the left with definitions on the right.**

- |                   |                                 |
|-------------------|---------------------------------|
| 1. bows           | a. towards the front            |
| 2. stern          | b. opening in the deck          |
| 3. port side      | c. right side                   |
| 4. starboard side | d. a projection below the hull  |
| 5. aft            | e. living area                  |
| 6. forward        | f. command station              |
| 7. hull           | g. machine to move heavy things |
| 8. keel           | h. point that is most forward   |
| 9. bridge         | i. kitchen                      |
| 10. hatch way     | j. the rear                     |
| 11. galley        | k. towards the rear             |
| 12. windlass      | l. body of a ship               |
| 13. quarters      | m. left side                    |

The hull is divided up into a number of watertight compartments by decks and **bulkheads**. Bulkheads are vertical steel walls going across the ship and along. Decks divide the hull horizontally. Those dividing up cargo spaces are known as '**tween decks**'. The hull contains the **engine room**, cargo space and a number of tanks. In dry cargo ships the cargo space is divided into holds, in liquid cargo ships it is divided into tanks. At the fore end of the hull are the **fore peak tanks** and at the after end are the **after peak tanks**. They are used for fresh water and water ballast. The space between the holds and the bottom of the hull contains **double bottom tanks**. These are used for ballast water and fuel. All permanent housing above the main deck is known as **superstructure**.

bulkheads bulkheads



**Ex. 8. Complete this description of a modern cargo ship:**

The hull is divided up into a number of watertight by decks and steel ..... . At the fore and after ends of the hull are the ..... tanks and the

..... tanks. The ..... is situated at the after end of the ship to leave more room for cargo. The cargo space is divided up into..... . These also have ..... . Above the main deck is the ..... . At the fore end is the ..... . At the after end the ..... superstructure and the ..... are combined.

**Useful vocabulary (places/positions):**

Abeam	At right angles to the ship but not on the ship
Aboard	On the ship
Above deck	On the deck but not over it
Abreast	By the side of the ship
Aft	Toward the stern
Ahead	In a forward direction
Alee	Away from the direction of the wind
Aloft	Above the deck
Amidships	Towards the centre of the ship
Astern	In the rear of the ship
Below	Under the deck
Dead ahead	Directly ahead
Fore-and-aft	In a line parallel to the ship
Headway	The forward motion of the ship
Inboard	Inside the ship
Lee	the side away from the wind
Leeward	The direction away from the wind
Leeway	The sideways movement of the boat caused by either wind or current.
Midship	Mid way between bow and stern
Overboard	Over the side of the ship
Stem	The forward most part of the bow

**CARGO HANDLING**

**Ex. 9. Check you know these words.**

- |                  |           |
|------------------|-----------|
| a) Davits        | e) Gantry |
| b) Containers    | f) Hold   |
| c) Quay          | g) Hatch  |
| d) Marine debris | h) Pier   |

**Ex. 10. Choose the best definitions from a, b and c:**

- 1) Bill of lading
  - a) A document with information about a cargo
  - b) A charge for transporting cargo
  - c) A destination
- 2) Warehouse
  - a) Area for storing cargo on a ship
  - b) Shop
  - c) Building for storage

- 3) Quay
  - a) Place for unloading ships
  - b) A type of bridge
  - c) A platform over the water
- 4) Crane
  - a) Equipment for lifting and lowering heavy things
  - b) Machine for moving cargo to a storage area
  - c) A type of package
- 5) Stevedore
  - a) A man's name
  - b) A docker
  - c) A ship's crewman
- 6) Sack
  - a) A type of box
  - b) A room
  - c) A type of bag
- 7) Pallet
  - a) A portable platform for cargo
  - b) A type of box
  - c) A container
- 8) Fork lift truck
  - a) Long distance transporter
  - b) Vehicle for moving pallets
  - c) A lift on a truck
- 9) Hold
  - a) A lift
  - b) Crew's quarters
  - c) Area for storing cargo
- 10) Hatch
  - a) a room on board
  - b) a door in the deck
  - c) a ladder

**Ex. 11. Use the words above (1–10) to complete these sentences.**

- 1) Open the escape ..... and get out!
- 2) The ..... driver is moving the cargo to a storage area.
- 3) Put all the boxes onto a .....
- 4) Embark at ..... number thirty one.
- 5) The delivery date on the ..... is the 5th of November.
- 6) My father was a ..... and I am one too.
- 7) The ship's ..... is clean and ready for loading.
- 8) We must use a ..... to lift the heavy box.
- 9) Each ..... of rice weighs 200 kilos.
- 10) Take the cargo from the ship and store it in ..... number three.

## Types of cargo

Merchant ships are designed to carry cargo. This cargo may be divided into two basic types: bulk cargo and general cargo. Bulk cargo consists of a single commodity. This commodity is usually carried loose. General cargo consists of a variety of goods. These goods are packed separately. Bulk cargo is carried in specially designed vessels, therefore stowage presents few problems.)With general cargo stowage presents many problems, because each item has its own type of packaging and characteristics.

Bulk cargo can be divided into liquid or dry bulk cargo. Liquid bulk cargo is carried in tankers. Most tankers are designed to carry crude oil or its refined products, such as fuel oils. The oil is carried in tanks. These are connected by a system of pipes to a central manifold. The cargo is pumped on board at the loading port by shore pumps. At the discharging port the ship pumps the oil ashore using her own pumps. Dry bulk cargo is carried in bulk carriers. The cargo is carried in self-trimming holds. Dry bulk cargo includes grain, iron-ore, coal and sugar. It is loaded automatically by buckets on a conveyor belt system or through large tubes. Although the cargo stows itself, it is important to maintain the ship's stability and to make sure that the cargo will not move during the voyage. Dry bulk cargo is unloaded by huge grabs on cranes or by giant suction tubes.

General cargo can be divided into containerized, non-containerized and refrigerated cargo. Non-containerized cargo presents most stowage problems, because each commodity has its own type of packaging and characteristics. Goods may be in bags, bales, cases or steel drums. Individual pieces of machinery may not be packaged at all. Some cargoes such as tobacco and rubber have a strong odour and will taint delicate cargoes such as tea and rice. Other cargoes such as cement and fertilizers are dusty and leave a residue behind them. Heavy cargoes must not be stowed on top of fragile cargoes. This can cause problems if the heavy cargo has to come out first. General cargo is loaded by cranes and the ship's own derricks. Non-containerized cargo is carried in multi-deck vessels. To help with the problem of stowage many types of general cargo are now being put into containers of standard dimensions. They are carried in specially designed container ships and loaded and unloaded by special cranes from the quayside. The containers are stowed both above and below deck. Perishable cargoes such as meat, fruit and dairy produce are carried in ships with refrigerated holds. These holds are designed to keep food at the correct temperature. Some food such as fish is frozen solid, other food such as fruit is only chilled. Mutton and lamb are stowed fore and aft, beef when chilled is hung on hooks. Eggs and butter are easily tainted. Fruit needs good ventilation. Refrigerated cargo is loaded by cranes and derricks.

Now answer these questions.

- (a) What is bulk cargo?
- (b) What is general cargo?
- (c) Why is bulk cargo easier to stow than general cargo?
- (d) What type of pumps may tankers have for unloading oil?
- (e) What type of cargoes will taint delicate cargoes?
- (f) Why are general cargoes now being put into containers?

- (g) What are the dimensions of a container?
- (h) What sort of cargo is carried in refrigerated holds?

**Ex. 12. Match the cargo types with their definitions.**

- |                |                             |
|----------------|-----------------------------|
| 1. perishable  | a. burns easily             |
| 2. toxic       | b. easily broken or damaged |
| 3. household   | c. farm animals             |
| 4. expandable  | d. has a short life         |
| 5. explosive   | e. poisonous                |
| 6. inflammable | f. increases in size        |
| 7. livestock   | g. for domestic use         |
| 8. fragile     | h. unstable                 |

**Ex. 13. Put the following goods under the correct cargo type (some goods can be more than one cargo type).**

**medical supplies • fine art • eggs • bananas • frozen fish  
washing machines • ceramics • gasoline • race horses • nuclear waste  
cylinders of oxygen • sugar cane • carpets**

Perishable.....

.....

Toxic.....

.....

Household.....

.....

Inflammable.....

.....

Fragile.....

.....

Livestock.....

.....

**THE ORGANIZATION OF A SHIP'S CREW**

**MASTER**

<b>Deck Department</b>	<b>Engine Department</b>	<b>Catering Department</b>	<b>Radio Department</b>
<u><i>Officers</i></u>	<u><i>Officers</i></u>	<u><i>Officer</i></u>	<u><i>Officer(s)</i></u>
<i>Chief Officer</i>	<i>Chief Engineer</i>	<i>Chief Steward</i>	<i>Chief Radio Officer</i>
<i>Second Officer</i>	<i>Second Engineer</i>		<i>(Second Radio</i>
<i>Third Officer</i>	<i>Third Engineer</i>		<i>Officer)</i>
<i>(Fourth Officer)</i>	<i>Fourth Engineer</i>		<i>(Third Radio Officer)</i>
<i>(Cadets)</i>	<i>(Fifth Engineer)</i>		
	<i>(Electrical Officer)</i>		
	<i>(Cadets)</i>		

<b>Galley Section</b>		<b>Saloon Section</b>	
<u>Petty Officers</u>	<u>Petty Officers</u>	<u>Petty Officers</u>	
<i>Boatswain</i>	<i>Storekeeper</i>	<i>Ship's Cook</i>	<i>Second Steward</i>
<i>Carpenter</i>	<i>Donkeyman</i>		
<i>Pumpman (Tkrs)</i>			
<u>Ratings</u>	<u>Ratings</u>	<u>Ratings</u>	
<i>AB</i>	<i>Firemen</i>	<i>Cooks</i>	<i>Stewards</i>
<i>EDH</i>	<i>Greasers</i>	<i>Junior Ratings</i>	<i>Junior Ratings</i>
<i>OS</i>			

There is a lot of complex equipment on board modern ships so it is necessary to have skilled crews to operate the ships. The organization of the crew of a cargo ship is changing, but it is still customary to find Deck, Engine, Catering and Radio Departments (or at least two departments: the Deck Department and the Engine Department) in ships of a reasonable size. Each department is made up of a varied number of **officers**, **petty officers** and **ratings**.

The Deck Department includes **Navigators**, a **Boatswain (Bosun)**, **sailors** and a **Doctor**. We call navigators according to their rank on board ship: **the Master**, **the Chief Officer (First Mate)**, **the Second Officer (Second Mate)**, **the Third Officer (Third Mate)**, **the Fourth Officer (Fourth Mate)**.

The man in charge of a ship is the Master. He is responsible for the ship, her cargo and the safety of the crew. He must be well qualified and an experienced navigator. Although his correct title is the Master, he is addressed as 'Captain'.

The Chief Officer, is the Master's chief officer and head of the Deck Department. He must be ready to replace the Master and perform his duties. He is assisted by a Second Officer, a Third Officer, and sometimes a Fourth Officer. Several companies employ a First Officer as well as a Chief Officer. The Deck Department also includes a Boatswain and a **Carpenter**, both petty officers, and a number of ratings. These are made up of **Able Seamen (AB)**, **Ordinary Seamen (OS)** and a middle grade known as **Efficient Deck Hands (EDH)**. There are other grades of seamen. On some ships **Navigating Cadets** are carried for training purposes. All the Navigators must keep watch on the navigating bridge. They may not leave it when on watch. The navigators relieve each other of watch every four hours. Every navigator must know how to define the ship's position, plot her course on the chart and take bearings.

A Boatswain and sailors must keep the ship's hull, holds and tackle in good condition.

Ordinary Seamen work in all departments: deck, engineering and catering. They help with docking and undocking and sometimes stand watch. Most of the time Ordinary Seamen maintain the vessel; chipping, scraping and painting. They also clean the vessel's interior and help in the galley. Living conditions for Ordinary Seamen are different from ship to ship. On large ships Ordinary Seamen have private rooms and share bathrooms. Smaller ships have multiple berthing areas. With experience an Ordinary Seaman can get promotion to Able Seaman.

**The Chief Engineer** is head of the Engine Department. He is assisted by a **Second, Third, Fourth** and sometimes **Fifth Engineer**. An **Electrical Officer** may also be carried. The engine room petty officers are the **Storekeeper** and **Donkeyman**. On tankers there is also a **Pumpman**. He is also a petty officer. The engine room ratings are **Motormen (Firemen and Greasers (Marine Oilers))**. All of them keep watch in the engine-room and must maintain and repair its equipment. There may also be **Engineer Cadets**.

The Catering Department is under **the Chief Steward**. It is divided into a saloon and galley section. The former is headed by **the Second Steward**, the latter by **the Ship's Cook**. They are both usually petty officers. They are assisted by several stewards and cooks, and by a number of junior ratings.

The Radio Department often consists of only one man: **the Radio Officer**. On ships where continuous radio watches are kept there may be three radio officers: a **Chief, Second** and **Third**. Radio Officers keep watch in the radio-room and are responsible for radio-communications.

Only well-qualified sailors can perform their duties properly that's why the crews' training is very important.

### **The Deck Department**

The Deck Department is responsible for navigating the ship safely and economically from port to port. The Master is an experienced navigator and usually works out the best course. The Second Officer is responsible to the Master for keeping the ship on course and for looking after all the equipment used for navigation. It is also the job of the Deck Department to see that the cargo is stowed properly in the holds and kept in good condition during the voyage. The stowage of cargo is the responsibility of the Chief Officer. He is helped by the Second and Third Officers. In addition, when the ship is not fully loaded, the First Mate must see that the holds are cleaned and prepared for their next cargo. In a tanker the cargo tanks are washed out during ballast passages and freed of gas. At sea, much of the Deck Department's time is spent maintaining the ship and her equipment in good condition. This means constant cleaning, painting and repair work. This is done by ratings under the supervision of the Boatswain (Bosun). A programme of maintenance for each day is worked out by the Chief Officer. He also looks after the general day-to-day running of the department and deals with any problems.

The Third Officer is in charge of the life-saving equipment. The different appliances must be complete and in good working order. The Boatswain and the Carpenter are directly responsible to the Chief Officer. The Bosun sees that his orders and those of other deck officers are carried out by the crew. He is a man with a lot of knowledge and practical experience in seamanship. The Carpenter is usually a qualified shipwright. He no longer works only with wood as his name suggests. His most important regular job is to sound the tanks and bilges in order to check the depths of liquid in them. He also operates the windlass, when the anchors are being raised or lowered. The Deck Department is also responsible for keeping watches. An officer is always on watch on the bridge. He is the Master's representative and

answers to him for the safety of the ship during his watch. In ships where a Chief Mate and a First Mate are carried, the First Mate is the watchkeeping officer.

**Ex 14. Complete these sentences with one word from the passage:**

- (a) The Second Officer is the ..... officer, therefore he must be good at calculating the ship's position and course.
- (b) The careful ..... of cargo is important in order to keep it safe and easily unloaded.
- (c) Cleaning, painting and repair work is known as .....
- (d) Life-saving equipment is the responsibility of the ..... Officer.
- (e) On passenger liners there are always two officers on ..... on the bridge.
- (f) It is the job of the Carpenter to ..... the tanks and bilges.

**Ex 15. Write out five true statements from this table.**

The	Chief Officer	is responsible for	navigation
	Second Officer		keeping the hull in good condition
	Third Officer		supervising the crew's work
	Boatswain		cargo and maintenance
	OS		the lifesaving equipment

**Ex. 16. Navigation. Match each term on the left with a definition.**

- |                     |  |
|---------------------|--|
| 1. intended course  | a. 0 degrees longitude                                 |
| 2. fix              | b. direction actually travelled                        |
| 3. dead reckoning   | c. intersection of 2 Lines of Position                 |
| 4. prime meridian   | d. direction you want to go                            |
| 5. bearing          | e. North, South, East, West                            |
| 6. course made good | f. where 2 Lines of Position meet                      |
| 7. drift            | g. using course and speed to estimate present position |
| 8. intersection     | h. compass reading                                     |
| 9. cardinal points  | i. movement because of current, winds etc.             |
| 10. nautical charts | j. maps of sea routes                                  |

**Ex. 17. Vocabulary list. Check you know these words.**

**nouns**

- wreck
- buoy
- shipwright
- caution
- bearing
- heading
- wide berth
- knot
- vicinity
- tackle
- light house
- log-book

**verbs**

- (to) flash
- (to) plot (the course)
- (to) fix
- (to) drift
- (to) keep/stay (watch)
- (to) intersect
- (to) ply
- (to) lubricate
- (to) overhaul

## The Engine Department

The Chief Engineer is responsible to the Master for the Engine Department. He also looks after the day-to-day running of the department. The Second Engineer is responsible for the maintenance of the engine room, deck and other machinery. Engine-room watchkeeping duties are the responsibility of the Second, Third and Fourth Engineers. The Second Engineer keeps the morning and evening watches; the Third Engineer keeps the middle and afternoon watches; the Fourth Engineer keeps the forenoon and first watches. The repair and maintenance of all electrical equipment is the responsibility of the Electrical Officer. The Storekeeper and the Donkeyman are responsible to the Chief Engineer. The Storekeeper is responsible for the storeroom. The Donkeyman is responsible for lubrication. On tankers, the Pumpman is responsible to the Chief Officer for loading and unloading oil and water ballast. Of the engine-room ratings, Greasers are responsible for general oiling and cleaning duties, and Firemen are responsible for looking after the boilers.

**Ex. 18. Sort out this list of engine room personnel into order of seniority.**

Greasers, Electrical Officer, Storekeeper, Third Engineer, Pumpman (on tankers), Chief Engineer, Donkeyman, Fourth Engineer, Engineer cadets, Firemen, Second Engineer

**Ex.19. Match the following seafarers with their responsibilities on board the ships.**

- |                           |   |
|---------------------------|---|
| 1. the Master             | a. the health of the crew members   |
| 2. the Chief Mate         | b. the efficient running of the Engine Department                           |
| 3. the Second Mate        | c. the crew's work  |
| 4. the Third Mate         | d. keeping motors and generators in good condition                          |
| 5. the Chief Engineer     | e. navigation   |
| 6. the Radio Officer      | f. the safety of the ship, cargo and crew                                   |
| 7. the Boatswain          | g. the radio-communication  |
| 8. the ship's Doctor      | h. the maintenance and repairs of the equipment                             |
| 9. the Electrical Officer | i. responsible to the Master for the Deck Department, cargo and maintenance |
| 10. the Motormen          | j. preparation food   |
| 11. the Carpenter         | k. the loading and unloading of oil   |
| 12. the Pumpman           | l. responsible for the life-saving equipment                                |
| 13. the Chief Steward     | m. the sounding of tanks and bilges   |
| 14. the Ship's Cook       | n. responsible to the Master for the Catering Department                    |

**Ex. 20. What might the crew member be doing when Navigating Cadets visited the ship?**

- |                       |  |
|-----------------------|--|
| 1. the Master         | a. preparing for the departure           |
| 2. the Chief Mate     | b. preparing dinner                      |
| 3. the Second Mate    | c. overhauling the main engine           |
| 4. the Third Mate     | d. regulating the navigational equipment |
| 5. the Chief Engineer | e. painting the hull                     |

- |                            |  |
|----------------------------|--|
| 6. the Second Engineer     | f. checking the lifesaving equipment     |
| 7. the Third Engineer      | g. washing and scrubbing the deck        |
| 8. the Motormen            | h. talking to the pilot                  |
| 9. the Cook                | i. unloading the cargo                   |
| 10. the Pumpman            | j. plotting the course                   |
| 11. the Electrical Officer | k. lubricating the pumps                 |
| 12. the Radio Officer      | l. giving commands                       |
| 13. the Radio Operator     | m. making entries into the log-book      |
| 14. the sailors            | n. tuning the radio devices              |
| 15. the Boatswain          | o. repairing the air-conditioning system |

**Ex. 21. Who might say the following?**

1. I was in charge of a ship for many years but now I work ashore. People still call me ‘Captain’.
2. I do general maintenance on board ship. I chip, scrape and paint the hull and decks and keep lifeboats in good condition.
3. I work under orders from the Chief and under me there are juniors who do daily maintenance of important equipment.
4. My job is safety officer and I have responsibility for the ship eight hours a day.
5. I work onboard with circuits, generators, switches and coils.
6. I order and store supplies. I am concerned with galley hygiene and the preparation of food.

**Ex. 22. Read the following story and discuss the question at the end. Give reasons for your answer.**

**Overcrowded Lifeboat**

A ship sank after hitting an iceberg. There were 30 survivors and they got into a lifeboat that was made for only seven people. On the second day the captain could see a storm coming. He knew that the lifeboat was too heavy to face the storm.

Everyone would probably die. The captain took out a gun and forced fifteen people over the side. He chose the weakest people because he needed strong people to row the lifeboat. All 15 drowned but after several days of hard rowing the survivors were rescued.

Question: Is the captain guilty of murder?

**ORDERS ON A SHIP**

**Ex. 23. Match the orders (left) with the meanings (right).**

- |                              |  |
|------------------------------|--|
| 1. ‘Full ahead both’         | a. Stay on the heading given earlier         |
| 2. ‘Dead slow astern’        | b. Hold rudder in the fore and aft position  |
| 3. ‘Stand by engine’         | c. Reduce the amount of rudder to 20°        |
| 4. ‘Bow thrust half to port’ | d. Reverse very slowly                       |
| 5. ‘Midships’                | e. Maximum speed for two engines             |
| 6. ‘Ease to twenty’          | f. Get ready                                 |
| 7. ‘Steady as she goes’      | g. Move the ship’s head to port on 50% power |

**Which of them engine orders and which are steering orders? Add some more of them to the list.**

### **MARITIME EMERGENCIES**

**Ex. 24. A maritime emergency is any serious distress to a vessel or her crew. Match each verb (left) with a definition (right).**

**A.**

- |                 |                     |
|-----------------|---------------------|
| 1. to capsize   | a. cannot be seen   |
| 2. to collide   | b. fill with water  |
| 3. to sink      | c. turn over        |
| 4. to swamp     | d. go down slowly   |
| 5. to settle    | e. smash together   |
| 6. to drift     | f. go without power |
| 7. to disappear | g. go under         |

**B.**

- |                      |                                       |
|----------------------|---------------------------------------|
| 1. (to) keep clear   | a. stop working                       |
| 2. (to) stall        | b. tie a line to                      |
| 3. (to) get underway | c. crash into                         |
| 4. (to) jettison     | d. wait                               |
| 5. (to) weigh        | e. organise and store equipment/cargo |
| 6. (to) stow         | f. throw overboard                    |
| 7. (to) break down   | g. blow up                            |
| 8. (to) collide      | h. lose power                         |
| 9. (to) explode      | i. raise                              |
| 10. (to) make fast   | j. start                              |
| 11. (to) stand by    | k. stay away                          |

**Use the correct verb from the list B in the following sentences:**

- 1) Please ..... on VHF channel 16.
- 2) Prepare to ..... anchor and begin the voyage.
- 3) Keep above 3,300 rpm and do not ..... the engine.
- 4) ..... all equipment carefully and safely.
- 5) ..... the dinghy and climb on board when safe to do so.
- 6) Be very careful and ..... of the sinking vessel.
- 7) You must ..... the cargo to stay afloat.
- 8) I want to ..... at 08.00 UTC.

**Other useful English verbs in regular use by mariners. Translate them.**

- (to) abandon
- (to) avoid
- (to) break
- (to) clear (move away from)
- (to) damage
- (to) log (record)
- (to) deviate

- (to) embark
- (to) exceed
- (to) ground
- (to) knock (hit)
- (to) lay up (wait / idle)
- (to) leave off (not include)
- (to) load
- (to) loop (travel and return to the same point)
- (to) make good (repair)
- (to) mis-stow (stow wrongly) over-stow (too much)
- (to) miss
- (to) oblige (must)
- (to) shift (move something heavy)
- (to) leak
- (to) imperil (put into danger)
- (to) pollute
- (to) consign
- (to) release (allow cargo to be collected)
- (to) salvage
- (to) scrape the bottom (clean the hull)
- (to) secure (make safe)
- (to) shuttle (move containers from one place to another)
- (to) slam (impact of water on the bows)
- (to) stage (put a container in place)
- (to) strip
- (to) substitute (replace)
- (to) terminate
- (to) tow
- (to) warp (use cables and ropes to manoeuvre ship)

**Ex. 25. Use verbs from the box and put them in the correct places in the correct form in the following sentences.**

**be • require • collide • weigh • spot • get underway • anchor • break down • keep**

- 1) I ..... one mile from buoy number three in fifteen minutes.
- 2) Can you ..... the large red container?
- 3) Keep clear or you ..... with the barge.
- 4) I ..... assistance shortly.
- 5) We ..... anchor and ..... yesterday.
- 6) The tanker hit a refrigerated vessel which had ..... at the entrance to the North Channel.
- 7) I ..... a sharp look out and saw the lighthouse on the port side.
- 8) My engine ..... one hour ago.

**Ex. 26. Study the three emergency code words below. What do they mean? Match them with: urgent call, distress call and safety call.**

- 1) Mayday, Mayday, Mayday
- 2) Pan-pan, Pan-pan, Pan-pan
- 3) Sécurité, Sécurité, Sécurité

- What colour are signals distress?
- Who do you send a Mayday call to?
  - a) the coastguard
  - b) the nearest ship
  - c) Everyone

**Ex. 27. You have to send a radio message to report the emergencies 1–10. Which emergency code word (1–3 above) do you use for each message?**

- 1) A crew member badly injures his hand.
- 2) You need to give a storm warning.
- 3) There is thick fog in your sea area.
- 4) A crew member falls into the sea.
- 5) A diver has the bends (decompression sickness).
- 6) There is oil spillage from your vessel.
- 7) Your vessel has a little damage to the hull.
- 8) You are under attack by men with guns.
- 9) You see a very large box floating in a busy shipping area.
- 10) Infectious disease on board.

**Ex. 28. Read the reports of emergencies and answer the questions.**

*There were two boats. In one boat there was a man with a rocket grenade launcher. We tried to **run over** one of the boats. Then we headed out to sea very fast to **outrun** them.'*

- 1) **To run over** is to:
  - a) chase b) hit c) run away
- 2) **To outrun** is to:
  - a) hit
  - b) go slower than the other boats
  - c) go faster than the other boats

*'High seas and a north east gale made our vessel **drift** to the south. Then suddenly the ship stopped moving. There is no **response** to engine or tug movements.'*

- 3) **To drift** is to:
  - a) move from course b) move on course c) move slowly
- 4) **Response** here means:
  - a) answer b) reply c) reaction

*'Sea water **swamped** the vessel and she **shipped** a heavy sea. She **settled** by the stern. There was no time to call for help and two of the crew lost their lives.'*

- 5) Find a phrase in the text that means 'to die'.
- 6) A **swamped** vessel is:  
 a) turned over b) filled with water c) damaged
- 7) **To ship** here means:  
 a) to travel b) to go on board c) to take on
- 8) **To settle** by the stern means:  
 a) to go down stern down b) to go straight down c) to go down stern up

*A vessel was in harbour **undergoing** engine repairs. There was an explosion and a **blaze** started in the engine **compartment**. Three people suffered burns to the face and body.*

- 9) You can replace **undergoing** with:  
 a) needing b) having c) waiting
- 10) A **blaze** is:  
 a) strong heat b) damage c) fire
- 11) A **compartment** is:  
 a) a room b) a cupboard c) a box

*A barge **overturned** and the total cargo of coal was **lost**. There were no injuries and no pollution. A tug **towed** the barge to harbour. It was then **righted**.*

- 12) You can replace **overturns** with:  
 a) is destroyed b) starts up c) goes upside down
- 13) What happens to the cargo?  
 a) No one could find it b) It died c) It could not be used
- 14) To **tow** is:  
 a) to pull b) to escort c) to guide
- 15) To right something is:  
 a) to turn it over b) to mend it c) to survey it

*The bow of a vessel swung to port across a channel. A second vessel struck its side. The collision damaged both vessels but there was no pollution.*

- 16) Which one of these statements is correct?  
 a) Two vessels cause environmental damage.  
 b) A vessel hits the side of a channel.  
 c) There is a collision between two vessels.

*A deck hand went forward to the bow and disappeared. The crew heard no cry for help. The missing man is a non-swimmer. He is not wearing a life jacket.*

- 17) Which of these statements is correct?  
 a) We try to rescue a man who falls overboard, but we lose him.  
 b) A member of the crew is missing and no one on board knows when he fell over the side.  
 c) A man is pulled from the water by a member of the crew.

## WARNINGS AND INSTRUCTIONS

**Ex. 29. Add these phrases to complete the warning notices below (1–7).**

warning! dispose correctly  
toxic material with extreme caution  
wipe down take care when  
operating with care  
fragile hazardous to health  
danger of contamination protective clothing

Example: *Warning!* Hydrofluoric acid. Wear *protective clothing* at all times.

- 1) Highly..... Handle .....
- 2) Always ..... work surfaces after use.
- 3) ..... goods – store upright.
- 4) Radioactive material – .....
- 5) Beware! This waste is .....
- 6) Use ..... – highly dangerous.
- 7) ..... operating fork lift truck.

**Ex. 30. Read this report and answer the questions.**

On July 18, 2006, the cruise ship Crown Princess le Port Canaveral, Florida. One hour after leaving harbour the vessel's automatic steering system began a turn to port. The Second Officer disengaged the automatic mode. He took manual control of the steering. He turned the wheel first to port and then to starboard. He did this several times. This caused the vessel to list to port and starboard at angles of 24°. The movement of the ship threw passengers and crew about and many were hit and injured by flying objects. The vessel's structure was not damaged.

- 1) What was the approximate position of the Crown Princess?
- 2) Who was in command of the ship?
- 3) Why did the ship list?
- 4) What caused injuries to passengers and crew?
- 5) How much damage was done to the ship?

Key vocabulary to highlight:

- Steering system
- (to) disengage: to disconnect e.g. gears and gearing
- manual: not automatic / by hand or human intervention in some way
- (to vs. a) list: lean to one side

Note:

- There are 5 other motions experienced by a boat at anchor. They are: *swaying*, *heaving*, *rolling*, *pitching* and *yawing*.
- *Yawing* and *swaying* are movements created by the wind.
- *Pitching* and *heaving* are ship's movements created by waves.
- While at anchor a ship may pull against the cable and this will cause *surging*.

**Ex. 31. Read this account of an accident at sea and answer the questions below:**

Who is to blame?

The owners of a bulk carrier told the ship's skipper that he must start his voyage even though there were problems with the ship's radar. The skipper did not argue and the ship set sail.

One night the ship's Second Officer was on watch. The vessel was sailing in a busy shipping lane. It was the end of the Second Officer's watch and he was tired and did not see a small yacht dead ahead and the ship's radar did not pick it up. The carrier was nearly on top of the yacht before the look-out saw it and gave the alarm. The Second Officer immediately ordered a manoeuvre to avoid the yacht. A few minutes later he saw lights astern. He thought that the yacht was safe and continued the voyage.

In fact the vessel had hit the yacht and the three crew members of the yacht were in the water. They were not wearing life jackets and they drowned.

1) Arrange these people in order of who is most to blame for the deaths. Give your reasons.

- The ship's owners
- The skipper
- The look-out
- The Second Officer
- The yachtsmen

2) What could have been done to avoid the deaths?

**Ex. 32. Study this list of nautical abbreviations. Add any more that you know.**

Aux auxilliary

C/O Chief Officer

D/D Damage done

DP designated person

DSC Dangerous goods, solid cargoes and containers

Eng Engineer

EP Estimated position

ETA Estimated time of arrival

FYI For your information

LtHo Light house

NM Nautical miles

o/b on board

OoW Officer of the watch

POB Persons on board

PM Planned maintenance

PS Port side

RoB remaining on board

S South

Tnkr Tanker

as able seaman

LOA length overall  
m/v motor vessel

Now use the list of abbreviations to write the sentences (1–5) in full.

Example: FYI our EP is 5 NM S of Portland LtHo

For your information, our estimated position is five nautical miles south of Portland Light House.

- 1) the C/O is the OoW now.
- 2) We are a Tnkr with 15 POB.
- 3) Serious D/D to PS.
- 4) DSC o/b and ETA is 03.45.
- 5) FYI: 2DP RoB. Eng is aft doing PM on Aux engine.

***Ex. 33. Translate.***

Tonnage, deadweight, beam, draft, specific gravity, freeboard, tele printer, to lubricate, to overhaul, muster list, muster duties, muster station, drill, Officer of the watch (watch officer, watchman), rudder, watertight, superstructure, poop, helm, helmperson, dry bulk carrier, tramp ship, coaster, to tow, tug, coastal waters, dredger, seaworthy, currents, inflatable lifejacket, blast, drill ship, hawse pipe, crew quarters, bitt, fore-and aft passage, sundeck, deck hand.

# ICT

## Computers and Telephoning (Review)

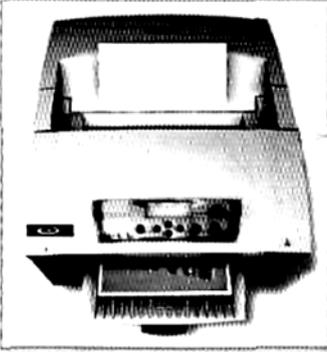
### *Ex. 1. Choose the best adjective.*

1. Oh dear. I pressed the \_\_\_\_\_ button.  
**a. incorrect b. wrong c. false**
2. I can't use my mobile phone. The battery's \_\_\_\_\_.  
**a. over b. flat c. exhausted**
3. The battery isn't completely flat, but it's very \_\_\_\_\_.  
**a. down b. short c. low**
4. My video camera is very \_\_\_\_\_.  
**a. easy to use b. uncomplicated c. obvious**
5. My new computer has a very \_\_\_\_\_ processor.  
**a. quick b. high speed c. fast**
6. The X19 notebook computer features a very \_\_\_\_\_ design.  
**a. compact b. little c. small**
7. Keeping files on paper is \_\_\_\_\_ solution.  
**a. an old-tech b. a past-tech c. a low-tech**
8. Keeping files on a computer database is a \_\_\_\_\_ solution.  
**a. new-tech b. now-tech c. high-tech**
9. My new iPad is the \_\_\_\_\_ model.  
**a. latest b. newest c. most modern**
10. In our office, we've set up a \_\_\_\_\_ network.  
**a. wire-free b. no wires c. wireless**
11. A call from New York to Tokyo is \_\_\_\_\_ distance.  
**a. far b. long c. faraway**
12. I don't think this printer is \_\_\_\_\_ with my computer.  
**a. compatible b. connectable c. suitable**
13. My laptop is only 3 centimetres \_\_\_\_\_.  
**a. thick b. tall c. wide**
14. The screen on my laptop isn't very \_\_\_\_\_.  
**a. light b. white c. bright**
15. In three or four years, my new computer will probably be \_\_\_\_\_.  
**a. old fashioned b. behind the times c. obsolete**
16. When you connect this to your computer, it will work immediately. It's \_\_\_\_\_.  
**a. plug and go b. plug and play c. plug and use**

## OUTPUT DEVICES: PRINTERS

### A Technical details

A printer is a device that prints your texts or graphics on paper.

The output on paper or acetate sheets is called <b>printout</b> or hard copy.		The output quality, or <b>resolution</b> , is measured in <b>dpi</b> or dots per inch.
A program in your computer, called the <b>printer driver</b> , converts data into a form that your printer can understand.		The speed of your printer is measured in <b>pages per minute (ppm)</b> .
A <b>print spooler</b> stores files to be printed when the printer is ready. It lets you change the order of documents in the queue and cancel specific print jobs.		In a network, users can share a printer connected to a <b>print server</b> , a computer that stores the files waiting to be printed.

*Ex. 2. Complete these sentences with the words in bold in the above text.*

- 1) The differences in \_\_\_\_\_ are noticeable: the more dots per inch, the clearer the image.
- 2) A print resolution of between 600 \_\_\_\_\_ and 2,400 \_\_\_\_\_ ensured that even text as small as 2 pt was legible.
- 3) Passengers with an electronic ticket will need a \_\_\_\_\_ of ticket confirmation or a boarding pass to be admitted to secured gate areas.
- 4) The key advance of recent years is printing speed: the latest generation of ink-jets prints black-and-white text at 15 \_\_\_\_\_ (\_\_\_\_\_).
- 5) With appropriate software, you can view the images on a computer, manipulate them, or send them to a \_\_\_\_\_ and produce excellent quality colour copies.
- 6) A \_\_\_\_\_ is a dedicated computer that connects a printer to a network. It enables users to share printing resources.
- 7) A \_\_\_\_\_ is a utility that organizes and arranges any documents waiting to be printed.
- 8) In computers, a \_\_\_\_\_ is a program installed to control a particular type of printer.

*Ex. 3. Put the words in the spaces.*

**cartridge • collate • cover • feed • double-sided • landscape • mono • out out • of • portrait • jammed • print-heads • reload • replacement • via**

1. When the ink runs out, you have to change the \_\_\_\_\_.
2. \_\_\_\_\_ cartridges can be ordered online.
3. To change the cartridge, you have to lift the \_\_\_\_\_.
4. The printer is connected to the computer \_\_\_\_\_ a USB cable.
5. The printer is \_\_\_\_\_ paper. \_\_\_\_\_ the paper tray.
6. I think some paper is \_\_\_\_\_ inside the printer.
7. My printer keeps getting jammed. I think there's a problem with the paper \_\_\_\_\_.

8. Shall I print this \_\_\_\_\_ in colour or black and white?
9. "Black and white" is also known as \_\_\_\_\_.
10. If there's a problem with the print quality, perhaps the \_\_\_\_\_ need cleaning.
11. Can your printer do \_\_\_\_\_ printing?
12. To \_\_\_\_\_ means to put all the pages into the correct order.
13. Pages can be in either \_\_\_\_\_ or \_\_\_\_\_ orientation.

**Ex. 4. Mobile Phone Networks. Put the words in the spaces.**

**contract • installed • networks • operators • pay-as-you-go • SIM • card • roaming • tariffs • top • up • users**

In Britain there are several mobile phone 1 \_\_\_\_\_ including O2, T-mobile and Orange. There are also 2 \_\_\_\_\_ like Virgin Mobile who use the network of another company.

When you buy a cell phone, you have a choice of 3 \_\_\_\_\_. The most popular is "4 \_\_\_\_\_", with customers paying for their calls in advance. They can 5 \_\_\_\_\_ their accounts in shops, over the internet, and at cash machines. Heavy 6 \_\_\_\_\_ may prefer a 7 \_\_\_\_\_. They pay a fixed amount every month, but the calls are much cheaper than they are for pay-as-you-go customers.

Mobile phones usually come with a 8 \_\_\_\_\_ already 9 \_\_\_\_\_. If you take the phone abroad, you may be able to use it on a local network. This is called "10 \_\_\_\_\_". It can be expensive, and it may be cheaper to buy a foreign SIM card.

**Ex. 5. Choose the best word.**

1. After 6pm, calls cost 20p \_\_\_\_\_ minute  
**a. for one b. per c. each**
2. You can't use a mobile in a cave because there's no \_\_\_\_\_.  
**a. network b. connection c. power**
3. I need to charge up my mobile phone battery. Have you seen my \_\_\_\_\_?  
**a. charger b. recharger c. charging machine**
4. When you send a text message, the \_\_\_\_\_ function can help you write it more quickly.  
**a. predicting text b. predictive text c. text predictor**
5. In the car, it's safer to use a \_\_\_\_\_ phone.  
**a. handless b. no hands c. hands-free**
6. If you don't want to dial a number by mistake, turn on the \_\_\_\_\_.  
**a. keypad locker b. keypad lock c. locker of keypad**
7. Which network has the lowest \_\_\_\_\_?  
**a. call charges b. call costs c. call expenses**
8. My pay-as-you-go account \_\_\_\_\_ is about £7.  
**a. balance b. level c. amount**
9. My average call \_\_\_\_\_ is about two minutes.

**a. time b. length c. duration**

10. We're a long way from the nearest \_\_\_\_\_ ...

**a. broadcaster b. antenna c. transmitter**

11. ...so the \_\_\_\_\_ is very weak.

**a. sign b. signal c. transmission**

12. When you pay by credit card, your card is \_\_\_\_\_.

**a. swooped b. swiped c. swapped**

13. A laptop computer with a screen you can write on is called a \_\_\_\_\_.

**a. tablet PC b. table PC c. flat screen PC**

14. An image on TV or computer screen is made up of thousands of \_\_\_\_\_.

**a. points b. pixels c. bits**

15. You can draw directly onto a computer screen with a \_\_\_\_\_.

**a. bright pen b. light pen c. pixel pen**

16. A camera connected directly to the internet is called \_\_\_\_\_.

**a. an internet camera b. a web watcher c. a webcam**

17. The woman in the photo is wearing a \_\_\_\_\_.

**a. headpiece b. headphone c. headset**

18. She talks to customers on the telephone all day. She works in a \_\_\_\_\_.

**a. telephone centre b. call centre c. talking centre**

19. Scanners, printers and webcams are \_\_\_\_\_.

**a. extras b. peripherals c. externals**

20. Add extra USB \_\_\_\_\_ to your computer....

**a. ports b. doors c. windows**

21. ... with a USB \_\_\_\_\_.

**a. centre b. point c. hub**

22. ADSL\* is also known as \_\_\_\_\_.

**a. wideband b. broadband c. longband**

23. I want to get a \_\_\_\_\_ ADSL modem.

**a. quick-speed b. fast-speed c. high-speed**

24. The internet is much faster with a broadband connection than with \_\_\_\_\_.

**a. dial-up b. phone-up c. call-up**

25. With a wireless router, you can \_\_\_\_\_ your broadband connection with other users.

**a. divide b. combine c. share**

26. This wire's too short. I need an \_\_\_\_\_ cable.

**a. extended b. extension c. extender**

27. You can connect a USB plug to a PS/2 port by using \_\_\_\_\_.

**a. an adaptor b. a bridge c. a connector**

*\*ADSL stands for asymmetric digital subscriber line, but the full term is almost never used.*

## Big screens: plasma and projection TVs

'I sometimes use a video projector in my Geography lessons. I prepare audiovisual presentations on my laptop and then connect it to a front-screen projector which displays the images on a distant screen or white wall.'



'I am a home cinema enthusiast. I've set up a system with a DVD recorder, speakers for surround sound, and a rear projection TV, which has the video projector and the screen within a large TV box. It's a real cinema experience.'

'I use a portable DLP projector for my business presentations. This is a digital light-processing device which creates the image with millions of microscopic mirrors arranged on a silicon chip.'

'I've got a 52-inch plasma display and really enjoy its advantages: high-contrast images and bright colours, generated by a plasma discharge which contains noble, non-harmful gases. Gas-plasma TVs allow for larger screens and wide viewing angles, perfect for movies!'

**Ex. 6. Complete these sentences with words in bold in the above text.**

- 1) If you intend to set up a \_\_\_\_\_, consider getting a very big screen, a DVD recorder and a good set of speakers.
- 2) A \_\_\_\_\_ - \_\_\_\_\_ takes digital images and displays them on a screen or wall.
- 3) The company announced plans to expand its \_\_\_\_\_ - \_\_\_\_\_ (DLP) cinema technology, which has thrilled test audiences with its dazzling colours and pin-sharp images.
- 4) In a \_\_\_\_\_ TV, a large box contains both the projector and the screen built in.
- 5) The gas mixture in a \_\_\_\_\_ is not dangerous.

**Ex.7. Software. Match the words on the left with the words on the right.**

### Set 1

1. **arrange** the
2. **cut and paste**
3. **install**
4. **open** the document in
5. **resize** the
6. **save** it as

- a. a Microsoft Word file
- b. a new window
- c. photo. It's too big.
- d. an application
- e. some text
- f. icons on the desktop

### Set 2

1. **copy** the
2. **customize** your
3. **launch**
4. **search**
5. **send** the file
6. **use** the

- a. for a lost file
- b. a program
- c. "search" function
- d. text into a new document
- e. to a different folder
- f. desktop

### Set 3

- |                                   |                    |
|-----------------------------------|--------------------|
| 1. accidentally <b>deleted</b> an | a. menu            |
| 2. <b>exit</b>                    | b. important file  |
| 3. <b>click</b> on that button    | c. an application  |
| 4. <b>pull down</b>               | d. as a web page   |
| 5. <b>replace</b> the existing    | e. on the task bar |
| 6. <b>view</b>                    | f. file            |

### Set 4

- |                         |                        |
|-------------------------|------------------------|
| 1. <b>close down</b> an | a. after a session     |
| 2. <b>log off</b>       | b. all folders         |
| 3. <b>look in</b>       | c. application         |
| 4. <b>put</b> the file  | d. hard drive          |
| 5. <b>run</b> a         | e. on a USB memory key |
| 6. <b>wipe</b> the      | f. program             |

### *Ex. 8. Types of software. Match the type of software with the definition.*

- |                         |  |
|-------------------------|--|
| 1. trial version        | a. A <b>simplified</b> version which is cheaper to buy.  |
| 2. shareware            | b. Software which is in the <b>public domain</b> . Anybody can use it without paying.  |
| 3. freeware             | c. The <b>full version</b> with all the features.  |
| 4. home-use version     | d. You can try it for a while for free. Then if you want to keep using it, you are expected to pay a small <b>fee</b> to the writer.                     |
| 5. professional version | e. You can use it for free for a while (often a month). When the <b>trial period</b> finishes, you have to pay, or the program will <b>de-activate</b> . |

### *Ex. 9. Punctuation and symbols. Match the words with the punctuation marks and symbols.*

- |                                    |             |
|------------------------------------|-------------|
| 1. full stop                       | (a) !       |
| 2. comma                           | (b) @       |
| 3. exclamation mark                | (c) ,       |
| 4. question mark                   | (d) &       |
| 5. single quotes (inverted commas) | (e) .       |
| 6. double quotes (speech marks)    | (f) =       |
| 7. dollar sign                     | (g) 'Hello' |
| 8. percentage sign                 | (h) ^       |
| 9. ampersand                       | (i) *       |
| 10. asterisk                       | (j) "Hello" |
| 11. hash                           | (k) _       |
| 12. brackets                       | (l) -       |
| 13. left bracket                   | (m) ?       |

14. square brackets	(n) /
15. underscore	(o) ( )
16. hyphen	(p) \$
17. plus sign	(q) \
18. equals sign	(r) [ ]
19. colon	(s) %
20. semicolon	(t) (
21. "at" sign	(u) #
22. forward slash	(v) :
23. backward slash	(w) +
24. arrow	(x) ;

**Ex. 10. Presentation software. Choose the best word.**

- In Microsoft PowerPoint, when creating a new presentation, you can choose between a blank presentation, a design template and the AutoContent \_\_\_\_\_.  
**a. witch b. wizard c. bogeyman**
- PowerPoint can be used to create presentation \_\_\_\_\_.  
**a. slideshows b. picture shows c. exhibitions**
- You can choose a \_\_\_\_\_ to move from one slide to another.  
**a. changing effect b. moving effect c. transition effect**
- You can include moving pictures in your presentation. These are called \_\_\_\_\_.  
**a. films b. movies c. animations**
- You can choose a \_\_\_\_\_ for your presentation.  
**a. colour pattern b. colour arrangement c. colour scheme**
- You can give your presentation over the internet as an \_\_\_\_\_.  
**a. online broadcast b. online show c. online spectacle**
- It's usually clearer to present statistics in the form of a table or \_\_\_\_\_.  
**a. chart b. figure c. track**
- If you wish, the software will help you \_\_\_\_\_ of your presentation.  
**a. practice the times b. rehearse the timing c. try out the times**
- You can choose to record the \_\_\_\_\_ on your computer...  
**a. narration b. speaking c. voice**
- ...rather than giving it \_\_\_\_\_.  
**a. in real life b. for real c. live**

**Ex. 11. Problems with software. Choose the correct preposition. Then match the problem with the solution.**

- |  |  |
|--|--|
| 1. The operating system <b>in</b> / <b>on</b> my computer doesn't support the latest version <b>of</b> / <b>from</b> this application. | a. You can download one for free <b>to</b> / <b>from</b> the internet. |
| 2. These files are too big.  | b. Perhaps you could get an older version – or buy a new computer!     |
| 3. My computer says it   | c. What about uninstalling the   |

- hasn't got enough memory **for** / **to** run this program.
4. I can't understand this program. It's too complicated.
5. I think there's a bug **in** / **inside** this software.
6. There doesn't seem to be an icon for the program **in** / **on** the desktop.
7. I can't use this program. It's all **in** / **with** French!
8. I can't get the driver for my new printer **to** / **at** work.
9. I haven't got a media player **in** / **on** my computer.  
driver for your old printer?
- d. Have you checked to see if there are any updates available **in** / **on** the internet?
- e. Why don't you close **off** / **down** all those other applications you've got open?
- f. You can get a manual. I've seen one in the local bookshop.
- g. How about compressing them **with** / **by** WinZip?
- h. Go **to** / **on** the "start" menu, and click **at** / **on** "All Programs".
- i. Change the language setting.

## FACES OF THE INTERNET

### A What the Internet is

The **Internet** is an **International** computer **Network** made up of thousands of networks linked together. All these computers communicate with one another; they share data, resources, transfer information, etc. To do it they need to use the same language or **protocol: TCP / IP (Transmission Control Protocol / Internet Protocol)** and every computer is given an address or **IP number**. This number is a way to identify the computer on the Internet.

### B Getting connected

To use the Internet you basically need a computer, the right connection software and wired or wireless (Wi-Fi) network connection made by your **ISP (Internet Service Provider)**. You can also use your smartphone as a modem for the computer through USB or Wi-Fi.

At first most computers used a **dial-up** telephone connection that worked through the standard telephone line. Now a **broadband** connection, a high data transmission rate Internet connection, has become more popular.

Regarding the size, there are two main types of modern computer networks **Local Area Network (LAN)** and **Wide Area Network (WAN)**. The first one is a network of some enterprise, university, and office. A LAN is typically housed in one building or campus. And the second type network is a network, which connects other networks. Computers of these networks may be situated in different parts of the world. An example of a Wide Area Network is the Internet.

In the case of a LAN there are two types of networks concept:

- **peer-to-peer network** concept;

- **client-server network** concept or network with dedicated server. This type of networks is sometimes named as dedicated file-server or hierarchical network.

A peer-to-peer network is a small network that usually does not include a central server, all computers of such network work as clients and servers simultaneously. All computers are equal; they handle security and administration for themselves.

The basic equipment has changed drastically in the last few years. You no longer need a computer to use the Internet. **Web TV** provides email and access to the Web via a normal TV set plus a high-speed modem. More recently, 3-5 Generation mobile phones and PDAs, personal digital assistants, also allow you to go online with **wireless** connections, without cables.

Telephone lines are not essential either. **Satellites** orbiting the earth enable your computer to send and receive Internet files. Finally, the **power-line (Power Line Communication, PLC) Internet**, still under development, provides access via a power plug.

### **C Components of the Internet**

The Internet consists of many systems that offer different facilities to users.

**WWW**, the **World Wide Web**, a collection of files or pages containing links to other documents on the Net. It's by far the most popular system. Most Internet services are now integrated on the Web.

**Email**, or electronic mail, for the exchange of messages and attached files.

**Mailing lists** (or **listservs**) based on programs that send messages on a certain topic to all the computers whose users have subscribed to the list.

**Chat** and **instant messaging**, for real-time conversations; you type your messages on the keyboard.

**Internet telephone**, a system that lets people make voice calls via the Internet.

**Video conference**, a system that allows the transmission of video and audio signals in real time so the participants can exchange data, talk and see one another on the screen.

**File Transfer Protocol (FTP)**, used to transfer files between computers.

**Newsgroups**, where people send, read and respond to public bulletin board messages stored on a central computer.

**TELNET**, a program that enables a computer to function as a terminal working from a remote computer and so use online databases or library catalogues.

*Ex. 12. Read A and B above and decide if these sentences are True or False. If they are false, correct them.*

1. The Internet and the World Wide Web are synonyms.
2. Computers need to use the same protocol (TCP / IP) to communicate with each other.
3. Web TV can provide access to the Net.
4. LAN is a computer network used at homes.
5. The computer IP number is a way to identify it on the Internet.

*Ex. 13. What Internet system from C above should these people use?*

1. I like receiving daily updates and headlines from newspapers on my computer.'

2. 'I'm doing some research and need computer access to the University library.'
3. 'I'd like to avoid flying to Japan to attend the meeting but I want to see what's going on there.'
4. 'I want to read people's opinions about environmental issues and express my views.'
5. 'I have designed a web page and want to transfer the data to my reserved web space.'
6. 'I'd like to check my students' draft essays on my computer and send them back with my suggestions.'
7. 'I don't want to spend too much money on international phone calls but I love hearing his voice.'
8. 'I live in a small village where there are no other teenagers. I wish I had the chance to meet and chat with friends.'

**Ex. 14. Choose the correct alternatives to complete this newspaper article.**

Sharing your broadband connection with your neighbours is either the best way of making friends or the fastest way to lose them. Thanks to new European legislation, (1) *modem / wireless / telephone* technology and a firm called MyZones, several households within 300 metres of each other can now share the cost of fast (2) *broadband / dial-up / phone* access. But the more people using your network, the slower it gets. If four people are using it at once, the surfing speed is 128k. Clive Mayhew-Begg, chief executive of MyZones, says: 'Sharing broadband is just the start of a new generation of consumer-based Internet services.' It starts on July 25 when MyZones will start selling £150 starter kits. These include a wi-fi (wireless technology) point and ADSL (3) *3G / modem / Web TV* but not the wi-fi adapters you and your neighbours will need. These will cost an extra £60 or so for each computer logged on to the wireless network.

## **THE WORLD WIDE WEB**

### **A What the Web is**

The World Wide Web, Web or WWW is a network of documents that works in a hypertext environment, i.e. using text that contains links, hyperlinks to other documents.

The files, web pages, are stored in computers, which act as servers. Your computer, the client, uses a web browser, a special program to access and download them. The web pages are organized in websites, groups of pages located on the Web, maintained by a webmaster, the manager of a website.

The Web enables you to post and access all sorts of interactive multimedia information and has become a real information highway.

### **B How to surf the Web**

To surf or navigate the Web, access and retrieve web pages or websites, you need a computer with an Internet connection and a web browser. After you have launched it, you must type the website address or URL (Uniform Resource Locator), which may look like this:

<b>http://www.cup.org.uk/education/index.html</b>	
http://	indicates the type of communication <b>protocol</b> that the server and browser will use to communicate. Here it is <i>Hypertext Transfer Protocol</i> .
www.	shows that it is a resource on the World Wide Web. It's a <b>server</b> .
cup.org	is the <b>domain name</b> of the web server that <b>hosts</b> the website.
cup	<b>second-level domain</b>
.org	<b>top-level domain</b>
.uk	<b>country code</b>
education	is the <b>path (directory)</b> , the place where a web page is located.
index.html	is the <b>file name</b> or name of a single web page.
html	<b>file format</b>
The different parts are separated by full stops (.) and forward slashes (/), double slashes (//). When we say a URL, we say dot (.) and slash (/).	

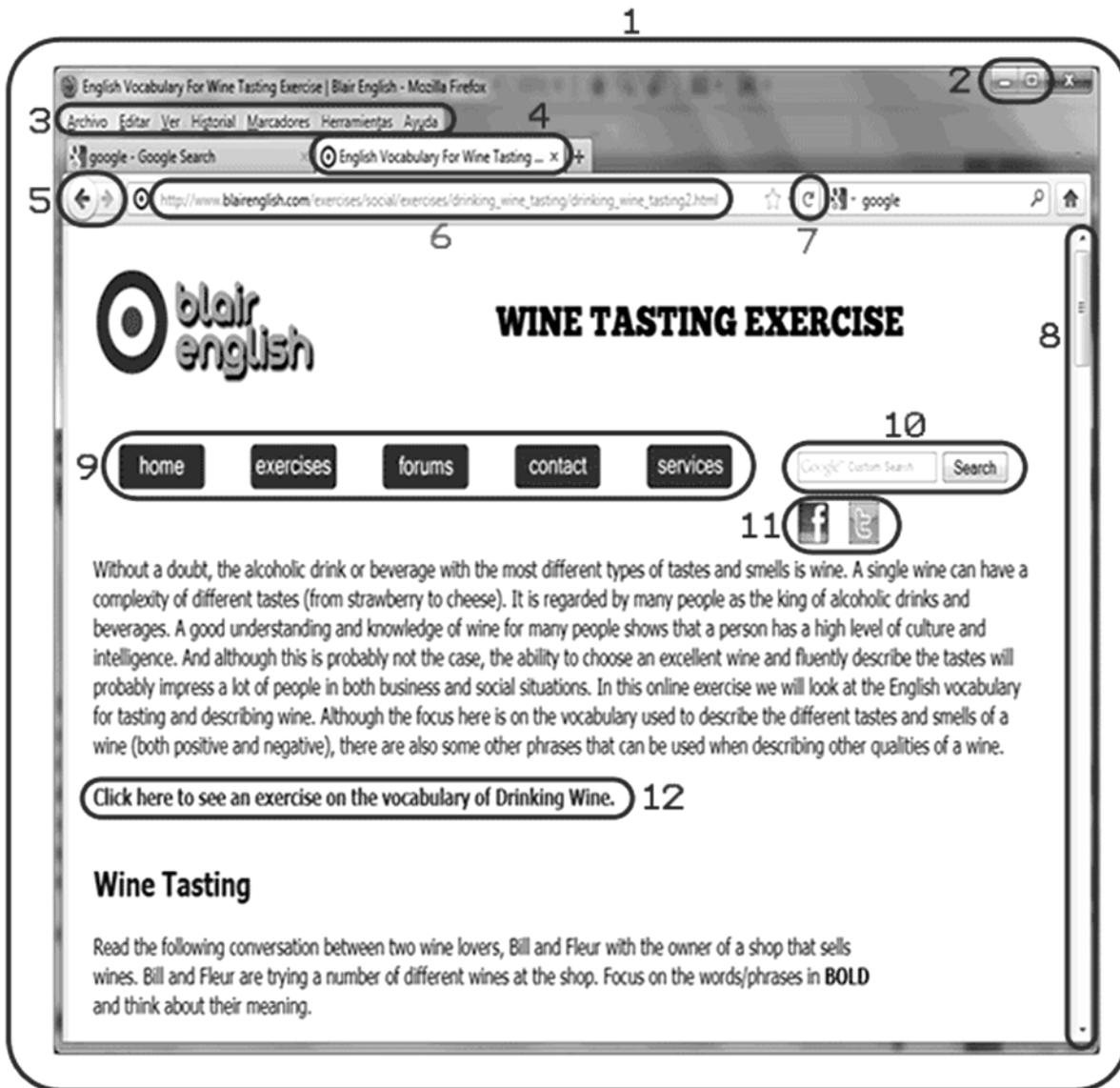
To find interesting sites you can use search engines, where the website information is compiled by spiders, computer-robot programs that collect information from sites by using keywords, or through web indexes, subject directories that are selected by people and organized into hierarchical subject categories. Some web portals - websites that offer all types of services, e.g. email, forums, search engines, etc. - are also good starting points.

The most relevant website addresses can be stored in your computer using the bookmarks or favourites function in your browser.

Websites usually have a beginning page or home page. From this starting point you can navigate by clicking your mouse on hyperlinks in texts or images.

*Ex. 15. In the below photo of a web page, you will find that different parts are enclosed by a red line with a number in red. Match them with terms in bold. Translate the terms into Ukrainian.*

**icon • navigation bar • back/forward buttons • site search box • web browser • menu bar • scroll bar • tab • refresh button • link minimize/maximize buttons**



**Ex. 16.** Below is a definition/description of each of the different parts of the above web page. Fill in the gaps with the vocabulary above.

1. A part of the web browser where you can move up and down the web page, is the \_\_\_\_\_.
2. The buttons on a web browser which takes you to previous web pages that you have looked at, are \_\_\_\_\_.
3. A word or sentence on a web page that takes you to a different web page when 'clicked on' or 'pressed', is a \_\_\_\_\_.
4. A list of the different sections/parts of a website, is called a \_\_\_\_\_.
5. The location or 'url' of a web page on the web, is called the \_\_\_\_\_.
6. The place where you can quickly look for content on a website, is called the \_\_\_\_\_.
7. When you have multiple web pages open on a web browser, the name of each web page is written in a \_\_\_\_\_.

8. The two buttons that are used to make a web browser window disappear or make it cover the full screen, are called the \_\_\_\_\_.
9. Small images on a web page, are called \_\_\_\_\_.
10. The name of the application used to view/see web pages on a computer, is called a \_\_\_\_\_.
11. When you want to see the up-to-date content on a web page, you press the \_\_\_\_\_.
12. To print or change the view in a web browser, you go to the \_\_\_\_\_.

**Ex.17. Choose the best word from each pair in italics.**

**What's the difference between the Web and the internet?**

Some people think that the internet and the Web are the same thing, but in fact they are different. The internet (often called simply "the net") is a global (1) *network / net* of interconnected computers. These computers communicate with each other (2) *over / through* existing telecommunications networks – principally, the telephone system, or Wi-Fi. The World Wide Web (usually known as just "the Web") is the billions of web pages that are stored on large computers called web (3) *servers / services*.

To (4) *see / access* the web, you need a computer and Wi-Fi. To start surfing the net you log (5) *on / up*. To finish navigating you log (6) *off / down*.

Websites are not the only service available on the internet. It is also used for many other functions, including sending and receiving email, and connecting to newsgroups and (7) *discussion / talking* groups. You could say that the internet is a system of roads, and web pages and emails are types of traffic that travel on those roads.

**Ex. 18. Put these operations in the order that you do them.**

- (a) close down your browser
- (b) switch on the computer
- (c) switch off the computer
- (d) enter a web address (also known as a URL) into the address field
- (e) launch your browser (for example, Opera, Safari etc.)
- (f) perhaps wait for a few seconds while the web-page downloads
- (g) view the page

**Ex. 19. Choose the best words.**

1. ADSL is more commonly known as \_\_\_\_\_.  
a. longband b. broadband c. wideband
2. Broadband internet connection is much faster than \_\_\_\_\_.  
a. dial-in b. dial-through c. dial-up
3. With a broadband connection, you usually have to pay a \_\_\_\_\_.  
a. fixed monthly price b. fixed monthly fee c. fixed monthly cost
4. With dial-up, you usually chose a \_\_\_\_\_ tariff.  
a. pay-as-you-go b. pay-what-you-want c. pay-if-you-like
5. Some broadband contracts limit the amount of \_\_\_\_\_ you can have each month.  
a. pages b. traffic c. use

6. Looking at web pages can be called "navigating the Web" but is more commonly called \_\_\_\_\_.
- a.** "surfing the net" **b.** "skiing the net" **c.** "swimming the net"
7. You can often find the answer to a question by \_\_\_\_\_ on the internet.
- a.** looking at it **b.** looking for it **c.** looking it up
8. When your computer is not connected to the internet, it is \_\_\_\_\_.
- a.** out of line **b.** offline **c.** off the line
9. Internet banking is also called \_\_\_\_\_.
- a.** online banking **b.** on the line banking **c.** inline banking
10. An unexpected disconnection from the internet is called a \_\_\_\_\_.
- a.** lost connection **b.** missed connection **c.** dropped connection
11. A file which is copied from the internet onto your computer is called \_\_\_\_\_
- a.** an upload **b.** a download **c.** a load
12. Downloading files from the internet can \_\_\_\_\_ your computer with a virus.
- a.** infect **b.** contaminate **c.** dirty
13. A \_\_\_\_\_ video is a video that becomes popular very quickly through the Internet.
- a.** famous **b.** viral **c.** widely-spread
14. If you want to register on the website, you have to enter a log-in name and a \_\_\_\_\_.
- a.** security word **b.** safe word **c.** password
15. You \_\_\_\_\_ a photo on your profile. Click here to tag the people in the photo.
- a.** divided **b.** shared **c.** split
16. Nobody knows exactly why online videos \_\_\_\_\_ viral.
- a.** get **b.** become **c.** go
17. It's really easy to \_\_\_\_\_ videos to the net.
- a.** download **b.** upload **c.** watch
18. People \_\_\_\_\_ videos on social networking sites all the time.
- a.** download **b.** share **c.** post

**Ex.20. Internet terms. Choose the best words to complete the sentences.**

1. "The website gets a thousand hits a week" means the website has a thousand \_\_\_\_\_ a week.
- a.** sales **b.** visits **c.** search engine matches
2. The words, images and other material that make up a website are called \_\_\_\_\_.
- a.** the contents **b.** the content **c.** the filling
3. Designs and drawings in websites are usually called \_\_\_\_\_.
- a.** web pictures **b.** web graphics **c.** web illustrations
4. Moving pictures in websites are usually called \_\_\_\_\_.
- a.** cartoons **b.** movies **c.** animations
5. Websites with sounds and/or video clips and/or animations have \_\_\_\_\_ content.
- a.** multimedia **b.** many-media **c.** mixed-media

6. A space in a website where you enter information (address, password etc.) is called a \_\_\_\_\_.  
**a. box b. strip c. field**
7. A hyperlink is often called just \_\_\_\_\_.  
**a. a link b. a hyper c. an HL**
8. In real time means \_\_\_\_\_.  
**a. during working hours b. instantly c. in British Standard Time**
9. A place with computers for public internet use is usually called an internet café or \_\_\_\_\_ even if they don't serve coffee.  
**a. web café b. computer café c. cyber café**
10. Internet cafés offer internet \_\_\_\_\_.  
**a. connection b. availability c. access**
11. A program that adds functions to a browser (e.g. Shockwave) is called a \_\_\_\_\_.  
**a. plug b. plugged-in c. plug-in**
12. Temporary internet files are stored in the \_\_\_\_\_.  
**a. cash b. cache c. cashe**
13. Colours which all browsers can display without problems are called \_\_\_\_\_.  
**a. browser safe b. browser acceptable c. browser easy**
14. A vlog stands for \_\_\_\_\_.  
**a. visual blog b. viral blog c. video blog**

**Ex. 21. IT slang. Choose the best words above to complete the sentences.**  
**code monkey • early adopter • EOL (end of life) • fanboy • flame**  
**geek • horked • killer app • leading edge • pita (pain in the ass)**  
**PHB (pointy haired boss) • spaghetti code • trendsetter • troll**  
**Whatever**

1. The bad software architect said, "Tell the developers to stop thinking and start typing like good little \_\_\_\_\_"
2. "\_\_\_\_\_, dude," replied the programmer when his manager asked him to work overtime to recover his deleted files.
3. Apple is a company of \_\_\_\_\_, whom everyone else is just following like lemmings.
4. Installing and configuring a Linux wireless network card can be a real \_\_\_\_\_.
5. Do you think compiled languages have reached their \_\_\_\_\_?
6. A geek is a typical \_\_\_\_\_, often trying the latest and greatest technology before their peers have even heard of it.
7. Email was the first \_\_\_\_\_ of the Internet.
8. The forum's popularity among serious users went down when the system operator refused to banish the \_\_\_\_\_.
9. The lead programmer threw his hands up in the air and screamed when he saw the 10,000 lines of \_\_\_\_\_ that management asked him to debug by tomorrow.

10. This is how the \_\_\_\_\_ is described on the Dilbert web site: "He wasn't born mean and unscrupulous, he worked hard at it."
11. The \_\_\_\_\_ did not have a girlfriend, but he did have a computer named Lisa which he programmed to sing him love songs before bedtime.
12. Joe the sysadmin got sent to counseling because he started too many \_\_\_\_\_ wars on the company intranet.
13. Kyle's company is so \_\_\_\_\_ they buy everyone new computers every six months.
14. Tom is such a \_\_\_\_\_ he still uses his old Commodore Amiga as his main computer.
15. The web sites crashed because the server was completely \_\_\_\_\_ .

## **INTERNET SECURITY**

### **A Internet crime**

The internet provides a wide variety of opportunities for communication and development, but unfortunately it also has its dark side.

**Crackers**, or black-hat hackers, are computer criminals who use technology to perform a variety of crimes: virus propagation, fraud, intellectual property theft, etc.

Internet-based crimes include **scam**, email fraud to obtain money or valuables, and **phishing**, bank fraud, to get banking information such as passwords of Internet bank accounts or credit card details. Both crimes use emails or websites that look like those of real organizations.

Due to its anonymity, the Internet also provides the right environment for **cyberstalking**, online harassment or abuse, mainly in chat rooms or newsgroups.

**Piracy**, the illegal copying and distribution of copyrighted software, information, music and video files, is widespread.

But by far the most common type of crime involves malware.

### **B Malware: viruses, worms, trojans and spyware**

**Malware (malicious software)** is software created to damage or alter the computer data or its operations. There are main types.

**Viruses** are programs that spread by attaching themselves to executable files or documents. When the infected program is run, the virus propagates to other files or programs on the computer. Some viruses are designed to work at a particular time or on a specific date, e.g. on Friday 13<sup>th</sup>. An email virus spreads by sending a copy of itself to everyone in an email address book.

**Worms** are self-copying programs that have the capacity to move from one computer to another without human help, by exploiting security flaws in computer networks. Worms are self-contained and don't need to be attached to a document or program the way viruses do.

**Trojan horses** are malicious programs disguised as innocent-looking files or embedded within legitimate software. Once they are activated, they may affect computer in a variety of ways: some are just annoying, others are more ominous, creating a backdoor to the computer which can be used to collect stored data. They don't copy themselves or reproduce by infecting other files.

**Spyware**, software designed to collect information from computers for commercials or criminal purposes, is another example of malicious software. It usually comes hidden in fake freeware or shareware applications downloadable from the Internet.

### **C Preventative tips**

- Don't open email attachments from unknown people; always take note of file extension.
- Run and update **antivirus programs**, e.g. virus **scanners**.
- Install a **firewall**, a program designed to prevent spyware from gaining access to the internal network.
- Make backup copies of your files regularly.
- Don't accept files from high-risk sources.
- Use a **digital certificate**, an electronic way of proving your identity, when you are doing business on the Internet. Avoid giving credit card numbers.
- Don't believe everything you read on the Net. Have a suspicious attitude toward its contents.

**Ex. 22. Identify the Internet crimes sentences (1-6) refer to. Then match them with the advice below (a-f).**

1. Crackers try to find a way to copy the latest game or computer program.
2. A study has revealed that half a million people will automatically open an email they believe to be from their bank and happily send off all their security details.
3. This software's danger is hidden behind an attractive appearance. That's why it is often wrapped in attractive packages promising photos of celebrities like Lady Gaga or Jennifer Lopez.
4. There is a particular danger in Internet commerce and emails. Many people believe they have been offered a special gift only to find out later they have been deceived.
5. 'Nimda' spreads by sending infected emails and is also able to infect websites, so when a user visits a compromised website, the browser can infect the computer.
6. Every day, millions of children spend time in Internet chat rooms talking to strangers. But what many of them don't realize is that some of the surfers chatting with them may be sexual predators.
  - a. People shouldn't buy cracked software or download music illegally from the Internet.
  - b. Be suspicious of wonderful offers. Don't buy if you aren't sure.
  - c. It's dangerous to give personal information to people you contact in chat rooms.
  - d. Don't open attachments from people you don't know even if the subject looks attractive.
  - e. Scan your email and be careful about which websites you visit.
  - f. Check with your bank before sending information.

**Ex. 23. Choose the best words to go into each of the spaces.**

1. A person who illegally accesses somebody else's computer over the internet is called a \_\_\_\_\_.
  - a. pirate
  - b. hack
  - c. hacker

2. A website which (in theory) cannot be accessed by a hacker is \_\_\_\_\_.  
**a. strong b. secure c. clean**
3. A website which can only be viewed by authorised people has \_\_\_\_\_ access.  
**a. reduced b. small c. restricted**
4. Unwanted advertising emails are popularly known as \_\_\_\_\_.  
**a. meatloaf b. spam c. sausages**
5. Software which blocks attempts by others to access your computer over the internet is called a \_\_\_\_\_.  
**a. firewall b. fire blanket c. fire engine**
6. It's essential to \_\_\_\_\_ your anti-virus protection regularly.  
**a. up-to-date b. date c. update**
7. Anti-virus software can \_\_\_\_\_ your computer for viruses.  
**a. detect b. review c. scan**
8. Anti-virus software can also \_\_\_\_\_ viruses on removable media, such as CDs.  
**a. detect b. control c. see**
9. When your anti-virus software subscription \_\_\_\_\_...  
**a. ends b. stops c. expires**
10. ... it's a good idea to \_\_\_\_\_ it immediately.  
**a. renew b. renovate c. replace**

**Ex. 24. Match the malware with the damage. (It's not easy, and the terms are sometimes confused with each other.)**

- |                                  |  |
|----------------------------------|--|
| 1. virus                         | a. collects and sends private information from the infected computer to a third party  |
| 2. spyware                       | b. an undesirable program which can replicate itself across a network  |
| 3. trojan horse                  | c. allows a hacker to access private information when they wish  |
| 4. keystroke logger or keylogger | d. a program which adds itself to an executable file, and can cause considerable damage to the data on the infected computer |
| 5. worm                          | e. records characters that are typed into a computer   |

## **E-COMMERCE**

### **A Elements of e-commerce**

E-commerce or online shopping is the process of buying and selling products and services using the Internet. It has similarities with traditional commercial activity.

A product or service, from plane tickets to books, is offered in an online shop, the seller's website. Customers select and order products, which are then paid for and delivered. The main difference is that most of the processes take place on the Web.

E-commerce websites use the following components:

- **A shopping cart program**, a web-based software application to keep a record of the products chosen by the customer.

- A **secure socket layer (SSL) certificate**, to verify that the credit card information has been securely transmitted; this is usually shown by a small padlock on the web page.
- A **payment gateway**, an interface between the website and the bank that accepts the electronic payment.

### B Types of e-business

Companies whose activity is centred on the Internet are called **dotcoms**, after their web addresses. However, most e-commerce businesses are **bricks and clicks**, as they have both a physical and online presence.

Although there are some examples of **B2B** commerce, business to business, e-commerce is mainly used for **B2C**, business to consumer, or even for **C2C**, consumer to consumer. Internet auctions, websites like eBay where people offer products and sell them to the highest bidder, are an example of C2C e-commerce.

**Ex. 25. Shopping on the net. Fill the gaps, then put these stages in order (number them 1 to 8).**

**account • add • browse • checkout • confirm • delivery • details • invoice • shopping • basket • sign • in**

- You usually have to allow at least two working days for 1 \_\_\_\_\_.
- Choose an item, and 2 \_\_\_\_\_ it to your 3 \_\_\_\_\_.
- Click 4 "\_\_\_\_\_". Now it's too late to change your mind!
- When you have finished shopping, click "proceed to 5 \_\_\_\_\_".
- Usually, you will receive an 6 \_\_\_\_\_ by email.
- Enter your name, address and card 7 \_\_\_\_\_.
- Before you can start shopping, you usually have to 8 \_\_\_\_\_ to the site. (If you don't already have an 9 \_\_\_\_\_, you have to create one.)
- 10 \_\_\_\_\_ the website, and decide what you want to buy.
- 

**Ex. 26. Put the words into the spaces.**

**bid • down • encrypted • online • outbid • padlock • secure • server • system**

- Sites that ask for your credit card number or other personal information should use a \_\_\_\_\_, so the data you send is \_\_\_\_\_.
- A: "Have you ever bought anything on an auction site like eBay?"  
B: "No. Once I made a \_\_\_\_\_ on something, but I was \_\_\_\_\_ a few seconds before the auction closed."
- The \_\_\_\_\_ symbol means that a web-page is secure.
- I couldn't book my flight \_\_\_\_\_ because the airline's \_\_\_\_\_ was \_\_\_\_\_.

**Ex. 27. Booking a hotel online. Choose the best words.**

You can often make a hotel reservation (1) *by / over* the internet, but you may have to pay a deposit. The deposit will usually be returned (2) *to / for* you if you cancel your

reservation a week or more (3) *in / with* advance. You will usually receive notification (4) *about / of* the booking (5) *by / from* email. When you check (6) *in / into* the hotel, your details will probably already be (7) *on / inside* the hotel system. When you check (8) *out / out of*, you will usually be given a receipt.

## ONLINE BANKING

### A Online banking basics

Electronic banking is the general term given to the possibility of performing banking transactions through electronic communications, mainly the internet. That's why many people prefer to use the terms online banking or Internet banking.

Online services can be provided by traditional banks, **brick-and-mortar** banks, which, through the use of these new technologies become **brick-and-click** banks. Banks that don't have physical branches or ATMs are called virtual or Internet Banks. To use these services you need a computer with internet access. Customers can also log in with a mobile phone or a tablet. The use of wireless networks to access financial institutions is known as wireless banking.

### B Online banking services

*What do you use online banking for?*

'I pay bills online. I've got a list in my computer with all my payment recipients' names and account details. When I have to pay, I select the amount and the name of the payee. I can also schedule the payments, or fix the date for payments. The bank will transfer the funds, or send the money, to the selected account.'

'I check account balances. I can access and view my accounts any time, from any PC. Also, I don't need to wait for the post to get written statements from the bank. I can see and then save online statements on the bank's website. It saves time and paper.'

'I find online banking extremely convenient. I don't need to remember when my credit card expires or the date of a payment. My Internet bank sends short message notifications, warning or other information services to my email or mobile phone.'

'I trade stocks online. I contact an online broker to invest my money, and to buy and sell shares.'

### C Online security

Most online banks have introduced the concept of two-factor authentication, the simultaneous use of at least two different devices or layers of security to prevent fraud.

When you open an Internet account, you are given a confidential PIN, personal identification number, and a password and username.

For some transactions, customers are required to use a TAN, transaction authorization number, from a list provided by the bank. It can only be used once, and it acts as a second password.

Security tokens are microchip-based devices that generate a number that has to be typed by the user or read like a credit card. They are becoming a common form of two-factor authentication.

One of the best methods of identifying the user of a bank account is biometric authentication, the use of physical trait, such as a fingerprint, to allow a person to log in.

Some laptops have built-in fingerprint readers, which makes online banking easier and more secure.

**Ex. 28. Find expressions in A above which have the following meanings.**

- 1 Banks that offer physical locations and online services.
- 2 The type of banking where you can use mobile phone networks to perform transactions.
- 3 Banks that only do business over the Internet. (two possibilities)
- 4 Banking services (transactions, payments, etc.) offered on the internet.
- 5 Banks that don't have a Web presence.
- 6 The general term that includes all sorts of banking that make use of ICT technologies.

**Ex.29. Read B above and choose the right alternative for these electronic banking transactions.**

1 *send / trade* stocks 2 *pay / save* bills 3 *check / trade* account balances 4 *save online statements / stocks* 5 *transfer short message notifications / funds* 6 *schedule funds / payments* 7 *pay / send* short message notifications

## IT JOBS

Careers in IT involve ensuring that individuals and organisations have the hardware and software they need and any necessary support to help them make the best use of it.

Unsurprisingly, there are lots of roles that involve using technical skills and knowledge, such as programming, computer networking or fixing your colleagues' PCs. However, there are also plenty of jobs that have more of a business focus, in which you'll use skills such as building good relationships with clients, managing projects so they stay on time and in budget, or assessing how new technology could make a company more efficient.

### Different types of jobs in IT

If you want a job with a lot of technical work, options include:

- Developing software
  - Developing hardware
  - Developing games
  - Developing websites
  - Networking (connecting computers so they can exchange data)
  - Testing (making sure that software or hardware works properly before it is released to the public)
  - IT support (providing help and support to individuals or businesses with their IT problems)
  - Cyber security (protecting computer systems and data from attack or falling into the wrong hands – seen as increasingly important by businesses as cyber crime is increasing)
- If you're more interested in the business side of things, consider the following:

- Technology consulting (advising businesses on how they can use technology to help them work more efficiently and make more money)
- Project management (making sure that IT projects are completed on time and in budget)
- Technical sales (selling hardware or software to businesses or individuals)  
Of course, the precise balance of business and technical skills in each job will vary from employer to employer.

## **DIGITAL MONEY**

Digital money, or **digital currency**, is any form of money or payment that exists only in electronic form. The most common form of digital money is the money that is held by banks and central government deposits. Digital money lacks a tangible form such as a bill, check, or coins. It is accounted for and transferred using electronic codes in computers. As technology becomes increasingly prominent, payments are becoming more digital, resulting in less use of tangible money. The institutions hold a certain level of capital in order to weather economic stress; however, the money does not sit in a safe in some physical location. Instead, it is housed electronically in the form of digital money. Banks and central governments handle transactions, including millions or billions of currencies, but are devoid of the use of physical cash.

### **Digital Money Explained**

New forms of technology now allow for more secure and seamless use of digital money. Digital money can be transferred and exchanged with technologies like credit cards, smartphones, and online **cryptocurrency** exchanges. Cryptocurrency is one of the prominent forms of digital money. It is a form of digital money that exists through a **blockchain** network. A cryptocurrency, broadly defined, is virtual or digital money which takes the form of tokens or “coins.” While some cryptocurrencies have ventured into the physical world with credit cards or other projects, the large majority remain entirely intangible. The “crypto” in cryptocurrencies refers to complicated cryptography which allows for the creation and processing of digital currencies and their transactions across decentralized systems. Alongside this important “crypto” feature of these currencies is a common commitment to decentralization; cryptocurrencies are typically developed as code by teams who build in mechanisms for issuance (often, although not always, through a process called “mining”) and other controls.

Cryptocurrency refers to a type of digital money that is secured by cryptography, making it almost impossible to counterfeit or double-spend. It exists through decentralized networks based on blockchain technology, which is essentially a ledger that is stored through a network of computers. The significant feature of cryptocurrencies is that they are not issued by a central bank or government, which makes them free from the hindrance of government intervention or manipulation.

### **Digital Money within Financial Services**

Nowadays, a growing number of banks and other financial service companies facilitate digital money transfers and other online transactions that wire or transfer money between parties across long distances. Digital money’s assisted in the globalization of

economies around the world since trade is made more easily by sending and receiving digital money.

Digital money eliminates the need to physically transfer money; furthermore, banking is made much more convenient by allowing people to perform their personal banking without even the need to visit a physical branch or carry cash.

On the other hand, banks are reducing their retail employee headcount to meet the trend of digital money. Many branches are closed since they become redundant when more people increasingly bank with digital money. It comes at a cost, however, as the banks are not able to maintain personal relationships with customers and create any sort of loyalty. In addition, banks cannot cross-sell their other products without in-person sales opportunities.

### **Risks of Digital Money**

Payment fraud is one significant risk that can be attributed to the increasing use of digital money. Payment fraud can be committed in many forms. However, in general, it includes fraudulent or unauthorized transactions completed by a cybercriminal. Some common forms of payments fraud include:

- Fraudulent payments
- Illegal payments
- Internal manipulation
- Data theft
- Breach of embargos and sanctions

Because money is not transferred physically, it is impossible to know who is on the other side of a transaction. It gives rise to opportunities for cybercriminals to gain access to sensitive information or scam people through digital money.

Although payment security's been increasing, the complexity of which cybercriminals commit fraud is becoming increasingly complex as well. Payments fraud activity is continuing to rise, and it shows no signs of declining.

Modern-day cybercriminals are becoming craftier than ever, continuously exploiting new weaknesses and devising different methods of manipulating digital money. Scammers are very persistent in their efforts to attack payment systems. If they face challenges on a particular method, they will just pivot and shift their focus to alternative payment methods.

### **Advantages of Digital Currency**

Digital currencies bring significant advantages to the market. For one, they provide users with a more streamlined alternative. Digital currency payments as both instantaneous and low-cost. Additionally, they introduce a higher level of record-keeping and transparency to the sector.

### **Peer-to-Peer Transactions**

Digital currencies accomplish these tasks via a peer-to-peer transaction protocol. Just like when you hand someone a piece of fiat currency, digital currency requires no intermediaries to function. This reduction of third-parties within the transaction increases efficiency. Additionally, it significantly reduces transaction times and costs.

These advantages really come to light when discussing cross-border payments. If you have ever attempted to send money internationally, you know that the process is time-consuming and involves multiple checks. Additionally, the costs of sending money internationally can be as high as 7 percent according to reports. In fact, your pricing will depend heavily on your choice of financial institutions.

Also, the international exchange rate can eat up a large percentage of your funds when sending money across borders. Digital currencies can eliminate these fees as many operate in a borderless fashion. Cryptocurrencies such as Ripple's XRP specifically eliminate these concerns for major banking institutions seeking to send funds.

### **History of Digital Currencies**

*The history of digital money dates back to the invention of the internet. There were difficulties getting the population to adopt the use of digital money in the early days; however, as people become more comfortable with technology, and the technology itself becomes more safe and secure, more people are now willing to utilize digital monies. PayPal is considered one of the first successful companies to bring the idea of easy-use digital financial transactions to mass adoption.*

An American computer scientist by the name of David Chaum is credited with developing the first concept for digital currencies way back in 1983. By 1990, Chaum created a working model of his theory dubbed – DigiCash. The concept was years ahead of its time. Consequently, it never gained the momentum needed to survive in the market.

The first recorded public use of digital currency in a wide-scale emerged in 1996. The currency, known as e-gold secured millions of active users before it was shut down by government officials in 2008. From that point, a myriad of corporate-sponsored digital currencies entered the market.

All of these digital currencies encountered a problem known as “double-spend.” Basically, developers struggled to develop ways to ensure that each digital currency could only be spent one time during transactions. This issue saw resolution with the introduction of the world's first Cryptocurrency – Bitcoin. The currencies modeled after Bitcoin are collectively called altcoins, and in some cases “shitcoins,” and have often tried to present themselves as modified or improved versions of Bitcoin. While some of these currencies may have some impressive features that Bitcoin does not, matching the level of security that Bitcoin's networks achieves has largely yet to be seen by an altcoin.

### **Bitcoin (BTC)**

Bitcoin marked a change in financial theory within the market. For the first time in history, digital money filled the three primary functions of currency. It was a medium of exchange, a unit of account, and a store of value. Additionally, it was scarce, unduplicable, and portable.

Importantly, Bitcoin solved the double-spend issue through the integration of timestamped cryptographic blocks. Bitcoin utilizes part of the time stamp in the hashing algorithm of the following block. As such, a hacker would need to redo the entire blockchain to alter it. In this way, Bitcoin became the first immutable and unalterable digital currency in existence.

Bitcoin adoption hit a fevered pitch in 2017. At that time, Bitcoin saw an all-time market value of just under \$20,000 per coin. However, the added network usage created

major congestion. As such, it highlighted scalability issues within the network. These issues led to the creation of a number of Bitcoin spin-offs. Most famously Bitcoin Cash.

Today, the crypto market has thousands of currencies. Additionally, Bitcoin's scalability concerns are being addressed via an off-chain protocol known as the Lightning Network. This protocol uses private payment channels to eliminate much of the congestion that plagued the network in 2017.

### **The 5 Most Important Cryptocurrencies Other Than Bitcoin**

Bitcoin has not just been a trendsetter, ushering in a wave of cryptocurrencies built on a decentralized peer-to-peer network, it's become the de facto standard for cryptocurrencies, inspiring an ever-growing legion of followers and spinoffs.

There are more than 4,000 cryptocurrencies in existence as of January 2021. While many of these cryptos have little to no following or trading volume, some enjoy immense popularity among dedicated communities of backers and investors.

Beyond that, the field of cryptocurrencies is always expanding, and the next great digital token may be released tomorrow. While Bitcoin is widely seen as a pioneer in the world of cryptocurrencies, analysts adopt many approaches for evaluating tokens other than BTC. It's common, for instance, for analysts to attribute a great deal of importance to the ranking of coins relative to one another in terms of market cap. We've factored this into our consideration, but there are other reasons why a digital token may be included in the list, as well.

#### **1. *Ethereum (ETH)***

The applications on Ethereum are run on its platform-specific cryptographic token, ether. Ether, launched in 2015, is currently the second-largest digital currency by market cap after Bitcoin, although it lags behind the dominant cryptocurrency by a significant margin. As of January 2021, ether's market cap is roughly 19% of Bitcoin's size.

In 2021 Ethereum plans to change its consensus algorithm from proof-of-work to proof-of-stake. This move will allow Ethereum's network to run itself with far less energy as well as improved transaction speed. Proof-of-stake allows network participants to "stake" their ether to the network. This process helps to secure the network and process the transactions that occur. Those who do this are rewarded ether similar to an interest account. This is an alternative to Bitcoin's proof-of-work mechanism where miners are rewarded more Bitcoin for processing transactions.

#### **2. *Litecoin (LTC)***

Litecoin, launched in 2011, was among the first cryptocurrencies to follow in the footsteps of Bitcoin and has often been referred to as "silver to Bitcoin's gold." It was created by Charlie Lee, an MIT graduate and former Google engineer. Litecoin is based on an open-source global payment network that is not controlled by any central authority and uses "script" as a proof of work, which can be decoded with the help of CPUs of consumer-grade. Although Litecoin is like Bitcoin in many ways, it has a faster block generation rate and hence offers a faster transaction confirmation time. Other than developers, there are a growing number of merchants who accept Litecoin. As of January 2021, Litecoin had a market cap of \$10.1 billion and a per token value of \$153.88, making it the sixth-largest cryptocurrency in the world.

### **3. Cardano (ADA)**

Cardano is an “Ouroboros proof-of-stake” cryptocurrency that was created with a research-based approach by engineers, mathematicians, and cryptography experts. The project was co-founded by Charles Hoskinson, one of the five initial founding members of Ethereum. After having some disagreements with the direction Ethereum was taking, he left and later helped to create Cardano.

Cardano aims to be the financial operating system of the world by establishing decentralized financial products similarly to Ethereum as well as providing solutions for chain interoperability, voter fraud, and legal contract tracing, among other things. As of January 2021, Cardano has a market capitalization of \$9.8 billion and one ADA trades for \$0.31.

### **4. Polkadot (DOT)**

Polkadot is a unique proof-of-stake cryptocurrency that is aimed at delivering interoperability between other blockchains. Its protocol is designed to connect permissioned and permissionless blockchains as well as oracles to allow systems to work together under one roof.

Polkadot’s core component is its relay chain that allows the interoperability of varying networks. It also allows for “parachains,” or parallel blockchains with their own native tokens for specific use cases.

Where this system differs from Ethereum is that rather than creating just decentralized applications on Polkadot, developers can create their own blockchain while also using the security that Polkadot’s chain already has. With Ethereum, developers can create new blockchains but they need to create their own security measures which can leave new and smaller projects open to attack, as the larger a blockchain the more security it has. This concept in Polkadot is known as shared security.

Polkadot was created by Gavin Wood, another member of the core founders of the Ethereum project who had differing opinions on the project's future. As of January 2021, Polkadot has a market capitalization of \$11.2 billion and one DOT trades for \$12.54.

### **5. Bitcoin Cash (BCH)**

Bitcoin Cash (BCH) holds an important place in the history of altcoins because it is one of the earliest and most successful hard forks of the original Bitcoin. In the cryptocurrency world, a fork takes place as the result of debates and arguments between developers and miners. Due to the decentralized nature of digital currencies, wholesale changes to the code underlying the token or coin at hand must be made due to general consensus; the mechanism for this process varies according to the particular cryptocurrency.

When different factions can’t come to an agreement, sometimes the digital currency is split, with the original chain remaining true to its original code and the new chain beginning life as a new version of the prior coin, complete with changes to its code.

BCH began its life in August of 2017 as a result of one of these splits. The debate that led to the creation of BCH had to do with the issue of scalability; the Bitcoin network has a limit on the size of blocks: one megabyte (MB). BCH increases the block size from one MB to eight MB, with the idea being that larger blocks can hold more transactions within them, and therefore the transaction speed would be increased. It also makes other

changes, including the removal of the Segregated Witness protocol which impacts block space. As of January 2021, BCH had a market cap of \$8.9 billion and a value per token of \$513.45.

### **The Future of Digital Currency**

Given the current state of the world, digital currencies are set to explode in the coming year (2020). Today, there is a robust digital infrastructure in place to support the mass adoption of these currencies. Additionally, their development is being catapulted into the spotlight thanks to the Coronavirus pandemic. You can expect to see this trend continue as more people across the world gain access to high-speed internet. For now, digital currencies such as Bitcoin continue to reshape the international communities' definition of money.

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