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ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ УНІВЕРСИТЕТ
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Методичні вказівки
для організації самостійної роботи
з дисципліни

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Укладач К. А. Шевцова

Рецензент доц. О. Л. Ільєнко

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Unit 1 Transport

Exercise 1. Read and translate the text.

Transportation.

Transport or **transportation** is the movement of people, animals and goods from one location to another.

Modes of transport include air, rail, road, water, cable, pipeline and space. The field can be divided into infrastructure, vehicles and operations. Transport is important because it enables trade between people, which is essential for the development of civilizations.

Transport infrastructure consists of the fixed installations including roads, railways, airways, canals and pipelines and terminals such as airports, railway stations, bus stations, warehouses, trucking terminals, refueling depots (including fueling docks and fuel stations) and seaports. Terminals may be used both for interchange of passengers and cargo and for maintenance.

Vehicles traveling on these networks may include automobiles, bicycles, buses, trains, trucks, people, helicopters and aircraft. Operations deal with the way the vehicles are operated, and the procedures set for this purpose including financing, legalities and policies. In the transport industry, operations and ownership of infrastructure can be either public or private, depending on the country and mode.

Passenger transport may be public, where operators provide scheduled services, or private. Freight transport has become focused on containerization, although bulk transport is used for

large volumes of durable items. Transport plays an important part in economic growth and globalization, but most types cause air pollution and use large amounts of land. While it is heavily subsidized by governments, good planning of transport is essential to make traffic flow and restrain urban sprawl.

Exercise 2. Answer the following questions.

1. In what kind of transport do operators provide scheduled services?
2. How can you define the notion transport or transportation?
3. Why is transport essential for the development of civilizations?
4. What does transport infrastructure consist of?
5. What do transport procedures include?
6. What are the transport fixed installations?
7. What impact does transport cause to the environment?
8. How can you describe the role of transportation in the process of globalization?
9. How can the transport terminals be used?
10. What are the kinds of transport infrastructure? What do they depend on?

Exercise 3. Translate and learn the following active vocabulary.

transport	
mode of transport	
location	
refueling deport	
scheduled service	
freight transport	
coach	
road	
rail	
air	
fuel station	
traffic flow	
urban sprawl	
lorry	
water	
cable	
pipeline	
truck	
passenger	
containerization	

minibus	
train	
goods	
warehouse	
aircraft	
trucking terminal	
vehicle	
space	
water	
cable	
pipeline	
truck	
passenger	
containerization	
minibus	
train	
goods	
warehouse	
aircraft	
trucking terminal	
vehicle	
space	
gross national product	

Exercise 4. Make up ten sentences using your active vocabulary.

Exercise 5. Match forms of transport to their descriptions.

1. car	a) a large vehicle that people pay to travel on;
2. train	b) a vehicle with four wheels and an engine, that can carry a small number of passengers;
3. bus	c) a small bus with seats for six to twelve people
4. coach	d) a set of several carriages that are connected to each other and pulled along a railway line by an engine;
5. minibus	e) a large vehicle for carrying heavy goods
6. lorry	f) a large carriage pulled by horses and used in the past for carrying passengers

Exercise 6. Revise Present Grammar Tenses. Put the verbs in Present Indefinite or Present Continuous.

1. I... (eat) porridge every morning.
2. We ... (do) our shopping in the afternoon.
3.I am sorry to say he often ... (cheat) at cards.
4.I... (grow) a beard now.
5. Every year he ... (spend) his holidays in France.
6. A hero is a person who ... (show) magnificent courage.
7. At this moment we ... (do) an exercise on tenses.
8.I... (live) in Glasgow, which is my home-town.
9. Hullo! Who ... (knock) at the door?
10. What... (make) clocks tick?
11. It... (rain), take your umbrella.
12. Mother is in the kitchen, she ... (make) somecakes.
13. The sun ... (rise) in the east.

14. What... (this word, mean)?
15. Leave me alone, I... (work).
16. Run downstairs, your uncle ... (wait) for you.
17. My watch is out of order and the watchmaker ...(repair) it.
18. Fetch a doctor! The poor man ... (die)!
19. What a noise! What on earth ... (happen)?
20. What a smell! I expect something ... (burn).
21. That cigar ... (smell) dreadful!
22. What cinema ... (you, go) to this evening?
23. Bears ... (like) honey.
24. Look at cautious Joe! He ... (smell) his soup before he even sips it!
25. ... (you, recognize) that man over there?
26. What... (we, have) for dinner tonight?
27.I... (go) to buy a new hat tomorrow.
28.I... (not, feel) well, get me a glass of water.
29.... (you, have) a letter for me, please?
30. Keep quiet, we ... (listen) to the music.
31. ... (you, hear) anything?
32.I... (want) you to do that at once.
33. Men ... (often, wonder) why women wear curious hats.
34. That silly boy ... (always, make) stupid remarks!
35. ... (you, know) how much that costs?
36. He says he ... (not, leave) his job until he is forced to do so.
37. You ... (eat) too much, so of course you are fat.
38. What train ... (you, take) for your journey next week?
39. How long ... (it, take) you to dress, usually?
40. That ... (not, matter), I can easily get another pencil.

Unit 2 The Role of Transportation.

Exercise 1. Read and translate the text.

The Role of Transit.

Transportation has a pervasive influence on modern society. It is very important economically: Transportation activity amounts to about one-fifth of the U.S. gross national product (GNP). Transportation has social and cultural impacts; it shares our lifestyles.

The technologies used in transportation have evolved through history. In the 19th century, railroads were the principal means of travel for long distances. Today, railroads have been largely replaced by automobiles and aviation. Within cities, various forms of public transportation (ranging from horse-drawn carriages to electric subway trains were dominant in the hundred years from 1820 to 1920. Since then the automobile has become the most popular means of urban travel, but mass transit has continued to play a role.

For decades there has been talk about the "urban transportation problem". The urban transportation problem is actually a complex bundle of interrelated problems. They can be grouped in three major categories: *congestion, mobility* and *ancillary impacts*.

Congestion causes increased costs for travelers and freight movement, loss of time, accidents, and psychological strain. This is not simply congestion on streets and highways. There is also congestion of transit vehicles during peak periods, congestion of pedestrians on sidewalks frequently occurs in the downtown areas of large cities at lunchtime. In Holland there is a congestion of bicycles.

Mobility, or *accessibility*. Our society requires a great deal of travel, but people do not have equal abilities to travel or equal access to the transportation system. In the United States,

we have emphasized the automotive highway system of transportation. But some people are unable to use this system. Not all these people live in large cities, of course; some live in suburbs, small towns and rural areas.

Ancillary impacts:

- **Accidents**. While U.S. highway accident rates are lower than those in other countries, the annual death toll of more than 40,000 is still a matter of concern.
- **Energy consumption**. The transportation sector relies almost wholly on petroleum for energy and accounts for 65% of the U.S. demand for oil. Transit has the potential to reduce oil consumption (European cities, which are more transit-oriented, use much less energy per capita than their U.S. counterparts). The current approach is to make automobiles more fuel-efficient. One good argument for expanding transit systems is the uncertainty about the future energy situation.
- **Environmental impacts** include air and water pollution and noise. Smog remains a problem in more than 100 cities.
- **Land consumption.** The transportation system occupies over 30% of the developed land in most U.S. cities. In some cities streets and parking take up 60 to 70% of the surface area.
- **Aesthetics.** Neither a parking lot nor a freeway nor a strip commercial street is very pleasant to look at.
- **Disruption of the urban fabric.** Major transportation routes can form physical barriers that divide neighborhoods, separate pupils from their schools, and cut off stores from their trade areas.
- **Land use.** Majority of people in the United States prefer living in a single-family homes in the suburbs. This depopulation of central cities have created difficult conditions for transit and caused rider ship to fall. It is uneconomic for transit to serve low density residential areas and scattered activity centers.

Despite everything, transit has a role as a standby or backup service, an alternative to the automobile that is available when needed. A sizable number of people in the United States think transit is beneficial.

Exercise 2. Answer the questions.

1. What is the role of transportation in modern society?
2. Following the history of transportation, name the major technologies of its evolution.
3. How do you understand the “urban transportation problem”?
4. What are the consequences of congestion for common people?
5. Why is mobility considered to be a problem for some people?
6. What ancillary impact should be eliminated first of all? Give your arguments.
7. Do people have equal abilities to travel or not? Give your examples.
8. Describe the environmental impact caused by transportation.
9. What is the economical importance of transportation?
10. What is the role of transit in your life?

Exercise 3. Translate and learn the following active vocabulary.

WORD/PHRASE	TRANSLATION
carriage	
subway	
congestion	
account	
smog	

mobility	
accident	
highway	
peak period	
energy	
oil	
pedestrian	
sidewalk	
bicycle	
suburb	
pollution	
demand	
petroleum	
parking	
energy consumption	
rout	
noise	
to reduce	
gross national product	

Exercise 4. Make up ten sentences using your active vocabulary.

Exercise 5. Read the following sentences, underline the main verb and state the verb: Active or Passive.

1. Railroads were developed in the 19th century and became the principal means of transportation.

2. Various forms of public transportation were dominant in the hundred years.

3. The ‘urban transportation system’ is grouped into three categories.

4. Smog remains a problem in more than 100 cities.

5. For decades there has been talk about ‘urban transportation system’.

6. Railroads have been largely replaced by automobiles and aviation.

Exercise 6. Make up a dialogue. “Transportation: Pros and Cons”. Use the following conversation phrases.

- To begin with….
- Besides that,…..
- The most important thing is….
- T he real problem is….
- I’m convinced that…..
- That’s probably true, but……
- Generally speaking ……
- That’s just not true!

Exercise 7. Match forms of transport to their definitions.

van	a vehicle with two wheels that you ride by pushing its pedals with your feet
motorbike	a vehicle used especially for carrying goods, which is smaller than a truck and has a roof and usually no windows at the sides;
moped	a type of small, less powerful motorcycle with small wheels or a child's vehicle with two small wheels, an upright handle, and a narrow board that you stand on with one foot, while the other foot pushes against the ground
scooter	a small fast two-wheeled vehicle with an engine
bicycle	a vehicle for passengers, which travels along metal tracks in the street
tram	a small two-wheeled vehicle with an engine

Exercise 8. Describe advantages and disadvantages of the transport vehicles that you have read in the text. What were the historical factors that influenced their improvement or decline? Use the following phrases.

- First of all…
- The trouble is (was)….
- The awful thing is (was)….
- As a rule….
- I'm pretty sure that…..
- In my opinion….
- Oh, I almost forgot….
- Not to mention the fact that

Exercise 9. Revise Past Simple (Indefinite) and Past continuous Tense. Put he verb into the correct form.

1 .George …….(fall) off the ladder while he ……..(paint0 the ceiling.
2. Last night I ……(read) in bed when suddenly I ……..(hear) a scream.
3. ……..(you/watch) television when I phoned you?
4. Ann……(wait) for me when I ……(arrive).
5. I……..(break) a plate last night. I ……..(do) the washing up when it……(slip) out of my hand.
6. I ……(not/drive) very fast when the accident ……(happen).
7. Tom ……..(take) a photograph of me while I …….(not/look).
8. We ……..(you/go) out because it …….(rain).
9. What ……. (you /do) at this time yesterday?
10. I ……. (see) Carol at the party. She …… (wear) a really beautiful dress.

Unit 3. The History of Urban Transport.

Exercise 1. Read and translate the text.

Electricity Subway Epoch.

The first subway in the world using electricity opened in London in 1890. In 1897 Sprague made another important contribution by inventing *the multiple-unit system*, in which every car has motors, all controlled by the train operator in the first car. It meant that you could add cars to trains without any diminution of power, since each car had the correct amount of propulsive power for itself. Individually powered cars also have faster acceleration, which increases average speed and reduces operating cost. All subway elevated systems in the world used this system today.

One of the most famous subways is in Moscow, where the first line was opened in 1935. The older stations are elaborately decorated with statues, chandeliers, and marble walls, but newer ones are more austere. The system has grown continually and carries more passengers than any other in the world, although Tokyo is a close second.

Next stage of technological progress was the internal-combustion engine, fueled by gasoline. Credit for inventing the automobile is shared by two Germans, Karl Benz and Gottlieb Daimler. After both died, their companies merged to form Mercedes-Benz. The pioneering developments took place in Europe, but the United States became the leading country in the manufacture of automobiles, largely because of Henry Ford. Ford got the idea of building a high quality, low-price vehicle that could be sold in large numbers to average people for everyday use. He wasn't the only one with this idea, but he was the one who succeeded. He kept improving the manufacturing process until he attained full assembly–line production in 1914.

Alfred P. Sloan, another major figure in the history of the U.S. automobile industry, became president of General Motors in 1923. Sloan was not an expert in production, as Ford was, but he was a strong administrator and a marketing genius. He introduced two practices which may people now criticize but which boosted GM's success: the annual model change and offering a wide variety of models and enticing buyers to "trade up" to a more expensive model.

The automobile was soon accompanied by the truck, the tractor, and the bus. The first motor bus service in the world began in London in 1899 and by 1911 horse-drawn omnibuses had been completely replaced with motor buses. Because of the narrow streets, double-decker buses were designed to increase seating capacity.

The pace of transit-related inventions during the 19th century was very rapid. In 75 years the country went from the horse-drawn omnibus to the motor bus and electric subway trains. All the major technologies were developed by 1900. In the last 95 years there have been incremental improvements but no breakthroughs comparable to those of the 19th century.

Exercise 2. Answer the following questions.

1. What country is the leading in manufacture of automobiles?
2. Where and when was opened the first subway?
3. How can you describe Moscow subway?
4. What subway does carry more passengers that any other in the world?
5. Why did Henry Ford succeed in manufacture of automobiles?
6. Who was the president of General Motors in 1923?
7. What were GM's practices that succeeded?
8. Alfred P. Sloan was a major automobile manufacturer,

wasn’t he?

9. When were all the major technologies developed?

Exercise 3. Translate and learn the active vocabulary.

Word/Phrase	Translation
contribution	
to invent	
multiple-unit system	
power	
gasoline	
high quality	
low-price	
manufacture	
acceleration	
average speed	
cost	
to carry passengers	
internal-combustion engine	
omnibus	
seating capacity	
to succeed	

Exercise 4. Organize these kinds of vehicles in the order of their chronological appearance. Give a short description for every kind.

Cable car
Coach
Train
Diligence

Automobile
Bus
Stagecoach
Omnibus
Hackney carriage
Streetcar

Exercise 5. Annotate the text using the phrases.

The title of the text is …; The author of the text described ……; The purpose of this article is …..; It is important to underline that …….; It is necessary to emphasize that……; The author tells us about ……; It must be added that ….etc.

Exercise 6. Find the pieces of information with the following dates as quickly as you can.

1900
1935
1897
1890
1923
1914
1911
1899

Exercise 7. Revise degrees of comparison of adjectives and adverbs. Form the degrees of comparison of the following adjectives and adverbs:

Attentive, backward, bad, brittle, careful, cheap, clever, close, comfortable, considerable, convenient, dangerous, difficult, dirty, dry, early, easy, expensive, famous, fast, good, happy, hard, heavy, high, hot, important, late, lazy, little, loud, lucky, modern, narrow, necessary, powerful, quick, rapid, reliable, sad, safe, simple, slow, small, soft, swift, suitable, useful, wide.

Unit 4 Mode of Transport. (I)

Exercise 1. Read and translate the text.

Mode of Transport. (Part 1)

A mode of transport is a solution that makes use of a particular type of vehicle, infrastructure and operation. The transport of a person or of cargo may involve one mode or several of the modes, with the latter case being called intermodal or multimodal transport. Each mode has its own advantages and disadvantages, and will be chosen for a trip on the basis of cost, capability, and route.

Human powered transport, a form of sustainable transportation, is the transport of people and/or goods using human muscle-power, in the form of walking, running and swimming. Modern technology has allowed machines to enhance human power. Human-powered transport remains popular for reasons of cost-saving, leisure, physical exercise, and environmentalism; it is sometimes the only type available, especially in underdeveloped or inaccessible regions.

Although humans are able to walk without infrastructure, the transport can be enhanced through the use of roads, especially when using the human power with vehicles, such as bicycles and inline skates. Human-powered vehicles have also been developed for difficult environments, such as snow and water, by watercraft rowing and skiing; even the air can be entered with human-powered aircraft.

Animal-powered transport is the use of working animals for the movement of people and goods. Humans may ride some of the animals directly, use them as pack animals for carrying goods, or harness them, alone or in teams, to pull sleds or wheeled vehicles.

A fixed-wing aircraft, commonly called airplane, is a heavier-than-air craft where movement of the air in relation to the wings is used to generate lift. The term is used to distinguish this from rotary-wing aircraft, where the movement of the lift surfaces relative to the air generates lift. A gyroplane is both fixed-wing and rotary-wing. Fixed-wing aircraft range from small trainers and recreational aircraft to large airliners and military cargo aircraft.

Two things necessary for aircraft are air flow over the wings for lift and an area for landing. The majority of aircraft also need an airport with the infrastructure to receive maintenance, restocking, refueling and for the loading and unloading of crew, cargo and passengers. While the vast majority of aircraft land and take off on land, some are capable of take off and landing on ice, snow and calm water.

The aircraft is the second fastest method of transport, after the rocket. Commercial jets can reach up to 955 kilometers per hour (593 mph), single-engine aircraft 555 kilometers per hour (345 mph). Aviation is able to quickly transport people and limited amounts of cargo over longer distances, but incur high costs and energy use; for short distances or in inaccessible places helicopters can be used. As of April 28, 2009 *The Guardian* article notes that, "the WHO estimates that up to 500,000 people are on planes at any time."

Rail transport is where a train runs along a set of two parallel steel rails, known as a railway or railroad. The rails are anchored perpendicular to ties (or sleepers) of timber, concrete or steel, to maintain a consistent distance apart, or gauge. The rails and perpendicular beams are placed on a foundation made of concrete, or compressed earth and gravel in a bed of ballast. Alternative methods include monorail and maglev.

A train consists of one or more connected vehicles that run on the rails. Propulsion is commonly provided by a locomotive, that hauls a series of unpowered cars, that can carry passengers or freight. The locomotive can be powered by steam, diesel or by electricity supplied by trackside systems. Alternatively, some or all the cars can be powered, known as a multiple unit. Also, a train can be powered
by horses, cables, gravity, pneumatics and gas turbines. Railed vehicles move with much less friction than rubber tires on paved roads, making trains more energy efficient, though not as efficient as ships.

Intercity trains are long-haul services connecting
cities; modern high-speed rail is capable of speeds up to
350 km/h (220 mph), but this requires specially built
track. Regional and commuter trains feed cities from suburbs and surrounding areas, while intra-urban transport is performed by high-capacity tramways and rapid transits, often making up the backbone of a city's public transport. Freight trains traditionally used box cars, requiring manual loading and unloading of the cargo. Since the 1960s, container trains have become the dominant solution for general freight, while large quantities of bulk are transported by dedicated trains.

Exercise 2 Answer the following questions.

1. What kind of transport is popular in underdeveloped regions?
2. What kinds of animals are used for transportation?
3. What are the disadvantages of aviation?
4. What are the first and the second fastest methods of transport?

5. What does an airport infrastructure include?
6. What are the two things necessary for aircraft?
7. How could you also call a fixed-wing aircraft?
8. Why is human-powered transport popular?
9. What is multinational transport?
10. How would you define a human-powered transport?

Exercise 3. Translate and learn the active vocabulary.

WORD/PHRASE	TRANSLATION
Intermodal transport	
Trip	
Rout	
Capability	
Muscle power	
Cost-saving	
Leisure	
Inline skate	
Water-craft	
Fixed-wing aircraft	
To generate	
Airflow	
Landing area	
To restock	
To refuel	
Crew	
Loading/unloading	
Jet	
Steel rails	

Propulsion	
Freight	
Long-haul	
Cargo	

Exercise 4. Make up ten sentences using your active vocabulary.

Exercise 5. Annotate the text using the phrases.

The title of the text is ……; The author of the text described……; The purpose of this article is …..; It is important to underline that…….; It is necessary to emphasize that……; The author tells us about……; It must be added that….etc.

Exercise 6. Say whether the following statements are true (T.) or false (F.) and if they are false say why.

STATEMENT	TRUE	FAULSE
1. Each mode of transport has only advantages and will be chosen for a trip on the basis of cost, capability, and route.		
2. A train consists of one or more connected vehicles that run on the rail.		
3. Intercity trains are short-haul services connecting villages.		

4. Two things necessary for watercraft are air flow over the wings for lift and an area for landing.		
5. Human-powered transport is the use of working animals for the movement of people and goods.		
6. A fixed-wing aircraft, commonly called a train, is a heavier-than-air craft where movement of the air in relation to the wings is used to generate lift.		
7. Aviation is able to quickly transport people and limited amounts of cargo over longer distances, and incur high costs and energy use.		
8. Humans aren’t able to walk without infrastructure, the transport can be enhanced through the use of roads, especially when using the human power with vehicles.		
9. A train consists of one or more connected planes that run on the rails.		
10. Commercial jets can reach up to 90 kilometers per hour, single-engine aircraft 55 kilometers per hour.		

Exercise 7. Revise Past Indefinite and Present Perfect. Put the verbs into the correct tense forms.

1. I ……(*to lose)* my passport last month, and nobody……(*to find)* it yet.
2. Two years ……(*to pass)* since he left.
3. They……..(*to move)* to Washington several years ago.
4. The engineer …….(*to show)* his foreign friends the bridge in the building of which he *to take part* in 1980.
5. He…… (*not/ to decide)* yet what to do.
6. We ……(*to know)* each other since childhood.
7. The journalists ……(*to ask)* me many questions at the yesterday's interview.
8. When … you …….(*to arrive)* in Prague? – I ……..(*to arrive)* here last September. So I…….. (*to live)* in this city for three months.
9. Are you still studying or … you already ……(*to find)* a job?
10. I…… (*to rush)* to the platform and …….. (*to get)* on the train.

Unit 5 Mode of Transport (II)

Exercise 1. Read and translate the text.

Mode of Transport. (Part 2)

A road is an identifiable route, way or path between two or more places. Roads are typically smoothed, paved, or otherwise prepared to allow easy travel; though they need not be, and historically many roads were simply recognizable routes without any formal
construction or maintenance. In urban areas, roads may pass through a city or village and be named as streets, serving a dual function as urban space easement and route.

The most common road vehicle is the automobile;
a wheeled passenger vehicle that carries its own motor. Other users of roads include buses, trucks, motorcycles, bicycles and pedestrians. As of 2002, there were 590 million automobiles worldwide. Road transport offers a complete freedom to road users to transfer the vehicle from one lane to the other and from one road to another according to the need and convenience. This flexibility of changes in location, direction, speed, and timings of travel is not available to other modes of transport. It is possible to provide door to door service only by road transport.

Automobiles offer high flexibility and with low capacity, but are deemed with high energy and area use, and the main source of noise and air pollution in cities; buses allow for more efficient travel at the cost of reduced flexibility.

Water transport is movement by means of a watercraft—such as a barge, boat, ship or sailboat—over a body of water, such as a sea, ocean, lake, canal or river. The need for buoyancy is

common to watercraft, making the hull a dominant aspect of its construction, maintenance and appearance.

In the 19th century the first steam ships were developed, using a steam engine to drive a paddle wheel or propeller to move the ship. The steam was produced in a boiler using wood or coal and fed through a steam external combustion engine. Now most ships have an internal combustion engine using a slightly refined type of petroleum called bunker fuel. Some ships, such as submarines, use nuclear power to produce the steam. Recreational or educational craft still use wind power, while some smaller craft use internal combustion engines to drive one or more propellers, or in the case of jet boats, an inboard water jet. In shallow draft areas, hovercraft are propelled by large pusher-prop fans. (See Marine propulsion.)

Although slow, modern sea transport is a highly efficient method of transporting large quantities of goods. Commercial vessels, nearly 35,000 in number, carried 7.4 billion tons of cargo in 2007. Transport by water is significantly less costly than air transport for transcontinental shipping; short sea shipping and ferries remain viable in coastal areas.

Pipeline transport sends goods through a pipe; most commonly liquid and gases are sent, but pneumatic tubes can also send solid capsules using compressed air. For liquids/gases, any chemically stable liquid or gas can be sent through a pipeline. Short-distance systems exist for sewage, slurry, water and beer, while long-distance networks are used for petroleum and natural gas.

Cable transport is a broad mode where vehicles are pulled by cables instead of an internal power source. It is most commonly used at steep gradient. Typical solutions include aerial tramway, elevators, escalator and ski lifts; some of these are also categorized as convey of transport.

Spaceflight is transport out of Earth's atmosphere into outer space by means of spacecraft. While large amounts of research have gone into technology, it is rarely used except to put satellites into orbit, and conduct scientific experiments. However, man has landed on the moon, and probes have been sent to all the planets of the Solar System.

Suborbital spaceflight is the fastest of the existing and planned transport systems from a place on Earth to a distant other place on Earth. Faster transport could be achieved through part of a low Earth orbit, or following that trajectory even faster using the propulsion of the rocket to steer it.

Exercise 2. Answer the following questions.

1. What is the difference between the ships of the 19th century and the modern ones?
2. Is there any difference between shipping by air or by water/
3. When were the first steam ships developed?
4. What kinds of a watercraft do you know?
5. What are the main disadvantages of automobile transport?”
6. How can be door to door service provided?
7. What are the main users of roads?
8. How a road can be defined?
9. What is the speed of a modern rail?

10. How would you define a rail transport?
11. What is the most efficient method of transporting large quantities of goods?
12. What kind of goods can be sent through a pipe?
13. How cable transport can be defined?
14. What way is spaceflight transport used in?

Exercise 3. Translate and learn the active vocabulary.

WORD/PHRASE	TRANSLATION
pedestrian	
to transfer	
lane	
timing	
door to door service	
flexibility	
capacity	
spaceflight	
barge	
sailboat	
buoyancy	
steam engine	
paddle wheel	
external/internal combustion	
bunter fuel	
vessel	
pipeline	
liquid	
cable	
maintenance	

Exercise 4. Make up ten sentences using your active vocabulary.

Exercise 5. Annotate the text using the phrases.

The title of the text is ……; The author of the text described……; The purpose of this article is …..; It is important to underline that…….; It is necessary to emphasize that……; The author tells us about……; It must be added that….etc.

Exercise 6. Say whether the following statements are true (T.) or false (F.) and if they are false say why.

STATEMENT	TRUE	FALSE
1. The most common road vehicle is the automobile; a wheeled passenger animal that carries its own motor.		
2. Spaceflight is transport out of Earth's atmosphere into outer space by means of watercraft.		
3. Pipeline transport sends goods through space; most commonly liquid and gases are sent.		
4. Slow, modern space transport is a highly efficient method of transporting large quantities of goods.		
5. In the 19th century the first steam ships were developed, using a steam engine to drive a paddle wheel or propeller to move the ship.		

6. Roads are typically smoothed, paved, or otherwise prepared to allow easy travel.		
7. Commercial vessels, nearly 3,500 in number, carried 7.4 billion tons of cargo in 2007.		
8. Suborbital spaceflight is the fastest of the existing and planned transport systems from a place on Earth to a distant other place on Earth.		
9. Transport by air is significantly less costly than air transport for transcontinental shipping.		
10. Cable transport is a broad mode where vehicles are pulled by cables instead of an internal power source.		

Exercise 7. Revise the usage of prepositions. Fill in the blanks with the prepositions if necessary.

1. The management of the Oktyabrskaya Railway pays much attention ___ the improvement of passengers' service ___ the terminals.
2. Steam locomotives were not able to haul very heavy trains ___ a high speed.
3. There were no means of direct communication ___ the telephone was invented.
4. He was invited ___ the conference but he didn't accept the invitation.
5. The fog prevented the planes ___ taking off.
6. The first passenger cars were lighted ___ candles; later candles were replaced ___ oil and gas lamps.

7. This new train develops a very high speed since it is equipped___ powerful engines.
8. Steel which is used ___ the production ___ rails must be of high quality.
9. The incandescent lamp was invented ___ Thomas Edison.
10. The switch [стрелочный перевод] is the mechanism which is used to move the trains ___ one track ___ another. 11. There are a number ___ questions I'd like to speak ___ you ___.
12. Their decision will depend ___ how interesting your offer is.
13. The railway station is an hour's drive ___ my house.
14. The traffic in the city center was delayed ___ the demonstration.

Unit 6 Elements and Infrastructure of Transport.

Exercise 1. Read and translate the text.

Infrastructure of Transportation.

Infrastructure is the fixed installations that allow a vehicle to operate. It consists of a way, a terminal and facilities for parking and maintenance. For rail, pipeline, road and cable transport, the entire way the vehicle travels must be built up. Air and water craft are able to avoid this, since the airway and seaway do not need to be built up. However, they require fixed infrastructure at terminals.

Terminals such as airports, ports and stations, are locations where passengers and freight can be transferred from one vehicle or mode to another. For passenger transport, terminals are integrating different modes to allow riders to interchange to take advantage of each mode's advantages. For instance, airport rail links connect airports to the city centers and suburbs. The terminals for automobiles are parking lots, while buses and coaches can operate from simple stops. For freight, terminals act as transshipment points, though some cargo is transported directly from the point of production to the point of use.

The financing of infrastructure can either be public or private. Transport is often a natural monopoly and a necessity for the public; roads, and in some countries railways and airports are funded through taxation. New infrastructure projects can have high cost, and are often financed through debt. Many infrastructure owners therefore impose usage fees, such as landing fees at airports, or toll plazas on roads. Independent of this, authorities may impose taxes on the purchase or use of vehicles. Because of poor forecasting and overestimation of

passenger numbers by planners, there is frequently a benefits shortfall for transport infrastructure projects.

A vehicle is any non-living device that is used to move people and goods. Unlike the infrastructure, the vehicle moves along with the cargo and riders. Unless being pulled by a cable or muscle-power, the vehicle must provide its own propulsion; this is most commonly done through a steam engine, combustion engine, electric motor, a jet engine or a rocket, though other means of propulsion also exist. Vehicles also need a system of converting the energy into movement; this is most commonly done through wheels, propellers and pressure.

Vehicles are most commonly staffed by a driver. However, some systems, such as people movers and some rapid transits, are fully automated. For passenger transport, the vehicle must have a compartment for the passengers. Simple vehicles, such as automobiles, bicycles or simple aircraft, may have one of the passengers as a driver.

Exercise 2. Answer the following questions.

1. What allows vehicle to operate?
2. What does infrastructure consist of?
3. Infrastructure must always be built, mustn’t it?
4. How could you describe a vehicle?
5. How does vehicle provide its own propulsion?
6. How does vehicle convert the energy into movement?
7. What links of financing of infrastructure do you know?

8. Is it possible to finance infrastructure through debt?
9. Is it always necessary for a vehicle to have a driver?
10. What is the function of airport rail links?

Exercise 3. Translate and learn the active vocabulary.

WORD/PHRASE	TRANSLATION
installation	
infrastructure	
facility	
to avoid	
airway	
seaway	
terminal	
to integrate	
rail link	
transshipment point	
taxation	
to be funded	
fee	
toll plaza	
purchase	
overestimation	
benefit	
shortfall	
pressure	
wheel	
rapid transit	
compartment	

Exercise 4. Make up ten sentences using your active vocabulary.

Exercise 5. Annotate the text using the phrases.

The title of the text is ……; The author of the text described……; The purpose of this article is …..; It is important to underline that…….; It is necessary to emphasize that……; The author tells us about……; It must be added that….etc.

Exercise 6. Revise Present Perfect and Present Perfect Continuous. Put the verb into the correct form.

1. I ……..(lost) my key. Can you help me look for it.
2. You look tired. …….(you/work) hard?
3. ‘Sorry I’m late’ ‘That’s all right. I ……(not/wait) long.
4. Hello! I ……(clean) the windows. So far I ……..(clean) five of them and there are two more to do.
5.There’s a strange smell in here. ……(you/cook) something?

6. My brother is an actor. He …….(appear)in several films.
7. Look! Somebody ……..(break) that window.
8. I……..(read) the book you gave me but I ……(not/finish)it yet.
9. Somebody …….(smoke) all my cigarettes. The packet is empty.
10. Tom’s hands are very dirty. He ……(repair) the car.

Unit 7. Private and Public Transport

Exercise 1. Read and translate the text.

The Owners of Transport.

Private transport is only subject to the owner of the vehicle, who operates the vehicle themselves. For public transport and freight transport, operations are done through private enterprise or by governments. The infrastructure and vehicles may be owned and operated by the same company, or they may be operated by different entities. Traditionally, many countries have had a national airline and national railway. Since the 1980s, many of these have been privatized. International shipping remains a highly competitive industry with little regulation, but ports can be public owned.

Relocation of travelers and cargo are the most common uses of transport.

However, other uses exist, such as the strategic and tactical relocation of armed forces during warfare, or the civilian mobility construction or emergency equipment.

Passenger transport, or travel, is divided into public and private transport. Public transport is scheduled services on fixed routes, while private is vehicles that provide ad hoc services at the riders desire. The latter offers better flexibility, but has lower capacity, and a higher environmental impact. Travel may be as part of daily commuting, for business, leisure or migration.

Short-haul transport is dominated by the automobile and mass transit. The latter consists of buses in rural and small cities, supplemented with commuter rail, trams and rapid transit in larger cities. Long-haul transport involves the use of the automobile, trains, coaches and aircraft, the last of which have

become predominantly used for the longest, including intercontinental travel. Intermodal passenger transport is where a journey is performed through the use of several modes of transport; since all human transport normally starts and ends with walking, all passenger transport can be considered intermodal. Public transport may also involve the intermediate change of vehicle, within or across modes, at a transport hub, such as a bus or railway station.

Taxis and buses can be found on both ends of the public transport spectrum. Buses are the cheaper mode of transport but are not necessarily flexible, and taxis are very flexible but more expensive. In the middle is demand-responsive transport, offering flexibility whilst remaining affordable.

International travel may be restricted for some individuals due to legislation and visa requirements.

Freight transport, or shipping, is a key in the value chain in manufacturing. With increased specialization and globalization, production is being located further away from consumption, rapidly increasing the demand for transport. While all modes of transport are used for cargo transport, there is high differentiation between the nature of the cargo transport, in which mode is chosen. Logistics refers to the entire process of transferring products from producer to consumer, including storage, transport, transshipment, warehousing, material-handling and packaging, with associated exchange of information. Inco term deals with the handling of payment and responsibility of risk during transport.

Containerization, with the standardization of ISO containers on all vehicles and at all ports, has revolutionized international and domestic trade, offering huge reduction in transshipment costs. Traditionally, all cargo had to be manually loaded and unloaded into the haul of any ship or

car; containerization allows for automated handling and transfer between modes, and the standardized sizes allow for gains in economy of scale in vehicle operation. This has been one of the key driving factors in international trade and globalization since the 1950s.

Bulk transport is common with cargo that can be handled roughly without deterioration; typical examples are ore, coal, cereals and petroleum. Because of the uniformity of the product, mechanical handling can allow enormous quantities to be handled quickly and efficiently. The low value of the cargo combined with high volume also means that economies of scale become essential in transport, and gigantic ships and whole trains are commonly used to transport bulk. Liquid products with sufficient volume may also be transported by pipeline.

Air freight has become more common for products of high value; while less than one percent of world transport by volume is by airline, it amounts to forty percent of the value. Time has become especially important in regards to principles such as postponement and just-in-time within the value chain, resulting in a high willingness to pay for quick delivery of key components or items of high value-to-weight ratio. In addition to mail, common items sent by air include electronics and fashion clothing.

Exercise 2. Answer the following questions.

1. How is passenger transport divided?
2. What is the most common use of transport?
3. What does short-haul transport consist of?
4. What does long-haul transport involve?
5. How can international travel be restricted?
6. How may liquid products be transported?

7. What kind of products has air freight become common for?
8. What items are commonly sent by air?
9. Can international shipping be considered competitive industry?
10. How can you define public transport?

Exercise 3. Translate and learn the active vocabulary.

WORD/PHRASE	TRANSLATION
private enterprise	
to be owed	
entity	
to be privatized	
competitive industry	
affordable	
storage	
regulation	
armed forces	
warfare	
emergency	
mobility	
scheduled service	
intermodal transport	
demand-responsive	

Exercise 4. Make up ten sentences using your active vocabulary.

Exercise 5. Annotate the text using the phrases.

The title of the text is ……; The author of the text described……; The purpose of this article is …..; It is important to underline that…….; It is necessary to emphasize

that……; The author tells us about……; It must be added that….etc.

Exercise 6. Translate the words from column A and find their synonyms in the column B (do it in written form).

A	***B***
1) booking-office	*a) car/ coach*
2) to buy a ticket ahead of time	*b) comfortable (comfort)*
3) carriage	*c) to link/ to join*
4) to carry	*d) commuter train/ local train*
5) conductor	*e) trunk*
6) to connect	*f) rapid/ quick/ swift*
7) convenient (convenience)	*g) direct train*
8) dining car	*h) to offer/ to suggest*
9) fast	*i) to board a train/ to take a train*
10) to get to	*j) to reach*
11) to get on the train	*k) rush hour*
12) information bureau	*l) restaurant car*
13) long distance train	*m) sleeper train*
14) baggage	*n) ticket-office*
15) peak hour	*o) to buy a ticket beforehand/ in advance*
16) to propose	*p) enquiry office*
17) railway	*q) railroad*
18) return ticket	*r) attendant*
19) single ticket	*s) one-way ticket*
20) suburban train	*t) to transport*
21) suitcase	*u) round-trip ticket*
22) through train	*v) luggage*

Exercise.7. Choose the word having an opposite meaning to:

1) expensive a) enormous; b) dear; c) cheap; d) suitable
2) fast a) rapid; b) quick; c) swift; d) slow
3) heavy a) light; b) intense; c) necessary; d) busy
4) low a) tall; b) average; c) high; d) small
5) frequently a) often; b) rarely; c) numerous; d) seldom
6) major a) large; b) small; c) main; d) minor
7) a stopping train a) a direct train; b) a local train; c) an express train; d) a fast train
8) to arrive a) to approach; b) to go; c) to depart; d) to appear
9) to get on a) to leave; b) to enter; c) to get into; d) to get off
10) to see off a) to look at; b) to meet; c) to get off; d) to part
11) to appear a) to arrive; b) to approach; c) to disappear; d) to suggest

Exercise 8. One of the words in the following sentences should not be there. Find the odd word and replace it by a more suitable one.
Model: The departure and arrival time of this train is very expensive for passengers.→ The departure and arrival time of this train is very convenient for passengers.

1) If you want to miss the train you'd better take a taxi.
2) He left for St.Petersburg by the 8.30 train because he wanted to depart there early in the morning.
3) What platform will the berth for London depart from?
4) All the commuter trains are equipped with dining cars.
5) Moscow is a major transport junction where 15 railroads meet at 10 airports and over 300 long-distance and 2,000 suburban trains depart daily.
6) All the passengers were invited to see the train off and take their seats.

7) We got off the train and asked the locomotive crew to carry our luggage to the bus stop.
8) Various discounts are offered for both single and one-way tickets.
9) The suitcase was so light that Robert had to change it from hand to hand all the time.
10) In the day coach there are nine four-berth compartments for passengers, a compartment for the conductors, two toilet rooms and two vestibules.
11) On the first railways there were no conductors and an engine-driver collected the passengers' luggage himself.
12) Thanks to wide doors in Metro cars passengers can quickly get on and off the station.
13) The reason I didn't buy the car was that I thought it was too comfortable.
14) If you buy a train ticket on the day of departure, you'll have to pay some extra money.
15) Pocket-size dictionaries are heavy for traveling purposes.

Unit 8. Conventional Transit Modes in England.

Exercise 1. Read and translate the text.

Conventional Transit Modes

There are three general families of transit modes: rail, bus, and pare transit. **Suburban railroad** service for commuters, also called *commuter rail* or *regional rail*, was started by the intercity railroads as a sideline before the Civil War. This system is characterized by heavy equipment, high maximum speeds, and slow acceleration and deceleration. Usually locomotives pull trains of passenger coaches, but some self-propelled cars were made. The routes are typically 25 to 50 miles long and lead to a sub-end terminal in the central business district. One distinctive aspect of this mode is that the service is often of high quality. Trains run at speeds up to 80 miles per hour, and there are enough seats so that normally every passenger gets one. This is the only transit mode with average speeds that compete with driving on freeways.

Heavy rail used to be referred to as *subway-elevated* because most tracks were located either underground or on structures elevated over streets and alleys. Now it is common to lay tracks at the ground level. Heavy rail is intended primarily to serve travel within the central city, although the newer systems often have lines extending into the suburbs. Stations are fairly close together; the average spacing is about a mile. All systems are electrically powered and each car has its own motor. Hence stations have high platforms, and tracks put at ground level are fenced. Most system use steel wheels on steel rails. The French pioneered a design in which vehicles have rubber tires and run on a concrete guide way. This design has the advantages that it is quieter, the ride is more comfortable, and vibrations from the trains are not transmitted to the ground. However, energy consumption is higher, and

there are climatic limitations: the tires can generate excessive heat in the summer. Snow and ice cause traction problems, so an underground alignment is required in the cities with cold winters.

Light rail is currently the most popular form of rail transit being proposed for U.S. cities. Often the track is laid in the street in places, but much of it is located underground, on elevated guide way, or within a freeway right-of-way. It is safer than the heavy rail because the electricity comes from an overhead wire instead of the third rail. There is no need to fence the track, and it can operate in the street. It offers more flexibility than heavy rail: it can be put in a street and passengers can board and alight from the sidewalk.

Bus transit is well known since it is the most common form of urban public transportation in the United States. About two-thirds of all transit passenger trips are made by bus. Most transit agencies use a type of bus designed specifically for urban use. It is approximately 40 feet long, seating configurations vary, but most buses have 47 to 53 seats. Many smaller models of buses are available, sometimes they are called *minibuses*. Usually they have 20 to 30 seats. Double-decker buses are still predominant in Great Britain as well as other places that were once part of the British Empire (such as Hong Kong). More popular worldwide are *articulated buses,* which have a hinge in the middle and bend to go around corners. They have 66 to 72 seats and three or four doors. Electric buses, also called trolley buses are still used. They have two trolley poles and use two overhead wires, one bringing the current and one returning it. They ride on rubber tires and can maneuver in the street, as long as the trolleys do not become disengaged. Of course, they cannot pass one another. Conventional bus service involves frequent stops along the entire route (8 to 10 designated stops per mile is typical In the past 20 years, many cities have built special

roadways or designated special lanes for buses to raise their speed.

Selection of a transit mode is often a controversial issue and may be highly politicized. Claims and counterclaims provide material for public debate and media accounts.

Exercise 2. Answer the questions.

1. What kinds of transit modes operate in the English-speaking countries?
3. When was the suburban railroad service for commuters started?
4. What is one distinctive aspect of the suburban railroad service?
5. Why did heavy rail use to be referred to as subway-elevated?
6. Who pioneered a design in which vehicles have rubber tires and run on a concrete guide way?
7. What is the most popular form of rail transit in the cities? Give your arguments.
8. What type of bus is designed specifically for urban use in the USA?
9. Are double-decker buses still predominant only in Great Britain?
10. What transit improvements for buses were aimed at raising their speed?

Exercise 3. Give the nouns for the following adjectives.

electric, particular, suburban, distinctive, spacious, climatic, excessive, popular, modern, available, frequent, special.

Exercise 4. Match the words given in the previous exercise and make up word-combinations.

railroad, transit mode, motors, version, compartment, form, minibuses, heat, roadways, stops, aspect, limitations.

Exercise 6. Revise the usage of the Infinitive. Paraphrase the sentences using the infinitive. Complete each sentence so that it means the same as the first sentence.

1 Learning how to live in space is difficult. It's ……..how to live in space.

2. Eating in weightless conditions isn't easy. It isn't……in weightless conditions.

3. Taking enough exercise is difficult. It's ……enough exercise.

4. Being in good health is very important for astronauts. It's very important for astronauts…..in good health.

5. Imagining what astronauts have to do is difficult. It's……what astronauts have to do.

6. Living a completely normal life in space is impossible. It's…….. a completely normal life in space.

7 .Going into space is never boring. It's never……into space.

8. Returning to Earth makes most astronauts feel happy. Most astronauts feel…….to Earth.

Exercise 7. Make up a dialogue using the material of the text and the following conversational phrases and questions.

- To begin with…
- Could you tell me…?
- Do you know…?
- The most important thing is …..

- Do you happen to know…? - Is it true that…?
- I'm convinced that… - I've heard that…
- Is it really true? - Generally speaking…
- I'd like to know if…? - Besides that, …
- Could you explain why / where.. ?
- The real problem is … - What is your opinion about?
- That's probably true, but .. - What do you think of ?
- That's just not true! - I wonder if you…?
- Do you agree with…?

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вул. Революції, 12, Харків, 61002
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