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АНГЛІЙСЬКА МОВА
(за професійним спрямуванням)

Методичні вказівки до практичних занять
для здобувачів освітньо-кваліфікаційного рівня фаховий молодший бакалавр
спеціальності 275 «Транспортні технології (автомобільний транспорт)»
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Методичні вказівки іноземної мови (за професійним спрямуванням) розроблені для студентів 2 і 3 курсів спеціальності 275 «Транспортні технології (автомобільний транспорт)» з метою вдосконалення і розвитку знань, навичок і вмінь з англійської мови за даною спеціальністю.

Методичні вказівки засновані на аутентичних текстах з проблем транспортних систем, містять завдання для читання, перекладу, лексичні та граматичні завдання.

Методичні вказівки навчають студентів самостійно працювати з англійськими текстами за фахом, забезпечать підвищення їх рівня мовної та мовленнєвої підготовки, сприятимуть формуванню іншомовної комунікативної компетенції в цілому.

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Передмова

Методичні вказівки призначені для студентів II, III курсів, спеціальність «Транспортні технології (автомобільний транспорт)».

Їх основна мета полягає в тому, щоб відповідно до вимог програми з іноземних мов (за професійним спрямуванням) підготувати студентів до самостійного читання англомовної літератури за фахом, вдосконалювати вміння та навички читання, усного мовлення студентів у процесі використання ними іншомовного матеріалу під час вивчення своєї спеціальності.

Добір текстів, розробку систем лексичних та граматичних вправ виконано з урахуванням цільової установки чинної програми з іноземних мов.

У методичних вказівках основну увагу звернено на розуміння специфіки лексико-граматичних та лінгвістичних засобів науково-технічного мовного стилю, а також вироблення вміння передати їх адекватно під час перекладу українською мовою.

Мета методичних вказівок – підготувати студентів до читання і розуміння оригінальної фахової літератури англійською мовою. Матеріал методичних вказівок складається з трьох розділів. Кожен розділ містить основний текст, словник-мінімум, пояснення найскладніших для перекладу словосполучень чи виразів. У методичних вказівках подано велику кількість різноманітних вправ, спрямованих на удосконалення навичок словотворення. Закріплення лексичних одиниць, що згруповані в словниках-мінімумах, забезпечується їх багаторазовим повторенням в текстах і вправах до текстів.

У кінці методичних вказівок подається глосарій фахових термінів для полегшення їх розуміння та їх значень.

Отже, методичні вказівки націлені на вдосконалення навичок ознайомлювального, переглядового і вивчаючого читання оригінальної науково-технічної літератури, а також підготовку студентів до практичної мовленнєвої діяльності англійською мовою.

Unit I

What is Transportation?

Text 1.

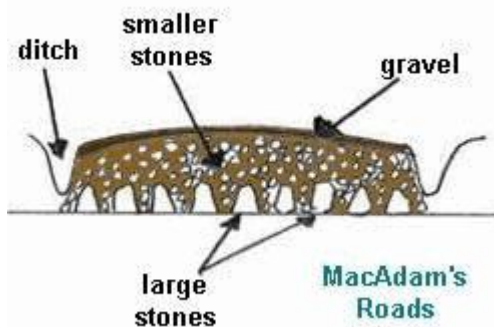
History of Roads - Where did all the roads come from?

The beginning of roads starts as long ago as the Stone Age when **trackways** were made by primitive man to help him trade with other primitive people. However, it was the Romans who first built roads as we know them today. These roads were one of the greatest achievements of the Roman Empire; some of them remained in use for more than 1,000 years after the Empire finished. The first Roman road was the Via Appia and it was built in the year 312 **B.C.** This road **stretched** for over 6,018 kilometers across Western and Southern Europe. Roman roads were built mainly for the armies **to conquer** other countries, letting them travel quickly and safely, but, they were soon used for trade and for people to simply go from one city to another.

In the Middle Ages, **road maintenance** was left to the **parishes** and those people who lived in them. Each parish **had the responsibility** for the roads in their area and local people were **forced** by law to work unpaid to keep the roads maintained. This system of looking after the roads where both **paid and unpaid labour** was used, continued from about 1555 to 1835.

By the 18th century came the era of the Turnpike **trusts** - an **imaginative** new way of getting the roads built and maintained. Turnpike trusts were made up of a group of people who would get together and **ask for permission** from Parliament to take over a section of road, or build a new one, for about 21 years. They would pay for its maintenance by **collecting tolls** from the people who used them. These roads were commonly called **turnpike roads**. You can still see some signs of the location of these roads where you see tiny houses on the edge of the road, where the man who collected the tolls lived. By 1830 there were more than 1,000 Turnpike companies in England, maintaining 32,000 kilometers of road. London and other big cities were connected by a **stagecoach** network - for example it took fewer than two days to travel from London to Edinburgh by coach whereas one hundred years earlier it had taken almost a **fortnight**.

New **road construction techniques** were developed by John MacAdam, Thomas Telford and John Metcalfe. Each of them **put forward the idea** of building **raised, cambered roads** which allowed water **to drain off** them as fast as possible. MacAdam's technique, which used **tar** mixed with roadstone and called **tarmac** Adam, became widely used and, **eventually** developed into the modern method of road building.



The turnpike system of roads was not without its problems. Many of the trusts simply did not know how to look after the roads and when they were short of money they did not maintain them.

They failed to provide a road network that covered the whole of the country to a similar standard. At the same time Britain saw the arrival of the first railway lines which became a very popular and safe way to travel.

By the end of the 19th century **road administration** had become the responsibility of the town and **district councils**, and the **country and rural district councils**. The motor car had arrived in the late 1800s and the 1900s there was a huge increase in the number of cars and lorries that wanted to use roads.

Many of the lorries were heavier and needed much stronger roads. Therefore there was a need **to improve** and maintain **the road** on national basis rather than a **local concern** and this became a big political **issue** for all the country.

In 1936 the Government **put through** an Act of Parliament which was the first Trunk Roads Act. This **ensured** that the Minister of Transport had direct control over the most important **through routes** in the country. This meant that a **consistency** in types of **road surface, treatment of bridges**, the need for widening and **bypasses** could be **achieved**.

Today the Highways Agency looks after all the national roads in England, a total of 10,458 kilometers of **trunk roads** and **motorways**. The Welsh Assembly Government is responsible for trunk roads and motorways in Wales.

Council, as a highway **authority**, is responsible for all the users of the local network - the cyclist, the **pedestrian**, the horses and their riders, not just the cars and lorries!

We provide safe routes for cyclists, and pedestrians, including bridges that **enable** them and the horse riders to cross our roads safely. We build tunnels under some of our roads for **badgers, frogs** and **toads** and other animals to get across the roads.

Essential Vocabulary:

trackway – стежка, дорога з колією,

B.C. (before Christ) – до нашої ери,

to stretch – простягатися,

to conquer – завойовувати,

road maintenance – утримання, ремонт дороги,

parish – парафія, цивільна округа,

to have the responsibility – мати (нести) відповідальність, відповідати,

to force – примушувати, змушувати,

paid and unpaid labour – оплачувана і неоплачувана праця,

turnpike – застава, де беруть дорожній збір,

turnpike road, trunk road – головна магістраль, магістральна дорога,

trust – трест (найбільш централізована форма монополістичних об'єднань, в межах якої підприємства-учасники відмовляються від виробничої, комерційної, а інколи й юридичної самостійності і підпорядковуються єдиному управлінню. Реальна влада в тресті належить правлінню або головній компанії, матеріал з Вікіпедії)

imaginative – уявний, наділений уявою,

to ask for permission – просити дозвіл,

to collect tolls – збирати (стягувати) мито,

stagecoach – поштова карета, диліжанс,

fortnight – два тижні,

road construction techniques – дорожня будівельна техніка,

to put forward the idea – висувати, пропонувати ідею,

raised, cambered road – підвищена, на підйомі дорога,
to drain off water – витікати, відводити (відкачувати) воду,
tar – смола,
tarmac – асфальтовий покрив,
eventually – зрештою,
ditch – рів, канава,
gravel – гравій,
road administration – керування дорогою,
district council – окружний (районний) муніципалітет (рада),
the country council – сільська рада,
rural district council – сільська районна рада,
to improve the road – покращити дорогу,
local concern – місцеве значення,
issue – суперечливе питання,
to put through – виконати, закінчити,
to ensure – гарантувати, забезпечувати,
through route – прямий маршрут,
consistency – погодженість,
road surface – дорожнє покриття,
treatment of bridges – ремонт мостів,
bypass – об'їждна дорога,
to achieve – досягати, успішно виконувати,
highway – шосе, автомагістраль,
motorway – автомобільна дорога,
authority – управління, адміністрація,
pedestrian – пішохід,
to enable – давати змогу,
badger – борсук,
toad, frog – жаба.

Text Study

Exercise 1. Answer the questions.

1. Who built the first road?
2. What was the first road called? When was it built?
3. Whose business was the road maintenance in the Middle Ages?
4. What can you say about Turnpike trusts?
5. Who developed new road construction techniques? What was the idea of this road building?
6. Of what responsibility had the road administration become by the end of the 19th century?
7. What did the first Trunk Roads Act ensure?
8. What does the Highways Agency look after?
9. What is responsible for all the users of the local network?
10. What do we provide safe routes for?

Exercise 2.

Complete the sentences.

1. The first Roman road was ... 2. In the Middle Ages, road maintenance ... 3. Turnpike trusts were made up ... 4. New road construction techniques ... 5. By the end of the 19th century road administration ... 6. Therefore there was a need to improve and maintain ... 7. Today the Highways Agency looks after ... 8. Council, as a highway authority, ... 9. We provide safe routes for ... 10. The Minister of Transport had direct control ...

Exercise 3.

Find English equivalents in the text.

Найбільше відкриття Римської імперії; завойовувати інші країни; подорожувати швидко і безпечно; відповідати за ремонт дороги; збирати мито у людей; розміщення дороги; подорожувати два тижні; розробляти нову дорожню техніку; запропонувати ідею будівництва нової дороги; сучасний метод будівництва дороги; доглядати за дорогою; мати мало грошей; покращити дорогу місцевого значення; автомобілі та вантажівки; гарантувати ремонт мосту; успішно виконувати будівництво окружної дороги; безпечно переходити дорогу; водії та пішоходи; будувати тунель під дорогою; автомобільна дорога і автомагістраль.

Exercise 4.

Tell what sentences are true, what are false.

1. It was Americans who first built roads as we know them today.
2. The first Roman road stretched for over 6,018 kilometers across Western and Southern Europe.
3. In the Middle Ages, road maintenance was left to the parishes and those people who lived in them.
4. Turnpike trusts were made up of a group of people who would get together and ask for permission from Parliament to take over a section of road, or build a new one, for about 21 years.
5. By 1830 there were more than 1,000 Turnpike companies in Europe, maintaining 32,000 kilometers of road.
6. By the end of the 19th century road administration had become the responsibility of the town and district councils.
7. Many of the lorries weren't heavier and did need much stronger roads.
8. Today the Highways Agency looks after all the national roads in the world.

Exercise 5.

Translate into English.

1. Римляни побудували першу дорогу в 312 році до нашої ери.
2. Укравтодор відповідає за будівництво доріг у нашій країні.
3. Ремонт доріг регіонального значення – це справа місцевих органів влади.
4. Вони попросили дозвіл збирати мито на утримання доріг.
5. Автомагістраль проходить біля нашого міста.
6. Нам потрібно побудувати та покращити багато сільських доріг.
7. Фірма гарантувала ремонт цього мосту рік тому.
8. Будівництво окружної дороги – суперечливе питання для органів влади.

9. Ми повинні дати змогу пішоходам безпечно переходити дорогу в цьому місці.
10. Нова дорожня будівельна техніка була використана для будівництва головної магістралі.

Text 2.

What is Transportation?

Transport or transportation is the movement of people and goods from one place to another. The term is **derived** from the Latin trans (“across”) and portare (“to carry”). Industries which have the business of providing transport equipment, transport services or transport are important in most national economies, and are **referred to** as transport industries.

The field can be divided into infrastructure, vehicles and **operations**. Infrastructure consists of the fixed **installations** necessary for transport, and may be roads, railways, airways, waterways, canals and **pipelines** or terminals such as airports, railway stations, bus stations and seaports. Vehicles travelling on the network include automobiles, bicycles, buses, trains, people and aircraft. Operations **deal with** the way the vehicles are operated, and the procedures **set for this purpose** including the financing, **legalities** and policies.

Mode of transport (or **means** of transport or transport **mode** or transport modality or form of transport) is a general term for the different kinds of transport **facilities** that are often used to transport people or **cargo**. Where more than one mode of transport is used for a journey, or for transport analysis, the journey can be described as multi-modal. There are some differences in British English and US English in terms for individual modes. These are **indicated** by (US) or (UK) after the alternative terms:

- Animal-powered transport;
- Aviation, Air transport;
- Human-powered transport;
- Ship transport;
- Rail transport, Railway (UK), Railroad (US);
- Road transport;
- Ski lift;
- Mechanical transit device;
- Others

Essential Vocabulary:

to derive – походити;

to refer to – стосуватися, відноситись;

operation – дія, робота;

installation – установка; об’єкт,

pipeline – трубопровід, нафтопровід;

to deal with – мати справу, співпрацювати;

to set for the purpose – встановити з метою,

legality – законність;

mode of transport (means of transport) – засіб, спосіб транспорту;

facilities (pl.) – засоби обслуговування, можливості;

cargo – вантаж;

to indicate – вказувати.

Text Study

Exercise 1. Answer the questions

1. What is transportation?
2. What is the term derived from?
3. How can we divide the field transportation?
4. What does infrastructure consist of?
5. What do vehicles include?
6. What do operations deal with?
7. What is a general term for the different kinds of transport facilities?
8. What is multimodal transport?

Exercise 2. Match the word combinations on the left with the Ukrainian equivalents on the right.

- | | |
|--|---|
| 1. the business of providing transport equipment | A. встановлений для цієї мети |
| 2. the fixed installations necessary for transport | B. пов'язаний з способом |
| 3. travelling on the network | C. справи з забезпечення транспортного обладнання |
| 4. deal with the way | D. фіксовані об'єкти, необхідні для транспорту |
| 5. set for this purpose | E. що їздять по мережі |

Exercise 3. Find the words in the text which mean the following and write them in the blanks.

1. The system of transporting passengers or goods in a particular country or area

2. A particular way or style of behaving, living or doing something

3. A machine with an engine that is used to take people or things from one place to another, such as a car, bus, or truck

Exercise 4. Sort the words below into 9 groups, what describes mode of transport.

Animal-powered transport	
Air transport	
Human-powered transport	
Ship transport	
Rail transport	
Road transport	
Mechanical transit device	
Other	

- | | | | |
|--------------|--------------|-----------|------------|
| 1. aeroplane | 12. carriage | 23. lift | 34. sled |
| 2. aircraft | 13. coach | 24. lorry | 35. sledge |
| 3. airship | 14. elevator | 25. metro | 36. sledge |

4. automobile	15. escalator	26. motorcycle	37. spacecraft
5. bicycle (cycling)	16. heavy goods vehicle	27. pedestrian (walking)	38. cable car (railway)
6. barge	17. funicular	28. rocket	39. train
7. balloon	18. ferry	29. sailboat	40. tram
8. boat	19. helicopter	30. ship	41. trolleybus
9. bus	20. hovercraft	31. skate	42. truck
10. subway	21. jetpack	32. skateboard	43. underground
11. car	22. jump jet	33. ski	44. wheelchair

Notes:

aeroplane – літак, аероплан;

aircraft – літак, літальний апарат;

airship – дирижабль, повітряний корабель;

barge – баржа, омнібус (автобус для екскурсій) (амер.);

carriage – екіпаж, коляска; пасажирський вагон;

coach – карета, пасажирський вагон; автобус (міжміського сполучення);

elevator – елеватор, ліфт;

ferry – паром, переправа;

hovercraft – вертоліт;

jetpack – реактивний літак;

sled – санки;

sledge – санки;

spacecraft – космічний літак;

underground – метрополітен;

subway – метрополітен (амер.);

wheelchair – крісло на колесах (для людей з інвалідністю);

lorry, truck – вантажна машина, вантажівка.

Text 3

Different Forms of Transport

UNCTAD (United Nations Conference on Trade and Development) has suggested definitions to various types of transport so that a **clear distinction** could be established between **multimodal transport** and other forms of transport. **Unimodal transport** is the transport of goods by one mode of transport by one or more **carriers**.

Intermodal transport is the carriage of goods by several modes of transport from one point/**point of origin** via one or more **interface** points to a final point where one of the carriers organizes the whole transport. Depending upon the sharing the transport responsibility, different types of transport documents are issued. Under the another form of transport called **segmented transport**, the carrier takes responsibility for the portion it is performing itself, and accordingly issues an intermodal **bill of lading**.

Facilitation of trade and transport sectors **calls for** procedural, legal and institutional reforms to simplify, standardize and harmonize procedures and documentation that will help to achieve movement of goods at a minimum cost and time. This covers a wide spectrum of activities including human resource development, physical infrastructures and the use of new transport and information technologies. Multimodal transport is one of the highly effective and modern ways of **facilitating movement** of imports and exports. It is a transport

logistic system based on new transport technology that ensures fast and safe movement of goods at least cost.

The rapid changes in political, economic and technological sectors in the **aftermath** of the Second Great War **resulted in** the tremendous growth in **domestic production** and international trade. The world started **to witness** ever growing competition as every country faced **challenges** as well as opportunities to raise one's share in the global trade. The concept of "just-in-time" became the most wanted element in international trade. The traditional practice of holding large stock became **obsolete practice**. **Consequently** this **triggered** new developments in, **inter alia**, transport technologies aimed at achieving higher efficiency with reduced cost and transit time in delivering products from one part of the world to another. In the course of its development, the multimodal transport used to be called with variety of names such as intermodal transport, **through transport** and combined transport.

Multimodal transport is the most popular form of transport logistic system in the international trade for efficient door-to-door delivery using single document called a multimodal transport document (MTD) under a single liability regime covering all modes of transport from the place of origin to the place of destination. In other words, multimodalism refers to a transport system to effect door-to-door movement of cargo, and therefore, reflects a logical and flexible commercial system in international trade. It also means selling direct into the overseas market as easily as at home and in **terms familiar** to the customers.

Essential Vocabulary:

clear distinction – чітка різниця,
multimodal transport – змішані перевезення, мультимодальний транспорт,
unimodal transport – перевезення одним видом транспорту,
intermodal transport – інтермодальні перевезення,
interface – перехресний,
point of origin – початок координат,
carrier – перевізник,
transport document – транспортний документ,
segmented transport – сегментований транспорт,
bill of lading – коносамент,
facilitation – спрощення,
to call for – вимагати,
to facilitate movement – полегшити рух,
aftermath – наслідки,
to result in – закінчуватися,
domestic production – внутрішнє виробництво,
to witness – свідчити,
challenge – виклик,
obsolete practice – застаріла практика,
consequently – отже, тому,
to trigger – *тут* спонукати,
inter alia – крім того, зокрема,
through transport – прямий транспорт,
terms (pl.) – умови договору,

familiar – звичайний, звичний.

Text Study

Exercise 1. Answer the questions.

1. What organization has suggested definitions to various types of transport?
2. What is unimodal transport?
3. What is intermodal transport?
4. Why are different types transport documents issued?
5. What is multimodal transport?
6. What are other different names of multimodal transport?
7. What document is used in multimodal transport?
8. Multimodal transport means selling direct into the overseas market, doesn't it?

Exercise 2. Find English equivalents in the text.

Конференція з торгівлі та розвитку, різні види перевезень, вид транспорту, перевізник, кінцева точка, відповідальність під час перевезень, випускати транспортну документацію, коносамент, спрощення торгівлі, вимагати правових реформ, спрощувати та нормалізувати, рух товарів з мінімальними витратами коштів та часу, нові транспортні технології, полегшити рух імпорту та експорту, забезпечити швидкий та безпечний рух, наслідки війни, внутрішнє виробництво, міжнародна торгівля, концепція «точно в строк», застаріла практика, ефективна доставка від дверей до дверей, режим одноосібної відповідальності, прямі продажі на зарубіжні ринки.

Exercise 3. Complete the sentences.

1. UNCTAD has suggested definitions to various types of transport so that
2. Unimodal transport is the transport of goods by
3. Intermodal transport is the carriage of goods by
4. Depending upon the sharing the transport responsibility... .
5. Multimodal transport is
6. The rapid changes in political, economic and technological sectors in the aftermath of the Second Great War resulted in
7. The concept of “just-in-time” became
8. The multimodal transport used to be called with variety of names such as... .
9. Multimodalism refers to a transport system to
10. Multimodal transport means... .

Exercise 4. Translate the sentences into English.

1. Існують різні види транспорту. 2. Ми використовуємо один вид транспорту, коли перевозимо свої товари. 3. Які транспортні документи ви знаєте? 4. Ми забезпечимо рух товарів з мінімальними витратами коштів та часу. 5. Змішані перевезення – це високоефективний спосіб полегшення руху імпорту та експорту. 6. Цей вид перевезень забезпечує швидкий та безпечний рух товарів. 7. Зберігання великої кількості товару – це застаріла практика. 8. Змішані перевезення мають багато різних назв. 9. Усім подобається ефективна доставка від дверей до дверей. 10. Змішані перевезення використовуються у випадках прямих продаж на зарубіжні ринки.

Text 4

The Car Era

In 1878, a German engineer named Nikolaus Otto built a new kind of engine. The **internal combustion engine** didn't need a separate, heavy boiler **to burn fuel**, as the **steam engine** did. It burned the fuel inside the engine itself. Engineers could build internal combustion engines that were much lighter and smaller than steam engines. And inventors could fit the new engines to smaller **vehicles** ... like cars.

In 1887, the inventor Karl Benz showed a vehicle using the new engine in Germany. The 'Motorwagen' could go eight miles an hour and seat two people. This was probably the first car. Benz built a factory to make cars that people could buy. So did other inventors. The early cars were expensive and very **unreliable**.

Later on, some companies used the internal combustion engine to make a vehicle for **carrying** lots of **people**: the bus. Others used it in planes.

In 1903, two bicycle shop owners named Wilbur and Orville Wright built a plane. They flew it on some sand hills in North Carolina. This was the first time a person flew a **powered** plane anywhere!

In 1908, an American inventor, Henry Ford, created a car he called the Model T. The Model T was more **reliable** and easier. Suddenly, people who weren't rich could buy a car of their own. Henry Ford's factory built up to a thousand Model Ts a day. Cars became much more popular. People **went crazy over cars**! In Los Angeles in 1920, people **took** nine electric trolley **rides** for every one ride they took in a car. By 1924, cars had gotten so popular that Angelenos took one trip in a car for every single trolley ride.

Cadillac, Packard and other companies made expensive cars just for rich people, with **leather upholstery** and powerful engines. People bought magazines just to look at pictures of cars, and **raced cars** on **race tracks** and on the street. Some people wouldn't be friendly with other people unless they liked the cars that they drove!

By the late 1930s, the government had started building special roads just for cars: **freeways**! Soon cities like Los Angeles had miles and miles of freeways. Cars could go faster than ever! The popularity of cars changed the way new cities and towns were built. Planners didn't have to worry if homes were close to a bus or train stop. Most people didn't care anymore. The planners could make the new **communities** all **spread out**, with wide streets and few **sidewalks**. People wouldn't walk to the store or to work: they'd drive!

Meanwhile, the big public transit systems were having big problems. In the 1940s, almost twenty four billion people a year took rides on trains and buses. By the middle 1960s, the number had dropped to seven billion. People didn't want to ride trains or buses when they could afford a car. Public transit systems started **losing** more and more **money**. In Los Angeles, the Pacific Electric railway shut down. Other transit operators cut services. Buses and trains weren't popular anymore. People liked cars better. But then cars started **causing** big **problems**.

Essential Vocabulary:

internal combustion engine – двигун внутрішнього згоряння,
steam engine – паровий двигун,
to burn the fuel – спалювати паливо,

vehicle – транспортний засіб,
 powered plane – моторний літак,
 reliable – надійний; unreliable – ненадійний,
 to carry people – перевозити людей,
 to go crazy over cars – сходити з розуму від машин,
 to take a ride – здійснювати поїздку, їздити,
 leather upholstery – шкіряна оббивка,
 raced cars – гоночні машини,
 race tracks – гоночні траси,
 freeway – шосе, магістраль,
 community - громада,
 to spread out – розтягуватись, розширятися,
 sidewalk – тротуар,
 to lose money – втрачати гроші,
 to cause problems – спричиняти проблеми

Text Study

Exercise 1. Choose the correct answers and complete the following sentences.

- In 1878, Nikolaus Otto invented a new engine that could be made smaller and lighter than a steam engine. This engine was called the _____.
A. locomotive engine **C.** internal combustion engine
B. combusted internal engine **D.** new and improved engine
- Otto's new engine could be made smaller because it didn't burn fuel in a separate boiler. Instead it burned fuel _____.
A. before the engine started **C.** outdoors
B. inside the engine itself **D.** somewhere kids can't go
- _____ built the first car.
A. Transit People **C.** Richard Trevithick
B. Karl Benz **D.** No one knows
- In 1908, Henry Ford built a new car that was cheaper and more reliable than older cars. He called his car the _____.
A. Model T **C.** cheap, reliable car
B. Volkswagen **D.** Navigator

Exercise. 2. Find out if the following statements to the text are true (T) or false (F).

- One expensive car built for rich people was called the Packard. (...)
- In the 1930s, the government began building special roads for cars. These were called race tracks. (...)
- As cars became more popular, fewer people used sidewalks. (...)

Exercise 3. Find words in the text that mean the same or are similar to the following.

- someone whose job is to design or build roads, bridges, machines etc

- to make something, especially a building or something large

- a vehicle with four wheels and an engine, that can carry a small number of

passengers

4. a building or group of buildings in which goods are produced in large quantities, using machines

5. unable to be trusted or depended on

6. a very wide road in the US, built for fast travel

7. a hard surface or path at the side of a street for people to walk on

8. a system for moving people quickly around a city

9. the official system for providing something, especially something that everyone in a country needs to have, or the official organization that provides it

10. difficulty

Exercise 4. Find English equivalents in the text.

Новий вид двигуна, двигун внутрішнього згоряння та паровий двигун, спалювати пальне, їхати зі швидкістю 8 миль/год, дорога машина, створити транспортний засіб, ставати популярним, шкіряна оббивка, їхати швидше, будувати шосе, широкі вулиці з тротуарами, система громадського перевезення, здійснювати поїздку автобусом чи тролейбусом, втрачати гроші, урізати послуги, спричиняти великі проблеми.

Text 5

Problems with Cars

People like cars for many reasons. Drivers don't need to wait for trains or buses to pick them up. Riders always have a seat, and don't need to sit next to anyone they don't like (except maybe their little brothers).

Car owners can live far away from the city, on **twisty streets** in little towns that buses and trains don't go to. The houses in the little towns might be nicer and cost less than homes close to a transit stop.

Car owners can drive into the mountains or the desert, anytime they want to. The roads are always open. They can go shopping and take home lots of things in their cars, and they don't have to wait for the bus in the rain.

In some places, drivers can travel two or three times as fast as people in trains and buses.

Many adults are very busy. Some make many stops in their cars every day, **to run errands** or to pick up kids after school. It might be very hard for them to stop driving, if they live in places without good transit.

But the trouble is, the popularity of cars is the main reason they cause so much trouble. There are too many of them!

One of the biggest problems cars cause is **air pollution**. An internal combustion engine uses fuel by mixing it with air and then burning it. When this happens, some **exhaust gases** are always left over. The exhaust gases go out the **tailpipe** and into the air.

This isn't a problem if only a few people in a city drive cars; there's a lot of air! But what if millions of people are driving at the same time?

The answer is **smog**. Smog is what happens when the exhaust gases mix with sunlight. Sometimes you can see smog as a **murky brown haze** on the horizon. But smog is bad for you even if you can't see it.

In Los Angeles, smog got so bad that the government **declared** 'smog alerts.' A 'smog alert' happens when the air is unhealthy to breathe. Sometimes kids weren't even **supposed** to go outside to play. People **complained** that the smog **made their eyes water**, and that they couldn't see well enough to drive.

The smog made some people sick. Smog is especially bad for people who have problems with their **lungs**. Smog is one of the reasons that kids get asthma.

But more and more people drove, and the smog got worse and worse. Finally, the government **passed laws** that said that cars couldn't make as much pollution. The **car makers** put special controls on the new cars, so they wouldn't make as much smog. The oil companies changed the **gasoline** so it would burn more cleanly. Today a new car makes much less pollution than an old car. You'd need more than ten new cars to make as much smog as one 1968 Chevelle.

But smog is still a serious problem. It can hurt kids' lungs and cause heart attacks in adults. Of the 25 most polluted cities in the world, 9 were located in China, while 7 were located in India.

Another big problem partly caused by cars is global warming. The burning of fuel in all cars, even new ones that don't pollute very much, puts a gas called **carbon dioxide** in the air.

Carbon dioxide isn't pollution. Plants use it for photosynthesis. But the millions of cars, trucks, buses, factories and **power plants running all over the world** are making much more carbon dioxide than would be in the air normally. The extra carbon dioxide helps **trap** the sun's heat on earth. The whole planet is heating up because of it. A few scientists say that global warming isn't a big problem. But most think it's very serious.

Global warming may cause shortages of food and water in some places. It may make the polar **icecaps melt**, and the sea level rise. One study said that average temperatures could be as much as eleven degrees higher by the end of the century and November 2020 in the world was the warmest year in the history. No one really knows how the world will change if people make it hotter.

Cars use up a lot of space.

In some cities, up to thirty percent of the land is taken up just by parking! Cars use freeways for fast driving, regular roads for slower driving, **parking lots** and parking garages. In a typical city, every car has an average of eight parking spaces.

Just between 1975 and 1990, the total number of miles that Americans drove their vehicles increased by over fifty percent! People keep driving more and more. And what will happen when all the people in the poor countries can afford cars too? Now only eight percent of the world's people own cars. Cars are used mostly in the richer countries. According to experts, in 2015, 947 million cars and 335 million commercial vehicles operated in the

world, all taking up space and making pollution. And the world's population is going to get a lot higher!

Essential Vocabulary:

twisty street – звивиста вулиця,
to run errands – виконувати доручення, бути на побігеньках,
air pollution – забруднення повітря,
exhaust gases – вихлопні гази,
tailpipe – вихлопна труба,
smog – смог (густий туман з димом і кіптявою),
murky brown haze – темно-коричневий туман,
declared – оголошувати,
alert – сигнал, тривога,
to suppose – припускати,
to complain – скаржитись,
to make the eyes water – змусити очі сльозитися,
lungs – легені,
to pass law – приймати закон,
car makers – автовиробники,
gasoline – бензин,
carbon dioxide – вуглекислий газ,
power plant – електростанція,
to run all over the world – працювати в усьому світі,
to trap – ловити пастками,
icescap – льодовик,
to melt – танути,
parking lots – паркувальний майданчик

Text Study

Exercise 1. Match the word combinations A with the corresponding equivalents in B.

A

1. close to a transit stop
2. internal combustion engine
3. exhaust gases
4. murky brown haze
5. cause shortages

B

- A. вихлопні гази
- B. поряд з транзитними зупинками
- C. стає причиною дефіциту
- D. двигун внутрішнього згоряння
- E. темно-коричневий туман

Exercise 2. Choose the correct answer.

1. Smog is what happens when exhaust gases mix with _____.
A. smoke and fog C. sunlight
B. intake gases D. Packards
2. A 'smog alert' happens when the air is _____.
A. unhealthy to breathe C. ugly to look at
B. really paying attention D. eating all the smog
3. To make as much smog as one 1968 Chevelle, you'd need more than _____.
A. two new cars C. five new cars

- B. half of a 1968 Ranchero D. ten new cars
4. Cars make this gas, which helps trap heat on earth and contributes to global warming _____ .
- A. H₂O C. hidethylene polyexol
B. carbon dioxide D. the fun gas
5. By the end of the century, global warming may cause average world temperatures to rise by as much as _____ .
- A. 11 degrees C. ½ of 1 degree
B. the height of Mount Everest D. 6 degrees
6. The residents of Los Angeles own more cars than the poorest sixty percent of the people _____ .
- A. in the Andromeda galaxy C. in seventh grade
B. in New York and Tokyo D. on earth
7. In the United States, how many cars are there for every 1,000 people?
- A. 750 C. 75
B. 2,000 D. just ten; the adults share

Exercise 3. Read the information about advantages and disadvantages of car. Put the following word combinations in the gaps.

ecological problem	for and against	more freedom
risks of accidents	the cost of this trip	use gasoline

Transport is a common factor that conduce to increase that pollution, but during all the history transport has helped to increase the people's life. In fact, there are a lot of arguments (1) _____ of having a car.

One of the strongest arguments against having a car is the (2) _____ that is produced by this transport. Pollution is increasing and petrol is decreasing more every year in the world. Although car's companies try to create these vehicles with a big quality and without too many (3) _____, they can not deny the possibility of having an accident. Furthermore, to drive a car supposes to spend a lot of time and to respect the rules, and if there is a lot of traffic you must wait. Compared with plane and the train, this transport is the least quickly.

On the other hand, there are several arguments for having a car. Firstly, if you have this vehicle you have also (4) _____ because you don't depend on public transport and its timetable. Secondly, you can travel and go wherever you want and (5) _____ will not be as expensive as travelling by plane. Thirdly, for a family of medium class the cost of having a car is better than the cost of paying a different transport for every trip. Finally, if you have an emergency you can drive your car and to solve your problem.

To sum up, the fact of having a car is very important in our society, although it would be necessary that all the families which have more than one car, they should think in the possibility of use public transport. On balance, nowadays there are more people that have started to (6) _____ (a product that can substitute petrol).

Exercise 4. The following tables give you some advantages and disadvantages of having car. Read the statements below, text 'Problems with Cars' and text in Task 3 and

distribute them into two columns ‘Advantages of Having Car’ and ‘Disadvantages of Having Car’.

Advantages of Having Car

1. Car is more convenient than public transport.
2. Life will become more convenient.
3. Cars can go to many different places and can carry people easily.
- 4.
- 5.

Disadvantages of Having Car

1. Car exhaust causes actual harm to the health of people.
2. Cars emit several pollutants that are toxic.
3. Jams waste our precious time.
- 4.
- 5.

- A car allows one to move freely and with a car there is no need to wait for the bus in the cold or under the burning sun.
- Automobiles bring numerous troubles such as more serious environmental pollution and more energy consumption. Cars drink up huge amounts of fuel and throw out huge amounts of pollutants.
- Automobiles can lead to loss of lives.
- Car accidents kill thousands and thousands of people each year and cripple more.
- Drivers have high risk of getting into accidents.
- If conditions permit, owning a car can make us work more efficiently.
- It is difficult to park in busy cities.
- It is expensive to buy a good car.
- It is expensive to maintain (insurance, repairs, gas, etc.)
- Most cars generate large volume of poisonous gas like hydrocarbons, nitrogen oxides, and carbon monoxide. Hydrocarbons cause eye irritation, coughing, wheezing, shortness of breath, and lung damage. Nitrogen oxide causes acid rain and leads to water quality problems. Carbon monoxide prevents oxygen from going through the lungs properly.
- People get to where they want fast without making much effort (it saves time and effort)
- Private cars get into traffic congestion so greatly that the advantages gained in comfort and freedom are often cancelled out by the frustration caused by traffic jams.
- The automobile industry provides jobs for countless workers and strong support for other industries.

Text 6

Transport and Environment

Cars and trucks are major sources of noise pollution in most cities. Most developed countries have had **vehicle noise emission regulations** since 1970s. Technological progress in engines and exhaust systems has made these vehicles considerably quieter. For example,

the EU **allowable noise level** of a modern truck is approximately equivalent to that of the typical car in 1970. Nonetheless, the noise created by motorized transportation remains a **significant impact** on **urban residents'** health and quality of life. Noise is often **cited** as the main **nuisance** in urban areas, and traffic noise is the worst **offender** (a German study suggests that 65% of the population is **adversely** affected by road traffic noise, with 25% seriously affected).

As an indication, **residential property values** are **measurably** lower near noise-producing main roads, highways and **railroad tracks**. A recent study of Austrian schoolchildren found that the low but continuous noise of everyday local traffic can cause stress in children and raise **blood pressure, heart rates**. The research, conducted by US and European researchers, was the first major study of the nonauditory **health effects** of typical **ambient community noise**.

Besides vehicle engines and exhaust pipes, much of the noise produced by vehicles today, especially in highway operations, results from the movement of vehicles through the air, and the contact of **tires** with the road. The former can be reduced by aerodynamic **vehicle body designs** (which also have the effect of **improving fuel efficiency** and **reducing emission**). The latter can be reduced through **tire tread designs** and improvements in **pavement surface textures** (which also have the effect of draining water more effectively and so reducing the risks of accident).

Noise barriers can also minimize the impact of vehicle noise. Aircraft are another important source of noise. Major airports typically **handle** hundreds of thousands of aircraft arrivals and departures per year. Most of these aircraft are **jet-propelled**. In most of the developed world, increasingly **stringent** aircraft engine noise **regulations** have **succeeded** in reducing the **total noise exposure** at most large airports. This is much less true, however, for the developing world. In many cases, aircraft that can no longer **meet developed-world noise standards** are sold to developing world operators and continue their noisy existence.

Essential Vocabulary:

vehicle noise emission regulations – екологічний стандарт шуму транспортного засобу,
allowable noise level - допустимий рівень шуму,

a significant impact – значний вплив,

urban residents – міські жителі,

to cite – цитувати, згадувати,

nuisance – неприємність,

offender – порушник,

adversely – несприятливо,

residential property values – вартість житла,

measurably – до певної міри, помірно,

railroad tracks – залізничні колії,

blood pressure – артеріальний тиск,

heart rates – частота серцевих скорочень,

nonauditory health effects – наслідки для здоров'я,

ambient community noise – шум навколишнього середовища,

tire – шина,

vehicle body design – конструкція кузова транспортного засобу,

to improve fuel efficiency – покращити ефективність палива,

to reduce emission – скоротити викиди,
tire thread design – конструкція протектора,
pavement surface textures – текстура тротуарної поверхні,
to handle – керувати, обробляти,
jet-propelled – з реактивним двигуном,
stringent regulations – жорсткі, суворі правила,
to succeed – досягати успіху, вдаватися,
total noise exposure – загальний вплив шуму,
to meet developed-world noise standards – відповідати шумовим
стандартам розвинених країн

Text Study

Exercise 1. Answer the questions.

1. What are major sources of noise pollution in most cities?
2. What have most developed countries had since 1970s?
3. How is noise often cited?
4. How is much of the noise produced by vehicles today (besides vehicle engines and exhaust pipes)?
5. In what way can the movement of vehicles through the air be reduced?
6. In what way can the contact of tires with the road be reduced?
7. What can minimize the impact of vehicle noise?
8. What is another important source of noise?
9. What helps to succeed in reducing the total noise exposure at most large airports?
10. Does aircraft meet developed-world noise standards?

Exercise 2. Find out if the following statements to the text are true (T) or false (F).

1. Technological progress in engines and exhaust systems has made these vehicles considerably quieter.
2. Residential property values are measurably higher near noise-producing main roads, highways and railroad tracks.
3. Noise barriers can also minimize the impact of vehicle noise.
4. The noise created by motorized transportation remains a significant impact on urban residents' health and quality of life.
5. Railway is another important source of noise.

Exercise 3. Find English equivalents in the text.

Рівень шуму, здоров'я та якість життя міських жителів, шум дорожнього руху, спричиняти стрес у дітей, підвищувати кров'яний тиск, основна дорога та автомагістраль, проводити дослідження, вихлопна труба, шумові бар'єри, скоротити викиди, відповідати стандартам, злив (відкачування) води, джерело шуму, літак з реактивним двигуном, прибуття та відправлення літаків, жорсткі правила, зменшити загальний вплив шуму, зменшити ризик автотроц.

Unit II

Transit. Means of Transportation.

Text 7

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 **neighbourhoods**, 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. 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.

Essential vocabulary:

pervasive influence – проникаючий, поширений вплив,
to amount to – становити,
gross national product – валовий національний продукт,
impact – вплив,
to evolve – розвиватися,
principal means – основні засоби,
horse-drawn carriage – кінний екіпаж,
subway train – підземний потяг, потяг у метро,
urban travel – міські подорожі,
bundle – вузол,
interrelated problems – взаємопов’язані проблеми,
congestion – затор,
ancillary impact – додатковий вплив,
freight movement – вантажний рух,
psychological strain – психологічне напруження,
downtown areas – райони центру міста,
accessibility – доступність,
suburb – передмістя,
rural area – сільська місцевість,
consumption – споживання,
petroleum, oil – нафта,
per capita – на людину,
counterpart – товариш,
surface – поверхня,
aesthetics – естетика,
strip – смуга,
disruption – руйнування,
urban fabric – міська структура,
neighbourhood – квартал,
density – густота,
residential areas – житлові райони,
scattered activity centers – розкидані центри діяльності,
standby service – сервіс в режимі очікування,
backup service – резервний сервіс,
beneficial – вигідний, корисний

Text Study

Exercise 1. Which of the things below do you think influence the role of transport in the modern society? Which don't? Explain why.

petrol	travelling
animals	stress
traffic	physical
pollution	infrastructure
pedestrian	population increase
	food

Exercise 2. Give the nouns for the following adjectives.

pervasive, interrelated, concerned, dense, dominant, congested, scattered, vehicular, polluted, abundant.

Exercise 3. Match the words given in the previous exercise and make up word-combinations.

viewer, street, river, stories, smoke, villages, supply, influence, characteristic, access.

Exercise 4. Translate into Ukrainian.

1. Залізниці були основними засобами пересування на великі відстані у XIX ст.
2. Автомобіль став найпоширенішим засобом міського пересування, але громадський транспорт продовжує відігравати важливу роль.
3. Проблема міського перевезення пасажирів представляє собою суміш взаємопов'язаних проблем, що можуть бути поділені на три категорії: затори, рух, додаткові впливи.
4. Серед населення завжди будуть ті, хто не може використовувати автомобіль, або ті, хто не хоче, а деякі фізично або ж психологічно не здатні водити машину.
5. Незважаючи ні на що, громадський транспорт є альтернативою автомобілю, він доступний у будь-який момент.

Exercise 5. 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 6. 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 7. Make up a dialogue. "Transportation: Pros and Cons". Use the following conversation phrases.

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

Text 8

Conventional Transit Modes

There are three general families of transit modes: rail, bus, and paratransit. **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 **guideway**. 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 guideway, 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**.

Essential vocabulary:

conventional – звичайний, загальноприйнятий,
transit mode – засіб (спосіб) перевезення (транзиту),
suburban – приміський,
commuter – житель передмістя,
commuter rail – приміська залізниця,
acceleration – прискорення, розгін,
deceleration – зменшення швидкості, уповільнення, гальмування,
coach – пасажирський вагон,
self-propelled car – самохідний вагон,
sub-end terminal – допоміжний термінал (кінцева станція),
average speed – середня швидкість,
to compete – змагатися, конкурувати,
heavy rail – широка залізнична колія,
to refer to – відноситись до,
subway-elevated – підземно-надземний,
track – колія,
to elevate – піднімати,
spacing – відстань, інтервал,
to power – приводити в дію (в рух),
to fence – обгородити,
guideway – напрямна колія,
to transmit – передавати,
traction – тяга,
underground alignment – підземне розташування,
light rail – вузька залізниця,
overhead wire – верхній (надземний, підвісний) провід,
flexibility – маневреність,

to board (the train) – сідати (на потяг),
to alight – висаджуватись, виходити,
seating configurations – форма сидінь,
to vary – мінятися, відрізнятися,
double-decker bus – двоповерховий автобус,
articulated bus – шарнірний автобус,
hinge – шарнір,
trolley pole – тролейбусна штанга,
current – (електричний) струм,
to become disengaged – роз'єднатися,
designated stop – призначена зупинка,
designated special lane – призначена спеціальна смуга,
controversial issue – спірне питання,
claims and counterclaims – позови, зустрічні позови,
media accounts – відгук ЗМІ

Text Study

Exercise 1. Answer the questions.

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

Exercise 2. Give the nouns for the following adjectives.

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

Exercise 3. 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 4. 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'show 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'senough 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 5. 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...? | |

Exercise 6. Translate into English.

1. У нашій країні приміська залізниця не є високої якості.
2. Локомотиви тягнуть потяги з пасажирськими вагонами, їздять зі швидкістю 80 миль/год., і там є достатньо місця для усіх пасажирів.
3. Крлії широкої залізниці розташовані під землею або на структурах піднятих над вулицями та алеями.
4. Вся система широкої залізниці електрифікована і кожен вагон має свій власний двигун.
5. Станції мають високі платформи і колії, прокладені на рівні землі, обгороджені.
6. Вузька залізниця – найпопулярніша форма залізничного перевезення в США. Вона пролягає по вулиці і пасажирів можуть сідати і висаджуватись з тротуару.
7. Автомобільні перевезення – найпоширеніша форма міського громадського перевезення в багатьох країнах.
8. Двоповерхові автобуси домінують у Великій Британії, а шарнірні автобуси популярніші в усьому світі.
9. Тролейбуси мають дві троллейбусні штанги і використовують два верхні проводи зі струмом, вони їздять на гумових шинах і не можуть переганяти один одного.
10. Більшість автобусів мають 47-53 місця, 40 футів довжини, форма сидінь відрізняється.

Text 9

Scheduling

Scheduling is one of the major concerns of transit management. It directly affects **operating costs**, and schedules can vary widely in their efficiency. There are three separate

parts of scheduling. The first is to prepare a **timetable** listing all vehicle trips to be made on each route over the day. The timetable specifies when each trip starts and ends; usually the table also sets the times when vehicles are to pass certain **checkpoints** along a route. There must be a **layover** time at the end of each trip before the vehicle starts another trip. Some large cities provide **owl service** throughout the night. Most schedules vary the frequency of service during the day. **Headways** are shorter during morning and afternoon peak periods, longer during midday and evening hours. Hence more operators are needed during the peak periods, and it would be more advantageous to put some of them on **split shifts** (two working periods separated by an unpaid break). **Headways** are shorter during morning and afternoon peak periods, longer during midday and evening hours. (normally that closest to the city center). This is called a **short run**. The object is to use vehicles and operators more efficiently by closely matching **supply and demand**.

The second part of scheduling is **to assign vehicles** to make the trips on the timetable. A series of trips performed by one vehicle is called a **block**. It starts with a **pull-out** from the garage and ends with a **pull-in**.

The third and most difficult step in scheduling is to assign **crews** to the vehicles (a crew may be a single person, as for a bus). Since blocks often last longer than a crew's workday, many blocks are divided into pieces (a **piece** is a portion of a block handled by a single crew). The division must occur **at relief points** – stops where one crew can replace another. Then the pieces must be **assembled** into runs (a **run** is the daily work schedule of an individual crew). The process is often called **run cutting**, and the resulting list of assignments is sometimes called a **roster**. A run can contain one, two or three pieces.

New schedules are prepared three or four times a year. In the past, schedules were prepared by hand by using **rules of thumb**. Good **schedule makers** were considered among the most important personnel in a transit system. In 1969 a grant to develop automated scheduling system was given. Therefore, a computer package called RUCUS was prepared. It stood for run cutting and scheduling. It had four components: three were called **trips**, **blocks** and **runs**. The fourth was called **data management**, and it **handled the flow of information** from **inputs** through **outputs**. The advantages of computerized scheduling are not limited to replacing the human effort of schedule makers. The programs often make it possible to reduce the number of vehicles and operators needed by designing more efficient schedules. Another advantage is that the programs can be used during **labor negotiations** to **estimate** the impact of proposed changes in work rules.

It is a serious matter if scheduled trips are **canceled**. Transit agencies use a **personnel extra board** which is a list of operators on **standby**. The operators are called to duty in several conditions: 1. when a scheduled operator is absent or on vacation; 2. when an operator is late for a run; 3. when an operator takes a sick and leaves early; 4. when a vehicle breaks down and a replacement vehicle must be sent out.

One of the major operational problems of a transit system lies in making the vehicles **adhere to their schedules**. Transit managers try to make vehicles **keep to schedule**. To do this, managers must know what routes are unreliable and when. Bus systems often have **checkers** who collect data on **route performance**. One method is the **point check**, in which a checker is stationed at a stop and compares actual arrivals of buses with scheduled arrivals. Another is the **ride check**, in which the checker rides the bus and records the times at major schedule points. A ride check can also produce data on riders getting on and off at stops. However, the point check is more common because it requires fewer personnel.

Essential Vocabulary:

scheduling – складання графіку, планування,
operating costs – експлуатаційні витрати,
timetable – розклад, графік,
checkpoint – пункт пропуску,
layover – зупинка,
owl service – нічна служба,
headway – інтервал між транспортними засобами,
split shift – розділена зміна,
short run – експрес маршрут,
supply and demand – попит і пропозиція,
to assign vehicles – призначати транспортні засоби,
block – маршрут транспортного засобу,
pull-out – від'їзд,
pull-in – прибуття,
crew – бригада, екіпаж,
piece – частина маршруту,
relief point – пункт заміни,
to assemble – збирати,
run – рейс,
run cutting – скорочення рейсу,
resulting list of assignments – отриманий список призначень, розподілу,
roster – список маршрутів,
rule of thumb – приблизний підрахунок.
schedule maker – розробник графіку,
data management – управління даними,
to handle the flow of information – обробляти потік інформації,
inputs and outputs – вхідні та вихідні дані,
labor negotiations – трудові переговори,
to estimate – оцінювати,
to cancel a trip – скасувати поїздки,
personnel extra board – додатковий набір персоналу,
standby – резерв,
to adhere to the schedule, to keep to schedule – дотримуватись графіку,
route performance – виконання маршруту,
checker – контролер,
ride check – перевірка поїздки,
to get on and off – сідати і виходити

Text Study

Exercise 1. Read and pronounce correctly the following words.

Efficiency, vehicle, checkpoint, layover, interval, minimize, assembled, assignment, negotiation.

Exercise 2. Match key terms with their definitions.

(split shift, short run, block, piece, run, run cutting, roaster, extra board, point check, ride check)

1. a list of assignments;
2. a method in which the checker rides the bus and records the times at major schedule points;
3. two working periods, separated by an unpaid job;
4. process when pieces are assembled into runs;
5. a method when a checker is stationed at a stop and compares actual arrivals of buses with schedule arrivals;
6. extra trips, during peak periods that travel the most heavily used portion;
7. a list of operators on standby;
8. series of trips performed by one vehicle;
9. daily work schedule of an individual crew;
10. a portion of a block handled by a single crew.

Exercise 3. Answer the questions.

1. How many parts of scheduling do you know?
2. What is the specification of timetable?
3. What is a split shift?
4. What do we call a short run?
5. Describe the process of the second part of scheduling.
6. What does run cutting result in?
7. When did automated transit system start to develop?
8. What are the advantages of computerized scheduling?
9. What methods of data collection do transit managers use?
10. What is the importance of scheduling in a modern transit system?

Exercise 4. Find English equivalents in the text.

Управління транзитом; впливати на експлуатаційні витрати; перелік усіх поїздок транспортного засобу; встановлювати час; вводити в розклад додаткові поїздки; відповідати попиту і пропозиції; призначати транспортні засоби; виїзд та прибуття в гараж; готувати графік використовуючи приблизний підрахунок; автоматизована система складання графіку; розробники графіку; керувати (обробляти) потоком інформації; зменшити кількість транспортних засобів і операторів; скасувати заплановану поїздку; викликати на роботу; запізнитися на рейс; дотримуватися графіку; збирати дані про виконання маршруту; порівнювати фактичне прибуття автобусів із запланованим по графіку.

Exercise 5. Translate into English.

1. Розклад руху визначає коли кожна поїздка починається і закінчується.
2. Повинен бути час для зупинки в кінці кожної поїздки до того, як транспортний засіб розпочне іншу.
3. Інтервали між транспортними засобами коротші протягом ранкових та обідніх періодів і довші протягом вечірніх годин.
4. Багато автобусних систем вводять в графік руху додаткові поїздки протягом пікових періодів, але проїжджають вони не всю довжину маршруту.

5. Маршрут транспортного засобу розпочинається із виїзду з гаража і закінчується прибуттям в гараж.
6. Ця запланована поїздка скасована, автобус поламався.
7. Хороші розробники графіку руху вважаються найважливішим персоналом в транзитній системі.
8. Цей графік руху складений від руки використовуючи приблизний підрахунок.
9. Конторолер стоїть на зупинці і порівнює фактичне прибуття автобуса із запланованим по графіку.
10. Цей транспортний засіб не дотримується графіку руху.

Exercise 6. Imagine you are having a conversation at the bus stop. Think of all the problems that can arise and make up a dialogue on the subject “Scheduling”. Some of the following expressions may be helpful:

- A. Personally, I would advise you to....
- B. It might be a good idea if you....
- C. That sounds like a good idea.
- D. All I’m trying to say is...
- E. What can I do for you?
- F. Unfortunately, there is a problem with...
- G. Could you tell me exactly what....?
- H. I’m sorry, but I think you are mistaken.

Text 10

Automotive Industry

The automotive industry **comprises** a wide range of companies and organizations involved in the design, development, manufacturing, marketing, and selling of motor vehicles. It is one of the world’s largest industries **in revenue**. The automotive industry does not include industries **dedicated** to the **maintenance** of automobiles following delivery to the end-user, such as automobile repair shops and **motor fuel filling stations**.

The word automotive comes from the Greek autos (self), and Latin motivus (of motion), referring to any form of self-powered vehicle. The industry's principal product is passenger automobiles; commercial vehicles though important to the industry, are secondary.

The history of the automobile industry, while brief compared with that of many other industries, has **exceptional interest** because of its effects on 20th century history. Although the automobile **originated** in Europe, the United States completely dominated the world industry for the first half of the 20th century through the invention of mass-production techniques. In the second half of the century the situation **altered** sharply as western European countries and Japan became major producers and exporters. In 2009 China took the top **spot**.

In 2007 there were about 806 million cars and trucks on the road, consuming over 980 billion litres of gasoline and diesel fuel yearly. The automobile is a primary mode of transportation for many developed economies. In 2014, one-third of world demand was in the four BRIC markets (Brazil, Russia, India and China). Other potentially powerful automotive markets are Iran and Indonesia. In the United States, vehicle sales peaked in 2000, at 17.8 million units.

The automotive industry has become a **vital element** in the economy of the industrialized countries: motor vehicle production and sales are one of the major indexes of the state of the economy of those countries.

Are you wondering what the current situation of the Ukrainian automotive industry is?

Automotive industry in Ukraine was established during the Soviet times and the first based motor vehicle brands were established in the late 1950s. In the last century, Ukraine was a key manufacturer of all vehicle types within the Soviet Union.

The major domestic players in this industry are UkrAvto (ZAZ), Bogdan, Eurocar, Electron corporation, Etalon-Auto, KrAZ, LAZ. Locally developed designs continue **to prevail** in the production of domestically-designed cars such as ZAZ Tavria has **decreased**. Most car production in Ukraine now involves **assembly** of European, Korean and Chinese brands.

Automobile Manufacturers.

Bogdan Corporation is a leading Ukrainian automobile-manufacturing group including several car- and bus-makers in the country.

The **facilities** of Bogdan Corporation are able to produce 120 000 to 150 000 cars, up to 9 000 buses and trolleybuses of all types, and around 15 000 cargo trucks and units of specialized equipment a year. Facilities are located in Lutsk and Cherkasy.

The facilities in Cherkasy are the most modern auto-manufacturing facilities in Ukraine. Car manufacturing **launched** in 2000. The plant assembled Bogdan 2110, Bogdan 2111, Bogdan 2310 (pick-up) from 2009 to 2014. At the same time Bogdan started assembly of Hyundai Accent, Hyundai Tucson and Hyundai Elantra XD. In 2013 Bogdan and JAC Motors has launched CKD assembly of the JAC J5 sedan in Ukraine.

Buses are mostly produced in Cherkasy while trolleybuses are manufactured in Lutsk. The bus “Bogdan” is the most widely used small bus for city transportation in Ukrainian cities. The plant in Lutsk formerly known as LuAZ now manufactures buses and trolleybuses branded as “Bogdan”. Maximum **capacity** of Lutsk plant is 8000 buses and trolleybuses a year.

ElectronMash plant is an up-to-date enterprise of Electron corporation, which specializes on production of special **off-road all-wheel drive vehicles** – trucks of **multifunctional purpose**, used in public services and **ambulances**.

The production of ElectronMash enterprise is **maneuverable** small public trucks Electron with changeable **kits of attachments** intended **for keeping improvement facilities** in a proper sanitary condition, carrying out different kinds of municipal services in the streets, pavements, parks and territories around the buildings. The users of ElectronMash production are also industrial enterprises, road organizations, **keepers** of other urban and industrial infrastructure.

Joint Ukrainian-German **venture** LLC **Electrontrans** was founded in 2011. Electrontrans is an **enterprise** of a full-scale production, specializing in design and production of modern urban electric transport – trams, trolleybuses, electric buses, **units and spare parts**.

The structure of the enterprise includes design and technological bureau, mechanical and **blanking**, welding, painting and assembly productions.

Electrontrans production capacity allows to produce 100 trams or 100 trolleybuses / electric buses a year.

Etalon-Auto Corporation has 2 facilities in Boryspil (BAZ) and Chernihiv (ChAZ). PJSC Chernihivskyi Automobile Plant is a private (closed) Ukrainian manufacturer of buses and trolleybuses located in Chernihiv. The plant was founded in 2003.

PJSC **Eurocar** is a car manufacturer situated in Solomonovo village, Zakarpattia oblast. The territory of the location of Eurocar plant borders with Slovakia and Hungary.

The Eurocar plant is full of number of technological innovations, with a flexible production process, **well suited to** the conditions in Ukraine. Currently the Eurocar plant produces a complete range of Skoda cars. The manufacturing process uses the most modern approaches, European technology, high automated robotic systems, the system "**vario shuttle**", and the high-tech geometric station AUDI Framer.

KRAZ (Kremenchuk Automobile Plant or **AvtoKrAZ**) is a factory that produces trucks and other special-purpose vehicles in Kremenchuk, Ukraine, particularly **heavy-duty off-road models**.

LAZ (Lviv Automobile Plant) is a bus manufacturing company in Lviv, Ukraine.

It is a private, **holding company**. It still manufactures buses of EURO class, **touring coaches**, low floor citybuses and airports models today.

ZAZ (*Zaporizhia Automobile Building Plant*) is the main automobile-manufacturer of Ukraine, based in the south-eastern city of Zaporizhia. It also produces buses and trucks and is known for its former **parent** company's **name**, AvtoZAZ. ZAZ Zaporozhets, ZAZ-1102, Tavria, ZAZ-1105, Dana were produced at this plant.

When **AvtoZAZ-Daewoo** joint venture with Daewoo Motors was formed in 1998, the plant started assembling Daewoo Lanos, Daewoo Nubira and Daewoo Leganza and later in 2004 ZAZ Lanos. In 2011 ZAZ started full-scale production of the Chery A13 under its own **badge** as ZAZ Forza. The same year production of the Chevrolet Aveo (T250) was moved from the FSO car factory to ZAZ.

In 2012 Zaporizhia Automobile Building Plant started serial full-scale production of a new car - ZAZ Vida.

Essential Vocabulary:

To comprise - включати, охоплювати,

revenue – дохід, джерело прибутку,

dedicated to – присвячений, спеціалізований,

maintenance of the automobile – технічне обслуговування автомобіля,

motor fuel filling station – АЗС, станція заправки моторного палива,

exceptional interest – винятковий інтерес,

to originate – походити, брати початок,

to alter situation – міняти, змінювати ситуацію,

to take the top spot – зайняти перше місце,

vital element – життєво важливий елемент; суттєвий, необхідний елемент,

to prevail – переважати,

to decrease – зменшуватися,

assembly – складання, збір, монтаж,

facilities of the plant – потужності заводу,

to launch – запускати, починати,

capacity – потужність, продуктивність,

off-road all-wheel drive vehicle – позашляховий повнопривідний транспортний засіб,

multifunctional purpose – багатофункціональне призначення,
ambulance – швидка допомога,
maneuverable – маневрений,
kit of attachments – комплект насадок, набір кріплень,
to keep improvement facilities – підтримувати благоустрій,
keeper – власник,
joint venture – спільне підприємство,
enterprise – підприємство,
units and spare parts- агрегати та запчастини,
blanking production – заготівельне виробництво,
well suited to – добре підходити для,
“vario shuttle” – “човниковий варіо”,
heavy-duty off-road model – міцна позашляхова модель,
holding company – холдингова компанія,
touring coach – туристичний автобус,
parent name – материнська назва ???
badge – знак

Text Study

Exercise 1. Are the following statements true or false? Explain your answers.

1. The industry's principal products are commercial vehicles. 2. The automobile originated in Europe and it completely dominated the world industry for the first half of the 20th century. 3. By the beginning of the 20th century western European countries and Japan became major producers and exporters of automobiles. 4. The main contribution of the automotive industry to technological progress was the introduction of full-scale mass-production.

Exercise 2. Answer the following questions.

1. The automotive industry is one of the main branches of national economy, isn't it? What does it include?
2. Why is the history of the automotive industry known to have exceptional interest?
3. The first road vehicles were steam-powered. Is the automotive industry rooted in the steam-powered engine?
4. What was the outstanding contribution to technological advance in the automotive industry?

Exercise 3. Translate into English.

1. Автомобільна промисловість охоплює широкий спектр компаній та організацій, що займаються проектуванням, розробкою, виробництвом, маркетингом та продажем автомобільних транспортних засобів.
2. Основним продуктом автомобільної промисловості є пасажирський автомобіль.
3. Історія автомобільної промисловості має винятковий інтерес завдяки її впливу на історію 20 століття.
4. У II половині 20 століття країни західної Європи та Японія стали основними виробниками та експортерами автомобідів.

5. Автомобіль з'явився в Європі, але США домінували у цій галузі завдяки винаходу техніки масового виробництва у I половині 20 століття.
6. На даний час потужними автомобільними ринками є Бразилія, Росія, Індія, Китай, Іран та Індонезія.
7. Корпорації «Богдан», «Єврокар», «Укравто» - основні внутрішні автовиробники.
8. Автомобільна промисловість – це істотний елемент в економіці індустріалізованих країн.
9. Виробництво і продаж транспортних засобів – один із основних показників стану економіки в країні.
10. В Україні виробничий процес автомобілів використовує найсучасніші підходи, європейські технології, високоавтоматизовані роботизовані системи, систему “човниковий варіо” та високотехнологічна геометричну станцію AUDI Framer.

MINI TEST

1. Translate the word combinations given below.

1. automotive industry; 2. motor vehicle; 3. passenger automobile; 4. commercial vehicle; 5. mass production technique; 6. steam-powered engine; 7. technological advance; 8. to develop confidence; 9. to become an objective; 10. state of the economy.

2. Find definitions to given words.

1. Vehicle. 2. Interchangeability. 3. Engine. 4. Exporter. 5. Body.

A. The main part of the vehicle where the seats are. B. Machine that generates mechanical power. C. Trader who exports goods. D. Any wheeled conveyance for transporting of goods or passengers. E. Ability to be changed.

3. Fill in the gaps in the sentences.

1. Mass production implies 2. The automotive industry has become a ... in the industrialized countries economy. 3. The automobile originated in ... 4. The history of the automotive industry has an exceptional interest because of its effects on the ... 5. though important to the industry are secondary.

A. Commercial vehicles. B. 20th century history. C. Europe. D. Vital element. E. Mass consumption.

4. Match the synonyms.

1. Producer. 2. Progress. 3. Originate. 4. Precision. 5. Makes.

A. Advance. B. To be rooted. C. Accuracy. D. Models. E. Manufacturer.

5. Match the antonyms.

1. Include. 2. Principal. 3. Major. 4. Sell. 5. Better.

A. Worse. B. Buy. C. Minor. D. Secondary. E. Exclude.

6. Name the occupations of the persons.

1. The person who produces goods is ... 2. The person who exports goods is ... 3. The person who buys or uses things is ... 4. The person who handles several different makers is ... 5. The person who sells cars is ...

Text 11

The Modern Automobile

Large-scale production of automobiles began in the early 1950s. The modern automobile is a complex technical system **employing subsystems** with specific design functions.

New automotive features included air conditioning, electrically operated car windows, **seat adjusters**, and a change from a 6-volt to a 12-volt **ignition system** which improved **engine performance**. American cars tended to borrow design features normally found on aircraft and ships. Cars increased in size and weight, but **power steering** and **brakes** made them easier **to handle**. Across the Atlantic, Europeans were making smaller and lighter cars that weighed less than 2800**lb**. Their sports cars had hand-fashioned aluminium bodies over a steel **chassis** and a **framework**.

Passenger cars have **emerged** as the primary means of family transportation. In the early days of the car, the biggest worry was keeping it running. Today we are concerned with aerodynamic designs for speed and fuel efficiency, passenger safety issues, and pollution control systems. In 1900 a car might have a total of 100 parts, while today it has some 14,000. Design innovations include **breakthroughs** in computerization, high-**strength** plastics, and **alloys** of steel and **nonferrous metals**. Accessories can include CD players, **tape decks**, television and phone installations, and separate sound and temperature controls in the front and back of a vehicle. Some cars come equipped with satellite-aided global positioning system (GPS) **locator beacons**, enabling a remote operator to locate a vehicle, map its location, and, if necessary, direct repair or emergency workers to the **scene**.

New designs have been brought into the market more quickly in recent years than in the past **to permit** manufacturer **to capitalize** on their **proprietary** technological advances.

New technical developments are recognized to be the key to successful competition. **Research and development engineers** and scientists have been employed by all automobile manufacturers and suppliers to improve the car body, engine, **drivetrain**, vehicle control systems, **occupant** safety, and environmental emissions, and further work by the industry is necessary **to meet the needs** of the 21st century.

In one form or another, the vehicle has become the major transporter of people and goods in the world. Its basic design and 131 power systems have been widely adapted to vehicles such as the ambulance, jeep, police car, limousine, pickup truck, and tractor trailer.

Today's automobile industry has helped to shape the financial world, and is a major barometer of the economic health of a nation. Automobile sales represent more than one-fifth of U.S. wholesale business, and more than one-fourth of its **retail trade**. Japan and Western Europe are rapidly approaching these levels.

Essential Vocabulary:

to employ – застосовувати,

subsystem – додаткова система,

seat adjuster – пристрій регулювання сидіння,

ignition system – система запалювання,

engine performance – продуктивність двигуна,

power steering – гідропідсилювач керма,

brakes – гальма,

to handle – керувати,

lb. – фунт (одиниця маси),

chassis – шасі,

framework – рама, каркас,

to emerged – з’являтися,
 breakthrough – досягнення, прорив,
 strength – міцність,
 alloy – сплав,
 nonferrous metal – кольоровий метал,
 tape deck – касета,
 locator beacon – маяк локатора,
 scene – місце дії, п
 to permit – дозволяти,
 to capitalize – наживати капітал,
 proprietary – власний, патентований,
 research engineer – інженер дослідник,
 development engineer – інженер розробник,
 drivetrain – привід, передача,
 occupant – пасажир,
 to meet the needs – відповідати потребам,
 retail trade – роздрібна торгівля

Text Study

Exercise 1. Are the following statements true or false? Explain your answers.

1. The modern automobile is a single technical system with definite functions. 2. Some of those subsystems consist of many parts evolved from breakthrough in existing technology or from new discoveries. 3. The total number of passenger cars in use worldwide was expected to reach half a billion in the 2000. 4. Research and development engineers and scientists have been employed to create new models of passenger cars.

Exercise 2. Answer the questions.

1. Modern automobile is defined as a complex technical system. What does it employ?
2. Passenger cars have emerged as the primary means of transportation. How are they distributed through out the world?
3. What models have been offered to the U.S. car buyers?
4. What is recognized to be key to successful competition?
5. Who has been employed by all automobile manufacturers to improve all systems of automobile?

Exercise 3. Translate into English.

1. Пасажирські автомобілі з’явилися як основні засоби сімейного перевезення.
2. Цей сучасний автомобіль відповідає потребам 21 століття.
3. Нововведення в дизайні включають досягнення в галузі комп’ютеризації, високоміцні пластмаси та сплави сталі та кольорових металів.
4. Інженери дослідники, інженери розробники і вчені наймаються всіма автомобільними виробниками та постачальниками.
5. Виробники автомобілів наживають капітал на патентованих технологічних досягненнях.
6. Нові технічні розробки визнані запорукою успішної конкуренції.

7. Нові автомобільні особливості включали кондиціонер, автомобільні вікна з електроприводом, регулятори сидінь, 12-вольту систему запалювання, що покращило експлуатаційні характеристики двигуна.
8. Деякі автомобілі оснащені супутниковою системою глобального позиціонування (GPS), що дозволяє віддаленому оператору знаходити транспортний засіб, наносити на карту його місцезнаходження та, при необхідності, направляти на місце події працівників з ремонту або аварійних ситуацій.
9. Сьогодні автовиробники займаються аеродинамічними конструкціями щодо швидкості та економії палива, питаннями безпеки пасажирів та системами контролю забруднення.
10. Автомобіль марки «BMW» має специфічні функції дизайну.

MINI TEST

1. Translate the word combinations given below.

1. complex technical system. 2. drivetrain. 3. foreign competition. 4. existing technology. 5. primary means. 6. occupant safety. 7. vehicle control system. 8. domestic in origin. 9. specific design function. 10. to improve the car body.

2. Find definitions to the given words.

1. System. 2. Origin. 3. Breakthrough. 4. Alloy. 5. Market.

A. Starting point. B. Major achievements. C. Mixture of metals. D. Place where people buy or sell goods. E. Group or parts working together.

3. Fill in the gaps in the sentences.

1. The modern ... is a complex system. 2. Some automobiles consist of thousand of ... parts. 3. Automobile component parts have evolved from ... in existing technology. 4. Passenger cars have emerged as a primary means of ... transportation. 5. Research and development engineers and ... have been employed by car producers and suppliers.

A. Automobile. B. Component. C. Breakthroughs. D. Famil, E. Scientists.

4. Match the synonyms.

1. Modern. 2. Alloy. 3. Emerge. 4. Supplier. 5. Breakthrough.

A. Achievements. B. Originate. C. Dealer. D. Mixture. E. Contemporary.

5. Find the antonyms to the given words.

1. Buyer. 2. Domestic. 3. Recent. 4. Large. 5. Total.

A. Past. B. Segment. C. Small. D. Foreign. E. Seller.

6. Name the specialities. One of them is a designated driver.

1. ... someone who designs or builds things such as roads, railways, machines. 2. ... someone whose job is to repair vehicles and machines. 3. ... someone at a social event who agrees to drink no alcohol and drive their friends home. 4. ... skilled and trained person who investigates and designs engines, machines etc. 5. ... someone who drives a vehicle, especially as their job.

Text 12

Buses

A bus is a **self-propelled** road vehicle, designed to carry more passengers than any automobile, generally on a fixed route. It was developed at the beginning of the 20th century to compete with streetcars by providing greater **route flexibility**. The bus was a natural

outgrowth of the horse-driven coach. Today buses are defined as vehicles that **accommodate** more than 10 passengers.

There are four main types of buses: city or transit, **suburban**, **intercity or tour**, and school. The city bus operates within the city limits and is characterized by low maximum speed, low-rise platform, **provision** for standing and **wheelchair passenger**, two entrances on the **curb side**, low-back seats, and no luggage space.

The suburban bus is designed for short intercity **runs** and has high-back seats, **luggage compartments** and **racks**, and a single front entrance. The intercity type has a high-rise platform to provide maximum luggage space under the passengers, high-back seats, overhead luggage racks, individual reading lights, and a washroom. A typical intercity coach weighs about 26,000 pounds (12,000 kilograms), has a capacity of up to 47 passengers, a **two-stroke-cycle** diesel **engine** with up to 450 horsepower, an electronically controlled automatic transmission, and **air brakes**. School buses generally consist of a 50-passenger bus body, with special signal lamp and safety provisions, **mounted** on a **long-wheelbase truck chassis**.

Articulated buses were first used in Europe in the 1950s. In this arrangement a trailer body is connected to the rear of conventional front-engine bus by means of a **hitch**, a flexible diaphragm, and a **continuous floor panel** with **accurate mating surface** during turn manoeuvres. This arrangement permits up to a 75 percent increase in seating capacity and 20 percent improvement in fuel efficiency per seat-mile. The turning radius is the same as that of conventional bus. Manufacture of this design was begun in the United States in the 1980s by several European firms. Double decking, increased seating comfort and larger glass areas have been trends in tour buses, principally in Europe and Asia.

Essential Vocabulary:

self-propelled – самохідний,

route flexibility – гнучкість маршруту,

outgrowth – наслідок, результат,

to accommodate – розміщувати,

suburban bus – приміський автобус,

intercity bus – міжміський автобус,

tour bus – туристичний автобус,

provisions – засоби,

wheelchair passenger – пасажир на інвалідному візку,

curb side – бокова сторона,

run – рейс,

luggage compartment – багажне відділення,

rack – вішалка, стелаж,

two-stroke-cycle engine – двотактний двигун,

air brakes – пневмо гальма

to mount – монтувати,

long-wheelbase truck chassis – шасі вантажівки з довгою колісною базою,

hitch – шарнір, зчіпка,

continuous floor panel – суцільна панель підлоги,

accurate mating surface – чітка панель сполучення

Text Study

Exercise 1. Are the following statements true or false? Explain your answers.

1. A bus is a self-propelled vehicle developed to compete with the horse-driven coach. 2. Modern buses are defined as vehicles that provide seating capacity for more than 10 passengers. 3. The suburban bus is designed for long intercity runs. 4. The typical tour bus has a capacity of up to 47 passengers. 5. Both conventional and articulated buses have the same turning radius.

Exercise 2. Answer the following questions.

1. What vehicles are designed as buses? When was the first bus developed?
2. What are the principal types of buses?
3. What are the characteristics of intercity buses?
4. When and where were the first articulated buses developed and used?

Exercise 3. Fill in the following blanks with the appropriate word or phrase.

1. Self-propelled vehicle designed to carry ... than an automobile . 2. The bus was developed ... to compete with streetcars. 3. Vehicle that can carry more than 10 passengers is defined ... 4. The principal types of buses are ... 5. The capacity of ... makes up to 70 passengers. 6. The bus operating within the city limits ...

Exercise 4. Translate into English.

1. Автобус – це транспортний засіб призначений перевозити більше пасажирів ніж будь-який автомобіль по фіксованому маршруту.
2. Автобус був винайдений на початку 20 століття, щоб конкурувати з автомобілями.
3. Автобусом вважається транспортний засіб, що розміщує більше ніж 10 пасажирів.
4. Є 4 основні типи автобусів: міський або транзитний, приміський, міжміський або туристичний та шкільний.
5. Міський автобус їздить в межах міста і має низьку максимальну швидкість.
6. Великий червоний двоповерховий автобус – це традиційний лондонський автобус.
7. Шарнірний автобус вперше з'явився в Європі вт 1950 роках.
8. Звичайний міжміський автобус може вмістити 47 пасажирів, має двотактний дизельний двигун потужністю 450 кінських сил, автоматичну коробку передач, пневмо гальма.
9. Шкільний автобус повинен мати спеціальну сигнальну лампу та засоби безпеки.
10. Приміський автобус призначений для коротких міжміських рейсів.

MINI TEST

1. Translate word combinations given below.

1. self-propelled. 2. fixed route. 3. trailer body. 4. continuous floor panel. 5. accurate mating surface. 6. to accommodate more than 10 passengers. 7. low-back seats. 8. luggage compartments. 9. electronically controlled automatic transmission. 10. overhead luggage

rack.

2. Fill in the gaps in the sentences.

1. A bus is a ... road vehicle. 2. The bus was developed at the beginning of the ... century to compete with street cars. 3. The bus was an ... of the coach pulled by horses. 4. The city bus has two entrances on the ... side. 5. In an ... a trailer body is connected to the rear part of a conventional bus.

A. outgrowth. B. self-propelled. C. articulated bus. D. curb. E. last.

3. Match the synonyms.

1. Operate. 2. Rack. 3. City bus. 4. Increase. 5. Suburban bus.

A. Transit bus. B. Improvement. C. Intercity bus. D. Travel. E. Luggage shelf.

4. Match the antonyms.

1. Suburbs. 2. High-back seat. 3. Entrance. 4. Articulated bus. 5. Maximum.

A. Exit. B. Minimum. C. Conventional bus. D. Low-back seat. E. Downtown.

5. Name the component parts of the vehicle.

1. ... is a device for reducing speed or stopping motion of the vehicle. 2. ... is the frame together with the wheels of a vehicle. 3. ... is the area at the front or back of a bus where people stand. 4. ... is something you can sit on. 5. ... is the part of a vehicle that takes power from the engine to the wheels.

Text 13

Lorries

A lorry, or truck, is a motor vehicle designed to carry freight or goods or to perform special services. The lorry was derived from horse-driven wagon technology and some of the **pioneer manufacturers** came from the wagon business. Because of their speed and flexibility, lorry **carries** a quarter of the intercity freight. Lorries enjoy almost total monopoly in freight delivery.

In 1896 Gottlieb Daimler of Germany built the first motor lorry. It **was equipped with** a **four-horsepower engine** and a **belt drive** with two speeds **forward** and one in **reverse**. In 1896 the Winton Company of the United States produced a gasoline-powered wagon with a single-cylinder six-horse-power engine.

In World War I motor lorries were widely used, and in World War II they largely replaced horse-drawn equipment. A **notable** vehicle was the four wheel-drive, **short-wheelbase jeep**, capable of performing a variety of military tasks.

Lorries can be classified as either **straight** or **articulated**. A straight lorry is one in which all **axles** are attached to a single frame. An articulated vehicle is one that consists of two or more separate frames connected by suitable **couplings**.

Axle **assemblies** of heavy lorries may be made up of two or more axles, any of which may be powered. Normally, they are so spaced that the distance between axle centers is not more than one-half times the overall diameter of the wheel and tyre. If the axles are separated by a large distance, the assembly is called a spread tandem.

The ratio of lorries to the passenger cars in the world is increasing annually.

Essential vocabulary:

pioneer manufacturer – перший виробник,

to carry – перевозити,

to be equipped with – бути оснащеним,

four-horsepower engine – двигун потужністю 4 кінські сили,
belt drive – пасова, ремінна передача,
forward speed – швидкість руху вперед,
reverse speed – зворотня, задня швидкість,
notable – визначний, помітний,
wheel-drive – привід колеса,
wheel-base – відстань між вісями,
short-wheelbase jeep – малолітражний джип,
straight lorry – вантажівка з розташуванням циліндрів в один ряд,
articulated lorry – зчеплена вантажівка,
axle – вісь,
coupling – щеплення, муфта,
assembly – монтаж, зборка

Text Study

Exercise 1. Fill in the blanks with the appropriate word or phrase.

1. Lorries are vehicles ... 2. are usually classified ... 3. The first motor lorry was ... 4. ... enjoy in intercity freight delivery. 5. ... were widely used in, and in ... they ... horse-drawn equipment.

Exercise 2. Are the following statements true or false? Explain your answers.

1. A motor car designed to carry passengers is lorry. 2. Lorries were widely used in World Wars. 3. Lorries are classified according to the number of axles. 4. The manufacture of lorries is increasing every year. 5. The axles of heavy lorries are so spaced that the distances between axles centers is not more than one-half times the overall diameter of wheel and tyre.

Exercise 3. Answer the following questions.

1. What type of vehicle is defined as lorry? What is it designed for?
2. What was the first motor lorry like?
3. How are lorries usually classified?
4. What is an articulated vehicle?

Exercise 4. Translate into English.

1. Вантажна машина – це транспортний засіб призначений перевозити вантаж або товар чи виконувати спеціальні послуги.
2. Кількість вантажівок у світі щорічно зростає.
3. Перша вантажівка з двигуном потужністю 4 кінські сили була сконструйована в Німеччині.
4. Вантажні машини майже повністю контролюють доставку вантажу.
5. Вантажні машини поділяються на шарнірні та з однолінійним розташуванням циліндрів.
6. Що таке шарнірний транспортний засіб?
7. Вантажні машини поділяються відповідно до кількості рам.
8. Ця компанія не хоче перевозити товар вантажною машиною.
9. Ця вантажівка має хорошу швидкість і маневреність.

10. Я не вмію керувати вантажною машиною.

MINI TEST

1. Translate word combinations given below.

1. four wheel-drive vehicle. 2. to carry goods. 3. six-horsepower engine. 4. short wheelbase jeep. 5. belt drive. 6. horse-driven wagon. 7. freight delivery. 8. separate axle. 9. reverse speed. 10. forward speed.

2. Find definitions to given words.

1. Monopoly. 2. Lorry. 3. Speed. 4. Freight. 5. Wagon.

A. Wheeled vehicle for carrying goods. B. Complete control. C. Load. D. Rapidity of movement. E. Long, low, open-motor vehicle for carrying goods by road.

3. Fill in the gaps in the sentences.

1. A lorry is a vehicle designed to perform ... 2. A lorry carries a quarter of the ... 3. Lorries have almost complete control in ... 4. The first motor lorry was equipped with a ... with two speeds forward and one in reverse. 5. ... of motor lorries may be made up of many axles.

A. Axle assemblies. B. Special services. C. Belt drive. D. Intercity freight. E. Freight delivery.

4. Match the synonyms.

1. Lorry. 2. Freight. 3. Monopoly. 4. Perform. 5. Seat belt.

A. Truck. B. Do. C. Load. D. Control. E. Safety belt.

5. Match the antonyms.

1. Separate. 2. The first. 3. Heavy. 4. Large. 5. Straight.

A. Small. B. The last. C. Articulated. D. Single. E. Light.

6. Name the following component parts of the vehicle.

1. ... – a strong belt in a car that is fastened around the passenger to hold smb. in smb's seat. 2. ... – the distance between the front and rear wheels of a vehicle. 3. ... – a metal bar that connects a pair of wheels on a car or other vehicle. 4. ... – link that joins two parts. 5. ... – the circular band that helps to take the power from an engine to the wheels for turning the wheels of a vehicle.

Text 14

Information Technologies in Transport

Information technology (IT) is process and “act upon” information at the right time and place, makes greater market intelligence possible. IT is instrumental in supporting the basic internal and inter-company transactions associated with distribution, transport and related services, i.e.: preparation of the logistics process; planning of the process; operations and control; financial settlement; **fleet** maintenance and monitoring.

The benefits of all information technology innovations in road freight operations result from improved, real-time electronic exchange of, and acting upon, data and information. Information technology innovations enable or will require the electronic exchange of data and information concerning:

- cargo, vehicle and driver identification status;
- vehicle location;
- current traffic conditions;

- optimal routing, taking into considerations the availability of loads and appropriate equipment to move them, traffic and weather conditions, the nature of the cargo being transported, using routing algorithms or “artificial intelligence” (so-called “real-time routing”);
- optimal routing of cargo (package or whole shipments);
- optimal routing of load units (trailers, containers, swap bodies, etc.)

Here are the main innovations in information technology:

1. **Automatic vehicle identification:** transmits vehicle information (identification, size and weight, vehicle type or class);
2. **Bar coding:** provides product & picking information (identification, size and weight, origin and destination);
3. **Electronic data interchange:** transmits business data and provides electronic business documentation (purchase order, bill of lading; **packing slip; invoice; electronic funds transfer**);
4. **In-vehicle navigation systems:** Provides driver with information (highway and traffic conditions; location (of vehicle, destination, etc.); alternate routes; automatic vehicle spacing);
5. **On-board computer (mobile IT):** monitors vehicle and driver behavior (vehicle speed; engine **idle time**; engine oil temperature & pressure; vehicle stop time and distance; driver’s braking habits);
6. **Two-way communication systems:** exchange messages between dispatcher and driver (trip and shipment information; location (of vehicle, destination, etc.) including location of **maintenance** and repair shops).

Technological innovation provides an excellent opportunity to integrate the transport modes, optimise their performance, make them safer and help make the European transport system **compatible** with sustainable transport development.

The strategic objectives deal with the reduction of greenhouse gases and pollutant emissions, the security of energy supply and the balanced use of the various transport modes. The development of a new generation of hybrid electric cars (electric motor combined with a heat engine) and cars which run on natural gas or, in the longer term, hydrogen fuel cells, looks very promising.

Technological developments **enhance** the usual methods of control and **penalties**, with the introduction of automatic devices and onboard driving **aids**. In the same context, the eventual fitting in road vehicles, as in other forms of transport, of black boxes to record parameters which help explain the causes of accidents, will make motorists more responsible and enable more effective prevention measures to be taken. The introduction of electronic **driving licenses** could also help with the **enforcement** of penalties, such as the immobilisation of vehicles whose drivers have lost their licenses.

Technological progress should also increase vehicles’ impact resistance thanks to the development of new materials and the introduction of new advanced design processes for structural integrity. Current progress with tyres (reduced water protection for **HGV** tyres, improved **road holding** on slippery surfaces, warning system to indicate under-inflated tyres) should in the short term make for reduced fuel consumption and rolling noise while maintaining a high level of safety. This should produce a 10% saving on fuel and around 1000 fewer deaths per year.

Protection of vehicle **occupants** in the event of impact is progressing remarkably. Electronic systems will enable new smart protection devices (airbags for example) to adjust for the number of vehicle occupants, their morphology and the nature of the impact so as to provide more tailored protection. **Reminders** to put safety belts on must become standard vehicle equipment.

Finally, as the volume of traffic increases, better vehicle-speed management is an essential aspect of safety that will also help **tackle** congestion. In addition to improved road safety, observation of speed limits will also reduce greenhouse gas emissions significantly. The most promising prospects here are offered by new technologies that can determine optimum speed at any moment **with reference to** traffic conditions, road features and external conditions (such as weather) and pass the information on to drivers by way of information display boards or on-board communication systems. Roads and vehicles throughout the European Union and our country need to be equipped with these new technologies as soon as possible, and information systems made accessible to everyone.

Essential Vocabulary:

aids – допоміжні засоби

bill of lading – коносамент, транспортна накладна

compatible – сумісний

driving licence – водійські права

enforcement – вимога про дотримання (законів, стандартів, норм, тарифів)

to enhance – збільшувати, посилювати, покращувати

electronic funds transfer (EFT) – електронний перевід засобів (платежів)

to fit – монтувати, установлювати

fleet – парк (транспортних засобів)

HGV – heavy goods vehicle – вантажний автомобіль

idle time – час простою

immobilization – втрата рухливості

invoice – рахунок-фактура, накладна

maintenance – технічне обслуговування, ремонт, експлуатація

occupant – пасажир

packing slip = packing list – пакувальна відомість

penalty – штраф, покарання

protection device – захисний прилад, запобіжник

purchase order – замовлення на покупку, доставку

with reference to smb./ smth. – посилаючись на когось/ щось

reminder – прилад передачі аварійних сигналів

road holding – утримання дороги (автолюбителем), курсова стійкість

routing – вибір маршрута, схеми руху

smart device – інтелектуальний прилад

spacing – інтервал, відстань, проміжок

to tackle – намагатися знайти рішення (якихось питань)

Text Study

Exercise 1. Match the word with the appropriate definition.

Exchange, driving license, distribution, bar code, technology, telematics.

1. the application of practical sciences to industry or commerce;
2. the division of the total income of a community among its members, esp. between labour incomes (wages and salaries) and property incomes (rents, interest, and dividends);
3. to transfer or hand over (goods) in return for the equivalent value in kind rather than in money; barter; trade;
4. a machine-readable arrangement of numbers and parallel lines of different widths printed on a package, which can be electronically scanned at a checkout to register the price of the goods and to activate computer stock-checking and reordering;
5. the branch of science concerned with the use of technological devices to transmit information over long distances;
6. an official document or certificate authorizing a person to drive a motor vehicle.

Exercise 2. Match the words and word combinations with the similar meaning.

- | | |
|------------------|-----------------|
| 1) to enhance | a) to regulate |
| 2) penalty | b) crash |
| 3) in the event | c) to support |
| 4) seat belt | d) passenger |
| 5) accessible | e) advantage |
| 6) occupant | f) safety belt |
| 7) to adjust | g) to intensify |
| 8) to provide | h) available |
| 9) accident | i) punishment |
| 10) to encourage | j) in case of |
| 11) objective | k) to supply |
| 12) benefit | l) goal |

Exercise 3. Choose the right variant for each word combination.

- | | |
|-----------------------------|-------------------------------------|
| 1) braking habits | a) фінансове урегулювання |
| 2) on-board computer | b) ударостійкість |
| 3) renewable energy sources | c) оптимальна маршрутизація |
| 4) vehicle spacing | d) профілактичні міри |
| 5) repair shop | e) ремонтна майстерня |
| 6) financial settlement | f) стиль водіння |
| 7) optimal routing | g) оновлені джерела енергії |
| 8) heat engine | h) пристебнути ремені безпеки |
| 9) fleet maintenance | i) відстань між автомобілями |
| 10) hydrogen fuel cells | j) бортовий комп'ютер |
| 11) onboard driving aids | k) тепловий двигун |
| 12) prevention measures | l) обслуговування парку |
| 13) impact resistance | m) система попередження |
| 14) improved road holding | n) інтелектуальний прилад захисту |
| 15) slippery surface | o) водневі паливні елементи |
| 16) warning system | p) бортові допоміжні засоби водіння |
| 17) smart protection device | q) спеціалізований захист |
| 18) tailored protection | r) слизька поверхня |

19) to wear seatbelts

s) покращене утримання дороги

Exercise 4. Answer the following questions.

1. What is “information technology”?
2. What do information technology innovations enable?
3. What are the main innovations in information technology?
4. What does technological innovation provide?
5. Protection of vehicle occupants in the event of impact is progressing remarkably, isn't it?

Exercise 5. Substitute the words in Ukrainian with their appropriate equivalents in English.

1. Technological innovation (забезпечує) an excellent (можливість) to integrate the (види транспорту), make them safer and help make the European transport system (сумісною) with (стійким) transport development.
2. (Бортовий комп'ютер) monitors vehicle and (поведінку водія): vehicle speed; engine (час простою); (); driver's (стиль водіння).
3. In addition to improved (безпека доріг), observation of (обмеження швидкості) will also (зменшить) greenhouse gas (викиди) significantly.
4. The most (обіцяючий) prospects are offered by new technologies that can (визначати) optimum speed at any moment with reference to (умови руху), (характеристика доріг) and external conditions and pass the information on to drivers by way of information display boards or (бортова система зв'язку).
5. Technological (розробки) enhance the usual methods of control and (штрафів), with the introduction of automatic devices and (бортові допоміжні засоби водіння).
6. As the (об'єм руху) increases, better (управління швидкістю автомобіля) is an essential aspect of (безпека) that will also help (вирішувати систему заторів).
7. IT is instrumental in supporting the basic (угода) associated with (розподілення), transport and (фінансове урегулювання); fleet (технічне обслуговування) and monitoring.
8. (Захист) of vehicle (пасажирів) (у випадку зіткнення) is progressing remarkably.
9. Information technology innovations (вимагати) the electronic (обмін даних) and information concerning: (вантаж); vehicle location; current (умови руху); optimal (схеми руху вантажу).
10. The eventual (установка) in road vehicles, as in other forms of transport, of (чорних ящиків) to record parameters which help explain the (причина аварії), will make motorists more (відповідальний) and enable more effective (профілактичні заходи) to be taken.

Exercise 6 Translate the following noun+noun constructions into Ukrainian.

1. mass production industries;
2. material flow system;
3. road transport markets;
4. market observation system;
5. public transport users;
6. transport logistics characteristics;

7. supply chain management;
8. customer relationship management;
9. road safety audits and inspections;
10. manufacturing flow management;
11. demand forecast data;
12. freight transport services;
13. raw material inventory stock level;
14. transport sector energy consumption;
15. door-to-door delivery system;
16. air traffic control system;
17. traffic accident statistics;
18. supply chain business process integration

Exercise 7. Translate the sentences into Ukrainian, paying attention to the infinitive.

1. Transport telematics is assumed to contribute to goal achievement in the transport sector in Norway.
2. Even though the drivers seem to acknowledge falling asleep as an important cause in road accidents, few drivers seem aware of the severity of sleep-related accidents.
3. Road transport growth is expected to soar in Eastern Europe.
4. Logistics experts consider it is increasingly important for manufacturers, distributors and retailers to focus on efficiency in seeking out solutions to meet their specific transportation requirements.
5. Very few measures have been taken to provide a basic regulation of social conditions in the road transport sector.
6. What is needed is to make rail transport once again competitive enough to remain one of the leading players in the transport system in the enlarged Europe.
7. The concept of containerization is considered to be the key innovation in the field of logistics which has revolutionized freight handling in the 21st century.
8. As the Internet and other new communication technologies are developing, it is expected to bring more innovations which further simplify the tasks of logistics.
9. Today various mathematical and analytical methods are available to solve the problems of vehicle routing.

Text 15

Logistics

Logistics can be defined as the management of the **flow of goods**, information and other resources, energy and people between the **point of origin** and the **point of consumption** in order to **meet the requirements** of consumers. Logistics involves the **integration** of information, transportation, inventory, **warehousing**, **material handling**, packaging and security. Logistics may have an internal focus (inbound logistics), or external focus (outbound logistics).

If the company manufactures a product from parts purchased from suppliers, and those products are then sold to customers, one can speak about a **supply chain**. Supply Chain can be defined as a network of facilities and distribution options that performs the

function of **procurement** of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers.

Logistics management is part of supply chain management. Logistics management plans, implements, and controls the efficient flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements.

Successful supply chain operators work in close partnerships with their customers; they jointly explore the opportunities for increasing efficiency of the supply chain and improving service levels by using the latest systems and techniques. This approach is also referred to as **logistics re-engineering**. The re-engineering process considers the following factors: the nature of the product, the optimal or preferred location of source or manufacture, freight and transport costs and the destination market, seasonal trends, import and export **regulations**, customs duties and **taxes**, etc.

A professional working in the field of logistics management is called a logistician. The main functions of a qualified logistician include, among other things, inventory management, purchasing, transportation, warehousing, consultation and organizing and planning of these activities. Logisticians are responsible for the **life cycle** and supply chain operations of a variety of products. They are also responsible for customs documentation. They regularly work with other departments **to ensure** that the customers' needs and requirements are met.

Essential Vocabulary:

flow of goods – потік товарів

point of origin – точка походження

point of consumption – точка споживання

to meet the requirements – відповідати вимогам

integration – інтеграція, об'єднання

warehousing – склад, складування

materialhandling – транспортування матеріалів

supply chain – ланцюг поставок

procurement of materials – закупівля матеріалів

logistics re-engineering – реінженіринг (перепроєктування) логістики (логістичних процесів)

regulations – правила

tax – податок

life cycle – життєвий цикл

to ensure – гарантувати, забезпечувати

Text Study

Exercise 1. Answer the questions.

1. What does the term “logistics” imply?
2. What does the term “supply chain” imply?
3. What is logistics management?
4. What do service providers do in order to increase efficiency of the supply chain?
5. What process is called “logistics re-engineering”?
6. What factors does this process consider?

7. What are the main functions of a qualified logistician?
8. What are professional logisticians responsible for?

Exercise 2. Translate the following terms.

Supply chain, supply chain management, flow of goods, storage of goods, point of origin, point of consumption, consumer, supplier, customer, provider, huge network, procurement, transformation, warehousing and distribution, intermediate product, finished product, to meet customers' requirements, re-engineering, freight and transport costs, destination market, seasonal trends, import and export regulations, customs duties and taxes, various activities, inventory management, delivery services, order fulfilment.

Exercise 3. Match each word from a with one from b to make word combinations.

- a) Internal, finished, qualified, service, optimal, logistics, seasonal, destination, life, customs.
- b) Provider, documentation, location, cycle, focus, logistician, trends, market, re-engineering, product.

Exercise 4. For nouns in column B find suitable attributes in column A.

A	B
1. customer	a) management
2. order	b) logistician
3. product	c) channel
4. cost	d) flow
5. inventory	e) fulfilment
6. experienced	f) regulations
7. export	g) network
8. cash	h) savings
9. express	i) range
10. customs	j) services
11. supply	k) process
12. transportation	l) duties
13. distribution	m) chain
14. re-engineering	n) group

Exercise 5. Decide whether the following statements are true or false.

1. Logistics can be defined as the management of the flow of goods between the point of origin and the point of consumption.
2. Logistics involves the integration of information, transportation, inventory, warehousing, etc.
3. Usually, logistics does not involve the management of the flow of energy and people.
4. Logistics always has an external focus.
5. All supply chains are very simple.
6. The complexity of the supply chain will vary with the size of the business.
7. Logistics management is part of supply chain management.
8. Logistics management plans, implements, and controls the efficient flow and storage of goods, services and related information.

9. Successful supply chain operators work in close partnerships with their customers.
10. The re-engineering process does not consider the nature of the product.
11. A professional working in the field of logistics management is called an academician.
12. The main functions of a qualified logistician include, inventory management, purchasing, transportation, warehousing, etc.
13. Logisticians are responsible for the life cycle and supply chain operations of a variety of products.
14. Logisticians normally do not work with other departments of the company.

Exercise 6. Match the parts you find under A with the parts under B to make meaningful sentences.

A	B
1. Supply chain	a) work in close partnerships with their customers
2. Successful supply chain operators	b) inventory management, purchasing, transportation, and warehousing.
3. Service providers	c) the integration of information, transportation, inventory, warehousing, material-handling, and packaging, and security.
4. The re-engineering process considers	d) is the ability to ensure that the right products are sourced, made available at the right place and at the right time 5) e) to ensure customer needs and requirements are met.
5. Logistics involves	
6. The main functions of a qualified logistician include	f) the nature of the product, the optimal or preferred location of source or manufacture, the projected volumes freight, etc.
7. Logisticians work with other departments	g) use the latest systems and techniques to re-engineer the process

Exercise 7. Complete the passage below with the words from the box below.

<i>service</i>	<i>chain</i>	<i>origin</i>	<i>activities</i>
<i>technology</i>			<i>outbound</i>
<i>operational</i>			

Logistics management is that part of supply 1) _____ management that plans, implements, and controls the effective forward and reverse flow and storage of goods, services and information between the point of 2) _____ and the point of consumption. 15 Logistics management activities usually include inbound and 3) _____ transportation management, fleet management, warehousing, materials handling, order fulfilment, logistics network design, inventory management, supply/demand planning, etc. The logistics function also includes sourcing and procurement, production planning and

scheduling, packaging and assembly, and customer 4) _____. It is involved in all levels of planning and execution – strategic, 5) _____ and tactical. Logistics management is an integrating function, which coordinates all logistics 6) _____, as well as integrating logistics activities with other functions including marketing, sales manufacturing, finance, and information 7) _____.

Exercise 8. a) Read the sentences given below and identify the tense form used in each of them. Translate the sentences.

1. Last year, the U.S. business logistics industry continued to grow at an unprecedented rate.
2. Global competition began to spread in the 1970s and accelerated in the 1990s.
3. Logistics has evolved throughout centuries to become an integral part of every business.
4. Globalization is still moving forward today.
5. Since 2000, the rail freight industry has undergone a remarkable transformation.
6. Logistics has been playing a fundamental role in global development for almost 5,000 years.
7. Since the construction of the pyramids in ancient Egypt, logistics has made a remarkable progress.
8. Recently, innovations have become vital to meet customer expectations.
9. Now, the company is working on a new project.
10. Usually, freight forwarders organize shipping of various goods.
11. Now, the ABC Company is expanding its production facilities to include a new product line.

b) Complete the sentences with the correct alternative.

1. Logistics as a business concept evolved/has evolved in the 1950s.
2. Production logistics gets/is getting more and more important now.
3. At present, supply chain operators use/are using the latest systems and techniques.
4. Trucking costs increased/has increased by \$52 billion in 2013. 17
5. The invention of the sea container in 1956 changed/has changed production conditions for nearly all industries around the world.
6. Since the early 1990's, the business scene changed/has changed, and logistics operations became/have become much more complex.
7. The global logistics market grew/has grown radically in the last ten years.
8. We worked/have been working on this project for two years.
9. Typically, procurement logistics includes/is including various activities such as market research, requirements planning, etc.
10. Now, students study/are studying Fundamentals of Logistics.

Unit III

Transport and Transportation Documentation.

Text 16

Passenger transportation

There are two main types of passenger transportation: private transportation and public transportation. People who use private transportation **operate** their own **vehicles**. Those who use public transportation pay to ride on vehicles owned and operated by private companies or government.

Private transportation in industrial countries is provided mainly by automobiles, bicycles, motorcycles, and private airplanes. Automobiles are **by far** the most important **means of private transportation**.

Automobiles are also the chief means of passenger transportation in Australia, Canada, Japan, New Zealand, and most of the nations of Western Europe. People in these countries and in the United States own about 77 per cent of the world's automobiles. There are about 12 million miles (19 million kilometres) of roads **throughout the world**. About one-third of this **mileage** is in the United States.

Public transportation. Any organized passenger service that **is available to** the general public can be **classed** as public transportation. There are three main types of public transportation service: **urban, intercity, and overseas**.

Urban service. Most large urban areas provide **dome means** of public transportation for people who do not own a car or who prefer **to avoid** city driving whenever possible. Public transportation in urban areas is called mass transit. Mass transit between cities and their **suburbs** is often called **commuter service**.

Buses are the chief mass transit vehicles. However, most of the world's big cities offer rail service in addition to bus service. About 90 cities throughout the world have both **subway and surface rail lines**. Many big cities throughout the world also have **elevated trains**, which **run on tracks** above the streets.

Intercity service is provided mainly by airplanes, buses, and trains. Airlines **handle** the biggest **share** of this traffic, and railroads the smallest. The airlines share increases with **the length of the trip**. High-speed trains can **compete** with airliners for passengers on runs up to about 500 miles (800 kilometres).

Overseas service. The first overseas airlines began operations during the 1930's. But the planes had to stop frequently during a flight for **refueling**. The first non-stop transoceanic airliners appeared during the late 1940's. These propeller-driven planes could carry passengers across the Atlantic safely and comfortably in hours rather than days.

Today, almost all overseas travelers go by plane. Only one ocean liner, Britain's *Queen Elizabeth 2*, still makes transatlantic voyages. Most ocean liners today operate as cruise ships. They specialize in taking **vacationists** to the Caribbean, the Mediterranean, and other warm areas.

In 1976, the first supersonic airliner, the Concorde, began service between Europe and the United States. The Concorde travels between New York City and London or Paris – a distance of about 3,500 miles (5,630 kilometres) – in approximately 3.5 to 4 hours. However, travelling by supersonic airliner is expensive because these planes **consume** large amounts of fuel.

The cheapest way to move general **cargo** is by water. Rail transportation costs about 3 times as much as water transportation, and truck transportation costs about 10 times as much. Air transportation is by far the most expensive way to move **freight**. It costs nearly 40 times as much as water transportation. Because air transportation is so costly, cargo planes usually carry only expensive, **lightweight**, or **perishable merchandise**.

Transportation is one of the **leading industries** in the world. Many of the world's biggest industrial firms **earn** all or much of their **income** from the sale of equipment or fuel for transportation. The transportation industry **employs** many millions of people in countries throughout the world. In the United States alone, about 10 per cent of all workers are directly or indirectly involved in providing transportation.

Essential Vocabulary:

to operate the vehicle – їздити транспортним засобом,
by far – значно, набагато,
means of transportation – засоби (способи) транспорту (транспортування, перевезення),
throughout the world – по всьому світі,
mileage – відстань у милях,
to be available to – бути доступним для,
to class – класифікувати,
urban service – міський сервіс,
intercity service – міжміський сервіс,
overseas service – закордонний сервіс,
dome means of transportation – внутрішні, місцеві засоби (способи) перевезення,
to avoid – уникати,
suburb – околиця, передмістя,
commuter service – регулярний сервіс,
subway and surface rail lines – підземні та надземні (повітряні) залізничні лінії,
elevated trains – надземні поїзди,
to run on tracks – їхати по коліях,
to handle – управляти, керувати,
share – частина,
the length of the trip – довжина подорожі,
to compete – конкурувати,
refueling – дозаправка,
vacationists – відпочивальники,
to consume – споживати,
cargo – вантаж,
freight – фрахт, вантаж,
lightweight – легкий,
perishable merchandise – товар, що швидко псується,
leading industry – провідна промисловість
to earn income – заробляти дохід (прибуток),
to employ – наймати.

Text Study

Exercise 1. Answer the questions:

1. How many types of passenger transportation do you know? What are they?
2. What is private transportation provided by?
3. What is the most important means of private transportation?
4. What do we call public transportation?
5. How many types of public transportation do you know? What are they?

6. What is called commuter service?
7. What service is provided mainly by airplanes, buses, and trains?
8. When did the first non-stop transoceanic airliners appear?
9. What ocean liner makes transatlantic voyages?
10. What is the first supersonic airliner?
11. What are the ways to move general cargo? What is the cheapest and what is the most expensive?
12. Why is transportation the leading industry in the world?

Exercise 2. Find English equivalents in the text.

Приватний та громадський транспорт (перевезення), їздити транспортним засобом, найважливіший засіб транспортування, найдешевший спосіб перевезення, найдорожчий спосіб перевезення, високошвидкісні та надземні поїзди, довжина подорожі, зупинятися для дозаправки, споживати велику кількість палива, круїзні кораблі, надзвуковий літак, провідна промисловість, продаж обладнання і палива, наймати людей, перевозити товар, що швидко псується.

Exercise 2. Complete the sentences.

1. There are two main types of passenger transportation
2. Private transportation in industrial countries is provided
3. Automobiles are also the chief means of
4. There are about 12 million miles of
5. There are three main types of public transportation service
6. About 90 cities throughout the world have
7. High-speed trains can
8. Most ocean liners
9. The first non-stop
10. The cheapest way to move general cargo
11. Transportation is one
12. The transportation industry employs

Exercise 3. Choose the necessary word and put it in the sentence.

- | | |
|--|----------------------------|
| 1. People who use private transportation operate their own | 1. cargo |
| 2. Automobiles are by far the most important means of | 2. buses |
| 3. Public transportation in urban areas is called | 3. vehicles |
| 4. Today, almost all overseas ... go by plane. | 4. mass transit |
| 5. The cheapest way to move general is by water. | 5. private transportation. |
| 6. Many of the world's biggest industrial firms ... all or much of their income from the sale of equipment or fuel for transportation. | 6. travellers |
| | 7. earn |
| 7. are the chief mass transit vehicles. | |

Exercise 4. Tell what sentences are true, what are false.

1. People who use private transportation operate their own vehicles.
2. Buses are by far the most important means of private transportation.
3. Any organized passenger service that is available to the general public can be classed as private transportation.
4. About 90 cities throughout the world have both subway and surface rail lines.
5. But the planes had to stop frequently during a flight for refueling.

6. Today, almost all overseas travelers go by sea.
7. Ocean liners specialize in taking vacationists to the Caribbean, the Mediterranean, and other warm areas.
8. Travelling by supersonic airliner is not expensive because these planes consume large amounts of fuel.
9. Air transportation is by far the cheapest way to move freight.
10. Transportation is one of the leading industries in the world.

Exercise 5. Translate into English.

1. Перевезення (транспорт) – це провідна галузь промисловості у світі.
2. Я надаю перевагу їздити своїм власним транспортним засобом.
3. Громадський транспорт може бути міським, міжміським та закордонним.
4. Декілька років тому уряд нашої країни закупив високошвидкісні поїзди.
5. Надзвукові літаки споживають багато палива.
6. Ця фірма отримала прибуток від продажу обладнання для транспортування.
7. Вантажні літаки перевозять квіти тому, що це товар, який швидко псується.
8. Багато відпочивальників подорожують круїзними кораблями.
9. Великі міста в усьому світі мають підземні та надземні залізнодорожні лінії.
10. Автомобіль – це головний засіб пасажирського транспортування у нашій країні і за кордоном.

Text 17

Public Transport in Ukraine

[] _____

Ukraine's ground transportation system is very well-developed. Buses small and large **whisk passengers** along all major city streets in all possible directions. Trams and trolleybuses – the cheapest forms of transportation – **plug** slowly along their routes. None of these modes of transportation are particularly foreigner-friendly, but with a bit of study almost anyone can learn to use them. Be advised that at busy times of day all these forms of transportation can be **jam-packed, eliciting images** of India or Sub-Saharan Africa, where people even **cling** to the outside of buses. If you're not prepared for an intimate acquaintance with other passengers, better take a taxi during these times of day.

[] _____

Be aware that buses in Ukraine fall into two different categories – so-called “avtobusy” and “marshrutki”. The difference is that avtobusy, or buses, stop only at **designated, equipped bus stops** and are state-owned; marshrutki (sometimes called “minibuses”, “**shuttle buses**” or “**route-cab**”) are run by private companies and stop wherever passengers request. Marshrutki are the most popular form of public transportation in Ukraine. These minibuses come in different shapes and sizes. More and more common these days are the larger buses (usually yellow), but the smaller minivan type are also very common. The larger, taller buses

are far more comfortable for standing, which is what many passengers end up doing. Standing **half-bent** over someone else's seat can be a painful experience. So, if you are tall, look for minibuses with a high **ceiling** if it looks like you will have to stand.

[] _____

Bus schedules are not posted anywhere. Buses run with intervals of 3–30 minutes (5 –10 is most common). Main streets have multiple bus routes along them, so Ukrainians typically ask **passers by** for bus in or ask the driver as they get on the bus if it will take them to such-and-such a street. Most buses run from about 6:00 a.m. to 11:00 p.m., but certain buses may run later depending on the **demand** for a certain route (e.g. to the train station).

[] _____

In buses (the state-owned buses) all stops are automatic and do not need to be requested. In minibuses (marshrutki) you will need to call out your stop no less than 100 m away. Here are some typical phrases below: “At the bus stop!”, “Can you stop at the next stop?”, “Please stop next to the metro!”, “In front of the stop light!” “Glubochitskaya Street!”, “Stop next to the store!”, “At the bus stop!”.

[] _____

Trolleybuses and trams (“tramvayi”) stop only at designated stops. Trams run along narrow train tracks, while trolleybuses are **hooked up** to electric lines above the road, so their movements are limited. The connecting rods on trolleybuses sometimes **get dislodged**, making the driver run out and **realign** them. This happens a lot.

[] _____

Three cities in Ukraine **boast** an underground subway system – Kyiv, Kharkiv, and Dnipropetrovsk – usually referred to as the “metro”. The Kyiv metro is the most **extensive**, with three lines and over 40 stops. Kharkiv also has three lines, and Dnipropetrovsk just one. These subway systems are not nearly as **dense** as in western metropolises, but additional subway stops and new lines are slowly being built. The metro is a fast and convenient way to get around town, though it is usually **cram-packed** during **rush hours**. Trains run from approximately 5:30 a.m. to about 12:30 a.m, with just two minutes between trains at peak hours.

[] _____

Metro stops are marked by “M” signs. Most stations are underground. All metro signs are in Ukrainian (or Russian, in Kharkiv and Dnipropetrovsk). Stops are announced on Ukrainian and English languages.

Essential Vocabulary:

to whisk passengers – швидко перевозити пасажирів;

to plug slowly – повільно їхати, тягнутися;

to be jam-packed – стояти (застрягнути) у пробці;

to elicit image – виявляти копію (подібність);

to cling – чіплятися;

to be aware – знати;
designated, equipped bus stop – призначена (для автобусів), обладнана автобусна зупинка;
shuttle bus – приміський автобус;
route-cab – маршрутне таксі;
half-bent – напівзігнутий;
ceiling – стеля;
bus schedule – розклад руху автобуса;
passer-by – перехожий, проїжджий;
demand – потреба;
to be hooked up – бути причепленим;
to get dislodged – зміщуватися, спадати;
to realign – перестроювати;
to boast – вихвалитися;
extensive – просторий;
dense – густий, щільний;
cram-packed – переповнений;
rush hour – година пік;

Text Study

Exercise 1. Give title to each paragraph.

1. Public Transportation in Ukraine.
2. Ukrainian Buses.
3. Announcing Bus Stops.
4. Bus Schedules.
5. Ukrainian Trolleybuses and Trams.
6. Riding the Metro (Subway) in Ukraine.
7. Metro Signs.

Exercise 2. Answer the following questions.

1. What is the cheapest form of public transport in Ukraine?
2. When is public transport jam-packed?
3. What are the differences between bus and minibus in Ukraine?
4. What is the most popular form of public transportation in Ukraine?
5. How long do most buses run?
6. How can you call your stop in minibus or “marshrutka”?
7. In what way do trams and trolleybuses run?
8. What cities have underground subway system in our country?
9. Is metro a fast and convenient way to get around town?
10. How can people find any underground station in Ukraine?

Exercise 3. Translate into English.

1. Україна має добре розвинену наземну транспортну систему.
2. У нашому місті розклад руху автобусів є на кожній зупинці.
3. Цей автобус переповнений, почекаю іншого.
4. Зараз година пік, ми можемо застрягнути у пробці.
5. Я не хочу їхати напівзігнутим у цій переповненій маршрутці.
6. Київське метро дуже просторе, воно має три лінії.

7. Я запізнався на роботу тому, що цей тролейбус їхав повільно та ще й з'єднувальні канати спадали кілька разів.
8. Ми не знали як дістатися до центру міста, тому запитали перехожого.
9. Їхати трамваєм чи тролейбусом – найдешевше.
10. Маршрутки – найпопулярніший спосіб громадського транспорту в нашій країні.

Exercise 4. Read the text again and write down information about advantages and disadvantages of public transport in Ukraine in the table below.

Advantages of public transport	Disadvantages of public transport
1.	1.
2.	2.
3.	3.

Text 18

Paying Fare in Public Transport in Ukraine

Part 1

On trolleybuses and trams you need to be careful to buy a ticket, because ticket controllers sometimes get on and **exact fines** from **unwary passengers**. The **allotted fine** is somewhere between 25 and 50 UAH, but the controllers' behaviour can get very aggressive if you don't pay immediately, and if you're not used **to dealing with** them, it may well ruin your mood for the day. This is enough of a problem that **hotline numbers** are usually **posted** in trolleybuses and trams for 'questions concerning the actions of controllers.'

Each city has a slightly different system, but you can usually buy a ticket at ticket booths at major stops; if not, you'll need to buy one from the ticket dispatcher ('conductor') in a special green or blue **vest** or – if there is none – from the driver himself. In some cities the ticket does not need to be punched, while in others (Kiev, for example), you will need to have it punched on a special punching device on the wall. When the carriage is crowded, people pass tickets to the **hole-puncher** by saying, 'punch this please'.

Trams often have two carriages and only one conductor (who goes back and forth between the carriages).

Part 2

Passengers **pay fare** – between 5.00 and 10.00 Hryvnia upon entering the bus or minibus. In minibuses, you can take your seat first and pass your money to the driver via other passengers (you will need to tell them how many people you are paying for if it is not obvious). Fare almost never depends on the distance of your **destination**. If you wait too long to pay, the driver will **yell** at the passengers.

Sometimes you will get a little **ticket stub** back from the driver or his farecollecting assistant, but often this formality is ignored.

Part 3

To enter the metro you need to buy a **token** from the cash desk. Stations also have **token dispensers** on the wall, but they only accept old 2 Hryvnia bills and are quickly becoming useless as these bills go out of circulation.

Fare does not depend on the distance travelled or on **transfers** between lines. One token is valid for one trip, no matter how far you go and how long it takes. A token costs 8.00 UAH.

You can also buy one-month and half-month **passes** at the same windows. If you ride the metro twice each working day, it will **make** more **sense** to buy a pass; otherwise, buying separate tokens will be cheaper.

You need to put the token into the **turnstile** to enter and pass it. But make sure that you walk through the correct side of the turnstile otherwise there is the possibility that you will be hit by the metal gate! Once you enter the platform you will notice that there are usually two directions the train goes.

Essential Vocabulary:

exact fine – вимагати штраф;
unwary passenger – необережний пасажир;
allotted fine – призначений штраф;
to deal with smb. – мати справу з кимось;
to post hotline numbers – вивішувати номери гарячої лінії;
vest – жилет, одяг;
to punch – компостирувати, пробивати (отвори);
hole-puncher – компостер;
to pay fare – оплачувати плату за проїзд;
destination – місце призначення, кінцевий пункт;
ticket stub – корінець квитка;
token – жетон, талон;
token dispenser – автомат для продажу жетонів;
transfer – пересадка (на залізничній лінії);
pass – проїзний (квиток, талон);
to make sense – мати смисл;
turnstile – турнікет.

Text Study

Exercise 1. Find the correct title for each part.

The best title for

Part 1 is Metro Fare in Ukraine.

Part 2 - Paying Bus Fare.

Part 3 - Paying Fare and Avoiding Controllers.

Exercise 2. Answer the questions below.

1. What is ticket collector responsible for?
2. Where can passenger buy ticket?
3. What is a valid (дійсний) ticket in Ukraine?
4. Are there differences between paying fare in bus and tram?
5. What is a token?
6. Does public transport fare in Ukraine depend on the distance?

Exercise 3. Read the statements and decide if they are true or false.

1. You can get your ticket from the conductor once you board. ()

2. If there's no conductor, just get the ticket from the ticket collector. ()
3. Be sure to 'validate' or 'punch' your ticket using the small boxes placed inside the trolleybus or tram. ()
4. The Ukraine public transport system uses a simple tariff system regardless of distance travelled: tickets for ground transportation must be purchased each time a vehicle is boarded. ()
5. Unclipped (непробитий) tickets warrant an on-the-spot (на місці, відразу) fine, should you be caught. ()

Exercise 4. Translate into English.

1. Я завжди оплачую проїзд у транспорті. 2. Контролер вимагав штраф за проїзд, тому що я не прокомпостував квиток. 3. Якщо поведінка контролера агресивна, ми можемо зателефонувати на номер гарячої лінії, який вивіщується в кожному транспортному засобі. 4. На кожній станції метро є багато автоматів для продажу жетонів. 5. Минулого тижня я купив одномісячний проїзний квиток. 6. Шофери у маршрутках ніколи не дають пасажиром, які оплатили проїзд, корінець квитка.

Text 19

Transport Documentation.

Every mode of transport has its own specific document which remains the same **irrespective of** the method of transportation. For air transport it is the air **waybill**, referred to as the AWB, while for sea transport it is the **bill of lading** shortened frequently to the B/L. For international road freight, the **consignment note** completed by the **hauler** is the CMR note.

The bill of lading is one of the oldest documents used in international trade. Bills of lading used to be **issued** either by shipping lines or by freight **forwarders** and also by the International Federation of Freight Forwarders Association (FIATA). All Bs/L are **fairly** similar in appearance, the only difference is the name of the shipping line stated at the top. Details of the shipment appear in **the body of the document** with the space for **signatures** at the bottom. The reverse side is filled with the detailed description of the **conditions** of carriage which become important when something goes wrong.

The B/L serves to fulfill three main functions. Its first function is to act as a **receipt** of goods, as it will include full details of the number of packages at the description of the goods.

The B/L is also the contract of carriage between the shipper and the shipping line. The bill is **completed** after the ship has left the port, as only then can the shipping line complete the parts of the bill **regarding** the name of the vessel and the sailing date.

The third function of the B/L is as a **document of title**. This means that anyone who presents the B/L can take delivery of goods.

The CMR is normally completed by the hauler and available for signature by the sender when the goods are collected. The CMR will contain all the relevant information about the load and the details of the **trailer** and the carrier. The first copy of the CMR remains with the sender, the second accompanies the goods and the third is **retained** by the carrier. Upon the change of the goods, the **consignee** will be asked to sign the CMR. There

is space on the CMR for the exporter (or importer) to add any information which might assist the hauler.

The air waybill is used for all airfreight; it is completed either by the airline or the airfreight forwarder who will establish the document. Unlike the bill of lading, the air waybill is not a document of title; it acts as a consignment note. The number in the top right-hand corner is unique and is used to identify the goods at all stages of their journey as well as when they are collected by the consignee, so it is important to let your customer have the air waybill number as soon as possible.

The waybill is also used as an **accounting document** with **charges** added as the goods move through various stages of their journey.

There is one more specific export/import document, which was introduced in January 1988 and replaced many of the existing **customs forms**. It is called the Single Administrative Document (SAD) that acts as a **customs declaration**. The SAD is used throughout the European Community and, apart from language differences, all member states of the EC use the same form. The SAD is an eight-part document which **accompanies the goods** from door to door; some parts of this form are filled by the exporter, some by the freight forwarder at the time of export and other parts – by the freight forwarder handling the import.

Essential Vocabulary:

irrespective of – незалежно від;

waybill – накладна;

bill of lading – коносамент; Коносамент — [товаророзпорядчий документ](#), [цінний папір](#), який видається морським перевізником [вантажу](#) його відправнику, що засвідчує прийняття вантажу до перевезення і містить зобов'язання доставити вантаж до пункту призначення і передати його одержувачу.

consignment note – документ про відправку товарів, консигнаційна відправка товару;

hauler – перевізник;

to issue – видавати;

forwarder – експедитор;

fairly – досить, певною мірою;

the body of the document – головна частина документа;

signature – підпис;

conditions (pl.) – умови;

receipt – квитанція;

to complete – закінчувати;

regarding – відносно;

document of title – документ, який надає право власності;

trailer – причіп;

to retain – зберігати;

consignee – отримувач вантажу;

accounting document – бухгалтерський документ;

charges (pl.) – витрати;

customs declaration – митна декларація;

customs form – митна форма;

to accompany the goods – супроводжувати товар

Text Study

Exercise 1. Answer the questions:

1. What transport documents do you know?
2. What document is used for road transport (air transport, sea transport)?
3. What is the oldest document in international trade?
4. By whom is bill of lading issued?
5. How many functions does the B/L serve? Name them.
6. What can you say about the CMR?
7. What information will the CMR contain?
8. How does the air waybill act?
9. What is one more specific export/import document? When it was introduced?
10. Who uses the SAD? How does it act?

Exercise 2. Read and translate the word-combinations from the text.

Mode of transport, freight forwarder, to issue bill of lading, the body of the document, conditions of carriage, the description of the goods, the name of the vessel, sailing date, to contain all the relevant information about the load, to accompany the goods, to identify the goods, to be used throughout the European Community, delivery from door to door, to retain the document, carrier (hauler).

Exercise 3. Tell what sentences are true what are false.

1. Every mode of transport has its own specific document which remains the same irrespective of the method of transportation.
2. The bill of lading is one of the newest documents used in international trade.
3. All Bs/L are similar in appearance, the only difference is the name of the shipping line stated at the top.
4. The B/L serves to fulfill five main functions.
5. The CMR will contain all the relevant information about the load and the details of the trailer and the carrier.
6. The air waybill is a document of title; it acts as a consignment note.
7. The SAD is used throughout the USA, all states of the USA use the same form.
8. The SAD is an eight-part document which accompanies the goods from door to door.

Exercise 4. Translate into English.

1. Ви, як перевізник, повинні заповнити головну частину документа і поставити свій підпис.
2. Коносамент – один із найстаріших документів у міжнародній торгівлі.
3. Експедитор супроводжує товар до місця призначення.
4. Цей документ про відправку товарів містить всю відповідну інформацію про вантаж, причіп і перевізника.
5. Отримувач вантажу не зберіг копії цієї накладної.
6. Митна декларація використовується всіма державами членами Європейського Товариства.
7. Заповнюйте зворотню сторону документа детальним описом умов перевезення.

8. Перевізник оплатить всі витрати зазначені у бухгалтерському документі.
9. Ким видається коносамент?
10. Цей адміністративний документ замінив багато існуючих митних форм, чи не так?

Text 20

Export-Import Documentation.

The **acquisition** of overseas customers is only the first step in selling goods abroad. The job isn't complete until a **consignee** has physically received the **consignment** and the **consignor** has been paid. The final part of the **order** cycle involves completing the documentation requirements, **arranging the transport** and **ensuring the payment**.

Every exporter can recall a horror story related to problems with documentation. Of course, some problems may be unavoidable, but in too many cases it is the exporter who has been punctual enough in providing the **required documents**.

Errors in documentation cost money. The first **consequence** of a mistake is a **delay** to the consignments which may be kept in a **warehouse** under customs control. Whenever the delay occurs, storage charges will become **payable** almost immediately, and they have a tendency to rise as the delay extends.

The **storage charges** have to be paid in full. The warehouse operator will simply refuse **to release the goods** until all charges have been settled. The customs warehouses are not meant for long-term storage, that is why most customs authorities **exercise their power to seize goods** which have not been **cleared** through customs within a certain period.

The other danger of delay is the loss of **confidence** by the customer. Moreover, and delay in delivery will immediately lead to a **deferment** in settlement of the invoice, which will affect cash flow.

Documentation for export is not complicated. Many of the forms required for importing goods are the same as for exporting. These include invoices, packing lists, the certificate of origin, the CMR form, bill of lading and air waybill. The first three forms are issued by the consignor, the rest should be completed by carriers.

The basic document used both in export and import is a commercial invoice. The details that will always appear in it are the names, addresses and other information about the consignor and the consignee and a full description of the goods. Other details on the **invoice** will be the marks and numbers of the packages, the price and terms of sale. Normally, every invoice should contain a **statement** about the origin of the goods and in some cases it is compulsory **to state** the country of origin.

The other document frequently requested is a certificate of origin, which should be completed before the goods are exported. Usually certificates of origin are obtainable from **chambers of commerce**.

A packing list will detail the contents of a consignment. It contains the number and kind of packages, their contents, the **net and gross weight** (in kilograms as a rule) and the full **dimensions** and total size of each package.

Essential Vocabulary:

acquisition – придбання;

consignee – отримувач вантажу;

consignor – відправник вантажу;
consignment – вантаж, партія товару; накладна, коносамент;
order – замовлення;
to arrange the transport – організувати транспорт;
to ensure the payment – забезпечити (гарантувати) оплату;
required document – потрібний документ;
consequence – наслідок, результат;
delay – затримка;
warehouse – товарний склад;
storage charges (pl.) – витрати за зберігання;
payable – підлягати оплаті;
to release the goods – відпускати товар;
to exercise the power – користуватися владою;
to seize goods – захоплювати товар;
to clear – платити податок; звільняти від податку, розмитнювати;
confidence – довіра;
deferment – відстрочка;
settlement – урегулювання (питання);
invoice – накладна, фактура;
statement – заява, твердження; виклад;
to state – заявляти, формулювати, констатувати;
chamber of commerce – торгова палата;
net weight – чиста вага (нетто);
gross weight – вага брутто;
dimensions (pl.) – розміри, обсяг

Text Study

Exercise 1. Answer the questions:

1. What documents are required for importing and exporting goods?
2. What documents are issued by consignor?
3. What documents are issued by carrier?
4. What is a basic document used both in export and import?
5. Describe the details of commercial invoice.
6. What should every invoice contain?
7. Where can we obtain certificate of origin?
8. What does a packing list contain?
9. Name some problems related to problems with documentation?
10. When and why do customs authorities exercise their power to seize goods?

Exercise 2. Find equivalents in the text.

1. закордонні клієнти
2. відправник і отримувач вантажу
3. замовлення
4. документаційні вимоги
5. організувати транспорт
6. забезпечити (гарантувати) оплату
7. потрібний документ

8. неухильні проблеми
9. помилка
10. затримка вантажу (партії товару)
11. митний контроль
12. зберігати товар на товарному складі
13. оплачувати витрати за зберігання товару
14. довгострокове зберігання товару
15. митні органи
16. розмитнювати товар через митницю
17. втрата довіри клієнта (замовника)
18. основний документ
19. походження товару
20. зміст накладної (коносаменту)

Exercise 3. Translate into English.

1. Ми хочемо продати цю партію товару закордон.
2. Організація транспорту і забезпечення оплати – це основні вимоги клієнтів (споживачів).
3. Митні органи захопили товар через те, що він не розмитнений.
4. Комерційна накладна – основний документ, котрий використовується як і в імпорті, так і в експорті.
5. Оператор складу відмовився відпускати товар тому, що не оплатили витрати.
6. Сертифікат про походження товару отримують в торговій палаті.
7. У накладній необхідно зазначити країну походження товару.
8. Ви не вказали повний обсяг вантажу і вагу брутто у пакувальному документі (списку).
9. У багатьох випадках ми не можемо уникнути проблем пов'язаних з експортно-імпортною документацією.
10. Відправник вантажу видає такі документи як накладні, пакувальні списки, сертифікат про походження товару; а перевізник видає транспортні та авіа накладні, коносаменти.

Text 21

Customs

Customs duty is a [tariff](#) or [tax](#) on the import or export of goods. Traditionally in [England](#), it was part of the customary **revenue** of the king, and therefore did not need [parliamentary](#) permission to be taxed, unlike [excise duty](#), [land tax](#), or other **impositions**.

So Customs is an [authority](#) or [agency](#) in a [country](#) responsible for collecting customs duty and for controlling the flow of people, animals and goods, in and out of the country. Depending on local [legislation](#) and **regulations**, [exporting](#) or [importing](#) of some goods may be **restricted** or **forbidden**, and the Customs agency **enforces** these **rules**. The customs agency is different from the immigration authority. It monitors persons who leave or enter the country, checks for appropriate documentation, **apprehends people** wanted by international [search warrants](#), and **impedes** the entry of others dangerous people to the country.

The following documents should be presented to the Customs or **be enclosed with accounts** when goods are declared:

Customs declaration, filled in and complete, with customs duties and taxes calculated and entered on the form.

Bill of Lading, freight document, notice of arrival or similar document issued in connection with buying or selling the goods.

Documents of origin when customs clearance of goods from certain countries under the terms for **preferential trade** is **claimed**.

Licences, permits, etc, for goods which are **subject to** import restrictions (not all types of goods can be imported freely).

Other documents requested by the Customs in order to determine the correct customs tariffs, weight, quantity or value of the goods.

Essential Vocabulary:

revenue – дохід

excise duty – акцизний збір

tax – податок

imposition – стягнення

legislation and regulations – законодавство та правила

to restrict – обмежувати

restrictions – обмеження

to forbid – заборонити

to enforce the rules – виконувати правила

to apprehend people – затримувати людей

search warrant – ордер на розшук

to impede – перешкоджати

to enclose with accounts – додавати з рахунками

preferential trade – пільгова торгівля

to claim – заявляти

to subject to – підлягати

Text Study

Exercise 1. Choose the right variant.

1) The author defines that customs duty is the following EXCEPT:

- a) a [tariff](#) or [tax](#) on the import of goods;
- b) a tariff or tax on the import and export of goods;
- c) a tariff or tax on the export of goods;
- d) a tariff on the transportation of goods

2) In paragraph 2 the author mentions that customs is an [authority](#) or [agency](#) in a [country](#) responsible for:

- a) collecting customs duty;
- b) controlling the flow of people;
- c) transporting animals and goods;
- d) collecting customs duty and for controlling the flow of people, animals and goods, in and out of the country

3) The author mentions the following duties of customs agency EXCEPT:

- a) It monitors persons who leave or enter the country;

- b) It checks for appropriate documentation and apprehends people wanted by international [search warrants](#);
- c) It impedes the entry of others dangerous people to the country;
- d) It makes passport for travelling abroad
- 4) The author mentions all the following documents EXCEPT:
 - a) Customs declaration;
 - b) Bill of Lading;
 - c) Documents of origin;
 - d) Identity card

Exercise 2. Decide what parts of speech these words belong to and find the following words using the glossary:

customs, tariff, tax, goods, arrival, document, restriction, warrant, to impede, duty

Exercise 3. Match the synonyms:

1) tariff	a) to guarantee
2) document	b) due
3) arrival	c) obligation
4) restriction	d) property
5) to warrant	e) rate
6) customs	f) limitation
7) goods	g) coming
8) to impede	h) paper
9) tax	i) to hinder
10) duty	j) custom-house

Exercise 4. Look through the text again, fill in the gaps in the following sentences with the appropriate word from the text and put them in the correct order:

1. The agency _____ people wanted by international [search warrants](#), and _____ the entry of others dangerous people to the country.
2. It is responsible for _____ customs duty and for _____ the flow of people, animals and goods, in and out of the country.
3. Custom duty was a _____ of the customary revenue of the king.
4. The customs agency is different from the _____ authority.
5. Other documents may be _____ by the Customs in order to determine the correct customs tariffs, weight, quantity or value of the goods.
6. Customs declaration should be _____, filled in and complete, with customs duties and taxes calculated and entered on the form.

Exercise 5. Complete the sentences using the following verbs in the correct tense: be, carry out, go up, change, ask, issue, wait.

1. He ___ already ___ his official duties as ambassador.
2. Taxes on alcohol and cigarettes ___ just ___ again.
3. There _____ no restriction on how many tickets you can buy lately.
4. A government officer ___ already ___ a warrant for his arrest.
5. The arrival of the personal computer _____ the way we work recently.

6. We _____ on the road since 7:00 a.m.
7. We _____ the visitors to arrive at different times, to avoid a jam today.

Exercise 6. Make up sentences from the following notes using the correct tense:

1. We/sell/components/to the private sector/before (never).
2. You/have/any/experience/in electronics industry (ever)?
3. He/write/series of articles on/the transport industry (just).
4. There/be/any consumer demand in/electrically driven vehicles (never).
5. Many companies/show/interest in/this market (already).
6. Davis/tell/them/about their plans (yet)?

GLOSSARY

A

accident	a situation in which someone is hurt or something is damaged without anyone intending it to happen
air	the mixture of gases which we breathe and which surrounds the Earth
airbag	a bag in a car that fills with air to protect people in an accident
air conditioner	a machine that makes the air in a room, car etc stay cool
airliner	a large plane for passengers
alternative	something you can choose to do or use instead of something else
arrival	when you arrive somewhere
arterial	a main road, railway line, or river
automobile	a vehicle with four wheels and an engine, designed to be used by a small number of people

B

bargain (v)	to discuss the conditions of a sale, agreement etc.
barge	a long narrow boat with a flat bottom, used to

	carry goods
belt	a circular band of material such as rubber that moves parts of a machine
boat	something that you sail in to travel across water
brake	the part of a vehicle that makes it go more slowly or stop
bridge	a structure built over a river, road etc. so that people or vehicles can cross it
bumper	the part across the front and back of a car that protects it if it hits anything
bus	a large vehicle that people pay to travel on
C	
caravan	a covered vehicle that is pulled by a horse and that some people live and travel in
cargo	the goods being carried in a ship, plane etc.
carrier	a person, vehicle, or machine that moves goods or passengers from one place to another
carry (v)	to hold someone or something in your hands or on your back and take them from one place to another
cart	a vehicle with two or four wheels, that is pulled
civil	relating to the people or things in a country that are not part of military or religious organizations
combustion	the process of burning
competitive	a competitive situation is one in which people or organizations try to be more successful than others
congested	full or blocked, for example because there are too many vehicles or people
crash	a bad accident involving cars, planes etc.
crossing	a place where two roads, lines etc. cross
customs	the place where your bags are checked for illegal goods when you go into a country
D	
dashboard	the part at the front of a car that has the controls on it
demand	if there is a demand for something, people want to buy it
density	how many people or things there are in an area, in relation to its size
destination	the place that someone or something is going to
diesel	a type of oil used in the engines of some vehicles
document	a piece of paper that has official information

drag (v)	written on it to pull someone or something heavy along the ground
drive (v)	to control a vehicle and make it move
driver	someone who drives
duty	something that you have to do because it is right or it is part of your job
E	
economics	the study of the way in which money, goods, and services are produced and used
engine	the part of a car, plane etc. that makes it move by producing power from oil, steam, or electricity
engineering	the work of designing the way roads, bridges, machines etc. are built
equilibrium	a balance between opposing forces, influences etc.
equipment	the things that are used for a particular activity
estimation	your judgement or opinion about someone or something
exhaust	the waste gas that is produced when an engine is working
F	
facility	a service or feature that a machine or system has
fare	the price you pay to travel by train, plane, bus etc.
fasten (v)	to join together the two sides of something so that it is closed, or to become joined together
flight	a journey in a plane, or the plane making a particular journey
fly (v)	to travel somewhere by plane
freight	goods carried by road, trains, planes, or ships
frontier	the border of a country
fuel	a substance such as coal, gas, or oil, which can be burned to produce heat or power
fumes	strong-smelling gas or smoke, which is unpleasant to breathe in
G	
gasoline	a liquid made from petroleum, used for producing power in car engines
gears	the equipment in a car or other vehicle that turns power from the engine into movement
goods	things that are produced in order to be sold

H

haul (v)
highway

to pull something heavy or to pull hard
a wide main road that joins one city to another

I

impede (v)
to make progress
industry

to make it difficult for someone or something

the production of goods, especially in factories

inland
install (v)

an inland area, city etc. is not near the coast
to put a piece of equipment somewhere and connect it so that it is ready to be used
a place where two roads, lines etc meet, especially where they cross each other it

intersection

J

jam

a situation in which it is difficult to move because there are too many people, cars etc.
a very fast plane

jet

L

land

an area of ground, especially when it is used for buildings or farming

launch (v)

to make a new product or book available to be sold

license (v)

to give official permission for someone to do something

lights

one of a set of red, green, and yellow lights that are used to control traffic

load

a quantity of something that is carried by a vehicle, person etc.

M

Manufacture (v)

to make large quantities of goods, using machines

maritime

connected with the sea or ships

motorway

a wide main road that joins one city to another

movement

a change in the place or position of something or someone

N

navigation

when you decide which direction to go in or which road to take when you are travelling somewhere

net

a type of material made of pieces of string, wire etc. which are joined together with spaces between them

noise

a sound, that is too loud, annoying, or not intended

O

overcrowded

filled with too many people

P

parking

space where you can leave your car

passenger

someone who is travelling in a car, plane, boat etc., but is not driving

pavement

the path you walk on at the side of a road

pedestrian

someone who is walking in the streets,

rather than driving a car or riding a bicycle

perishable

food that is perishable can become bad quickly

pipeline

pipes used for carrying gas, oil etc. over long distances

pole

a long piece of wood or metal

pollution

damage caused to the environment by harmful chemicals and waste

population

all of the people who live in an area, or all the people of a particular type

public

all the ordinary people in a country or place

purchase

when someone buys something

R

raft

a flat floating structure made from long pieces of wood tied together

rail

one of the two long metal tracks that trains move along

railroad

a track for trains to travel along

railway

a track for trains to travel along

ramp-meter

a device, usually a basic [traffic light](#) that regulates traffic entering [freeways](#) according to current traffic conditions

reduce (v)

to make something become less in size, amount, price etc.

regressive

becoming or making something less advanced

repair

something you do to fix something that is broken or damaged

restriction

a rule or law that limits what you are allowed to do

ride (v)

to sit on and control the movement of a horse, or bicycle

road

a specially prepared hard surface for vehicles to travel on large vehicle that people pay to travel on

route

the way from one place to another

rule

an instruction that says how something

should be done or what is allowed

S

safety

how safe someone or something is

sail (v)

to travel across water in a boat or ship

schedule

a list that shows the times that buses, trains etc. leave or arrive

sea

a large area of salty water

service

a business that provides help or does jobs for people, rather than producing things

signal

a piece of equipment that tells a train driver whether to go or stop

spacecraft

a vehicle that can travel to space

speed

how fast something moves or travels

station

a building where trains or buses stop so that passengers can get on and off, or where they begin or end their journey

steam

the gas that water produces when it is boiled

steamship

a ship that uses steam power

steering

the parts of a vehicle used for controlling its direction

street

a road in a town or city with houses, shops etc. on one or both sides

strip

a long narrow area of land or water

subway

a railway that runs under the ground

system

an organized way of doing something

T

tail-light

one of the two red lights at the back of a car

tariff

a tax on goods that are brought into a country

tax

money that you have to pay to the government from your wages, when you buy something etc.

terminal

a building where you get onto planes, buses, or ships

timetable

a list of the times of buses, trains etc.

tire

a thick round piece of rubber filled with air, that fits around the wheel of a car, bicycle etc.

tow (v)

to pull a vehicle or ship

track

a narrow road or path with a rough surface

traffic

the vehicles travelling on a road

transport

a kind of vehicle, or a system of buses, trains etc. that you use for going from one place to another

travel

the activity of travelling

trip

a journey in which you go to a place for a

truck	short time and come back a large road vehicle used for carrying heavy loads
tug boat	a boat used for pulling ships
V	
van	a vehicle used for carrying goods which is covered and has metal sides, and is smaller than a truck
vehicle	a thing such as a car or bus that is used for carrying people or things from one place to another
vessel	a ship or large boat
voyage	a long trip, especially in a ship or space vehicle
W	
wagon	a strong vehicle with four wheels, especially pulled by horses
warrant	an official document that allows the police to search inside someone's house, arrest someone etc.
water	the clear liquid in rivers, seas, rain etc.
weight	the amount that someone or something weighs
wheel	one of the round things under a car, bicycle etc. that turns on the surface of the ground when it moves
wheelchair	a chair with wheels, used by people who cannot walk
windscreen wiper	a long piece of metal with rubber on it that moves across a car windscreen to remove the rain

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