

**НАВЧАЛЬНО-НАУКОВИЙ ЦЕНТР ГУМАНІТАРНОЇ ОСВІТИ**

**Кафедра іноземних мов**

**ОРГАНІЗАЦІЯ ПЕРЕВЕЗЕНЬ  
ТА УПРАВЛІННЯ НА ТРАНСПОРТІ**

**МЕТОДИЧНІ ВКАЗІВКИ**

**з розвитку навичок читання та комунікативної компетенції  
для студентів 2 курсу факультету УПП**

**(англійська мова)**

**Харків – 2014**

Методичні вказівки розглянуто та рекомендовано до друку на засіданні кафедри іноземних мов 26 лютого 2013 року, протокол № 7.

Видання підготовлено відповідно до програми навчальної дисципліни і є складовою частиною навчально-методичного комплексу дисципліни «Англійська мова».

Основна мета методичних вказівок – подальший розвиток усного мовлення, систематизація та розширення словникового запасу за темою «Організація перевезень та управління на транспорті» та подальший розвиток усного спілкування. Вправи націлені на засвоєння лексичного матеріалу, набуття міцних навичок у всіх видах мовної діяльності.

Методичні вказівки призначені для студентів 2 курсу факультету ОПУТ.

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## UNIT ONE

**Copy the following words and memorize their meanings:**

an iron-core coil – котушка з сердечником;  
an oscillating circuit – генераторна схема;  
a pilot lamp – контрольна лампа;  
armature – арматура, броня (кабелю);  
a valve – клапан;  
a monitoring valve (signal) – контрольний клапан (сигнал);  
to activate – приводити в дію;  
to withdraw energy – забирати енергію;  
inductive train control – система автоматичного керування гальмом;  
to resonate – резонувати;  
a driving motor – тяговий електродвигун;  
short-circuited – короткозамкнений;  
to tune – налаштовувати, регулювати,  
in tune – точно;  
to interrupt – перервати;  
to fail – переставати діяти, виходити з ладу;  
a failure – псування, відмовлення в роботі, помилка;  
to attract – приваблювати;  
to release – звільняти, розблокувати.

**Read and translate the text using a dictionary if necessary.**

Scientific methods of engineering are applied in several fields not connected directly to manufacture and construction. Modern engineering is characterized by the broad application of what is known as systems engineering principles. The systems approach is a methodology of decision-making in design, operation, or construction that adopts (1) the formal process included in what is known as the scientific method; (2) an interdisciplinary, or team, approach, using specialists from not only the various engineering disciplines, but from legal, social, aesthetic, and behavioral fields as well; (3) a formal sequence of procedure employing the principles of operations research.

In effect, therefore, transportation engineering in its broadest sense includes not only design of the transportation system and building of its lines and rolling stock, but also determination of the traffic requirements of the route followed. It is also concerned with setting up efficient and safe schedules, and the interaction of the system with the community and the environment. Engineers in industry work not only with machines but also with people, to determine, for example, how machines can be operated most efficiently by the workers. A small change in the location of the controls of a machine or of its position with relation to other machines or equipment, or a change in the muscular movements of the operator, often results in greatly increased production. This type of engineering work is called time-study engineering.

## **INDUCTIVE CONTROL SYSTEM**

For use on busy lines various safety devices are additionally available. One of these is the inductive train control. Each signal on a section of the line equipped with this system has a device which activates the brakes of a passing train. The locomotive is provided with a "transmitter" which has an iron-core coil and a condenser.

This oscillating circuit is tuned to 2000 cycles/sec. and is supplied with current from a high-frequency generator to which the coil of an electromagnet for a relay is connected. The high-frequency generator is driven by an electric motor or a small steam turbine which also drives a 24-volt direct-current dynamo. A second relay and two pilot lamps are connected to this dynamo. When the system is in operation, the high-frequency generator supplies current to the oscillating circuit of the locomotive and to the high-frequency relay, so that the armature of the latter is attracted by the electromagnet and allows current to flow through the 24-volt direct-current relay. When thus energized, the relay interrupts a flow of current to the actuating electromagnet of a valve. The signal beside the railway track is also equipped with an oscillating circuit tuned to 2000 cycles/sec. When the signal is at "safe", its oscillating circuit is short-circuited and has no effect on the passing locomotive.

However, if the signal is at "stop" and the train nevertheless fails to stop, the oscillating circuit of the signal will resonate in tune with

that of the passing locomotive and withdraw so much energy from the latter circuit that the armature of the high-frequency relay is no longer sufficiently strongly attracted by the electromagnet and is therefore released. This in turn cuts off supply of current to the 24-volt relay, which then likewise (так же) releases its armature. This completes the electric circuit to the electro-magnet that controls the monitoring valve. When this happens, the monitoring valve causes the brakes to be applied and the driving motor of the locomotive to be switched.

Based on the applications, the Rail Administration shall establish a draft working timetable for the next timetable period no later than four months after the deadline for the submission of applications for capacity. The draft working timetable may contain information on the capacity that the Rail Administration proposes to allocate to an applicant only to such an extent and with such restrictions as is necessary for implementing traffic control for the use of this capacity. The draft working timetable shall primarily be based on supposition that the requested capacity will be allocated, provided that the different train paths enable railway traffic to be operated in accordance with the technical and safety regulations. In order to improve the allocation of capacity, the Rail Administration may, however, offer applicants capacity that does not essentially differ from the capacity they have requested. It is also possible not to allocate capacity, provided that reserve capacity is needed for the timetable period as a result of the priority order applied to railway traffic. The Rail Administration shall send the draft working timetable to applicants for information within the period of time referred to in subsection 1 and give them the opportunity to comment. Comments shall be presented within 30 days after receipt of the draft working timetable. Customers purchasing freight transport services and associations representing those who purchase rail transport services are entitled to present comments on the draft working timetable within 30 days, counted from the date on which the Rail Administration publishes an announcement in its collection of regulations that the draft working timetable has been established.

**Ex.1. Copy the following words. One word in line doesn't belong to the group. Cross out the odd word and explain your choice.**

- 1) a train, a plane, an automobile, a rail car.
- 2) steam, diesel, electric, air.
- 3) a second, an hour, a mile, a minute.
- 4) current, voltage, time, resistance.
- 5) relay, transistor, diode, photo.
- 6) turbine, motor, generator, electron.
- 7) a railway, a highway, a runway, a road.

**Ex. 2. Answer the following questions to the text.**

- 1 Where are the scientific methods of engineering applied?
- 2 What does transportation engineering in the broadest sense include?
- 3 What is the signal beside the railway track equipped with?
- 4 What do we need a timetable for ?
- 5 What happens if a train fails to stop ?
- 6 What does the Rail Administration do?
- 7 What is important for timetable?
- 8 What kind of device is the line equipped with?
- 9 What does a "transmitter" have?
- 10 What is the high-frequency generator driven by?

**Ex. 3. Complete the sentences:**

- 1 ..... are additionally available.
- 2 The locomotive is provided with a ..... and a condenser.
- 3 The high-frequency generator is ...which also drives a .....dynamo.
- 4 When thus energized, the relay ..... of a valve.
- 5 This in turn cuts off supply of current ..... which then likewise releases its armature.
- 6 The draft working timetable shall ..... that the requested capacity will be allocated, provided that the ..... railway traffic to be operated in accordance with the .....



**Ex. 4. Translate the words and phrases given in the below into English:**

контрольний клапан (сигнал); відмовлення в роботі, помилка; генераторна схема; виходити з ладу; система автоматичного керування гальмом; точкова автоматична локомотивна сигналізація; устаткувати рейковими ланцюгами; єдиний центр керування; арматура, броня (кабелю); котушка з сердечником.

**GRAMMAR REVIEW**

**Ex.1. TEST. Choose the right variant.**

- 1) Passengers \_\_\_\_\_ come to the airport an hour before the take-off time.  
a) are allowed to b) must c) will not able to d) needn't
- 2) We usually go to the south by plane but tomorrow we \_\_\_\_\_ travel there by train as we didn't make a reservation for the flight.  
a) shall be allowed to b) needn't c) shall have to d) should
- 3) You \_\_\_\_\_ phone me again, I never forget my promise.  
a) need not b) must not c) can not d) are not allowed
- 4) I \_\_\_\_\_ take a bus because Martin gave me a lift.  
a) did not have to b) am not able to c) was allowed to d) was to
- 5) When the new road is built, I \_\_\_\_\_ drive to work in under half an hour. Now I \_\_\_\_\_ spend much more time.  
a) are able to b) shall be able to c) shall be allowed to d) could
- 6) The pilot \_\_\_\_\_ land the plane on only one engine.  
a) needn't b) was able to c) should d) were allowed to
- 7) Airline passengers \_\_\_\_\_ use mobile telephones during the flight.  
a) are able to b) are not allowed to c) were to d) needn't
- 8) Stay here till she is free. I think you \_\_\_\_\_ wait long.  
a) need not b) will not have to c) are not allowed to d) shouldn't
- 9) According to the rules a football player \_\_\_\_\_ touch the ball with his hands.  
a) is able to b) has to c) must not d) will be allowed to
- 10) Luckily I \_\_\_\_\_ find a taxi.  
a) have to b) could c) was to d) shall not be allowed
- 11) You \_\_\_\_\_ shout, I am not deaf.  
a) need not b) will not be able to c) are not allowed to d) can

- 12) The speed in cities \_\_\_\_\_ exceed 60 km per hour.  
 a) shouldn't b) is to c) need not d) will be allowed to
- 13) It is a non-smoking carriage. You \_\_\_\_\_ smoke here.  
 a) must not b) should c) need not d) are allowed to
- 14) You \_\_\_\_\_ carry your driving license with you.  
 a) should b) are not allowed to c) will not be able to d) was to
- 15) You \_\_\_\_\_ answer the question if you don't want to.  
 a) have to b) need not c) may d) will be able to

**Ex.2. Past Indefinite, Past Continuous or Past Perfect? Put the verbs into the correct tense forms.**

- 1) The police officer [to ask] me what I [to do] at the time when the accident took place.
- 2) They spoke so quickly that I didn't understand what they [to talk] about.
- 3) While we [to wait] for the train, it [to start] to rain.
- 4) We knew that the 2 o'clock train [to leave] already and decided to go by bus.
- 5) Before I came to the office the manager already [to sign] the documents.
- 6) Where... you [to be] at about three yesterday afternoon? – Oh, I [to repair] my car at that time.
- 7) I [to see] you from the bus yesterday. Where ... you [to hurry] at that time?
- 8) The journey from Paris to London [to take] much longer before the Channel Tunnel was built.
- 9) I didn't convince the inspector that I [to lose] my ticket only some moments before.
- 10) The station master [to say] that no trains [to arrive] at the station during the night because of the heavy snowstorm in the mountains.
- 11) They [to work out] a detailed plan before starting off on an expedition.
- 12) Mary [to clean] the windscreen when she noticed a crack in the glass.
- 13) Some people [to sleep] on the benches waiting for their trains.
- 14) Yesterday he [to pass] his driving test at the first attempt.

**Ex. 3. Choose the required voice form of the predicates (Active or Passive).**

- 1) A new device [has tested; has been tested] in the lab.
- 2) The dining car was crowded but we [served; were served] rather fast.
- 3) A taxi [called; was called] 15 minutes ago; so we [are expecting; are being expected] it any moment.
- 4) At the corner of the street we [saw; were seen] a car. The driver [was examining; was being examined] the engine.
- 5) The road is closed because the road-works [are conducting; are being conducted].
- 6) Powerful track-laying machines [have developed; have been developed] for the building of railroads.
- 7) The European Bank for Reconstruction and Development [has made; has been made] a loan of \$US 120 to the Ukranian Ministry of Railways for the railway rehabilitation project.
- 8) David thought that his father [had repaired; had been repaired] his bicycle.
- 9) A new railway underground line [is constructing; is being constructed] in our city. One of the Metro stations [will build; will be built] near my house.
- 10) He [broke; was broken] my watch.
- 11) The manager [has offered; has been offered] me several jobs.
- 12) I [will give; will be given] a leave in July if there is no urgent work.
- 13) It was noisy. Nobody [was listening; was being listened] to him.
- 14) Bill [kept; was kept] his word and arrived exactly at the time he [had promised; had been promised].
- 15) You can't watch the film now; the TV set [is fixing; is being fixed] by the

**Ex.4. Translate the following sentences, paying attention to different tense forms and voice of the predicates.**

- 1) Після реконструкції лінії швидкість потягів буде збільшена.
- 2) Ти звичайно купуєш квитки раніш, ніж збираєшся вирушати у подорож, або в той самий день?—Це залежить від обставин (circumstances).
- 3) Коли вирушає потяг у Бостон? —Один потяг щойно пішов, а наступний буде за дві години.
- 4) Потяг проходить відстань від Києва до Сімферополя за 18 годин.
- 5) Ви не можете зараз узяти магнітофон, тому що він зламався та його ремонтують.
- 6) Провідник вийшов з вагона й запросив пасажирів зайняти свої місця.
- 7) Коли ми прийшли на станцію, всі квитки були вже продані.
- 8) Автомобілі повільно рухалися вгору.
- 9) Головний інженер сказав, що про наш проект багато говорили та наприкінці (eventually), він був прийнятий.
- 10) Паровий двигун був зроблений у 18 столітті.

## **UNIT TWO**

**Copy the following words and memorize their meaning:**

level crossing protection system – огороження переїзду світлофорами;  
a modular design – модульне проектування;  
trial operation – дослідна експлуатація;  
track layout – схема колії;  
a flashing light – миготливе світло;  
remote – дистанційний, віддалений;  
a controller – оператор;  
a LED display – світлодіодний індикатор;  
GSM – глобальна система мобільного зв'язку (стандарт стільникового зв'язку у Європі);  
a barrier – шлагбаум,  
a barrier drive – привод шлагбауму,

a barrier arm – балка шлагбауму;  
to integrate – бути невід’ємною частиною;  
the authorities – керівництво;  
simultaneous(ly) – одночасний (но); синхронний (но);  
to evaluate – визначати, зацінювати,  
(an) evaluation – визначення, оцінка.

**Read and translate the text using a dictionary if necessary.**

## **FAIL-SAFE PROTECTION SYSTEM**

The Julian calendar recorded the year 2001 — the beginning of the 21st century. It was far more than a chronological event, for the meaning and importance of chronological time is less vital now than ever before in history. Time began for man more than a million years ago and until today it has been the mover and shaker of man's destiny. However, the slow pace of nature has been augmented by the incredible speed of the developing technology since the last third of the 20th century. The technological innovations are revolutionizing our lives more than anything else. Events, inventions, moralities - all slide and change so swiftly that we seem to be rushing at tomorrow and our future has already arrived. In that sense the 21st century is already here, for the responsibility for the events and technology that will be produced is being formed today.

The Siemens BUE 95F fail-safe level crossing protection system, characterized by a modular design and low maintenance requirements and designed for use on main and urban railways, was approved for trial operation by the Swiss federal office for transport in 1999 and approved by the German federal railways authorities in January 2001. BUE 95F is scaleable and can be configured for single or double-track lines, and multiple-track layouts in station areas. It has a main signaling interface to the interlocking and up to eight monitoring signals. It can have up to 16 road signals or flashing lights, up to 8 barrier drives, audible alarms<sup>1</sup>, and a manual switching device.

The system's electronic controller consists of components of the dual-channel Simatic S5 AG95F automation system, which is designed to provide safe operation. Two central processing units (CPU) are connected by fibre optic cables. They operate using the same program,

simultaneously executing identical functions and continuously monitoring each other.

A three-stage diagnostic system is integrated into BUE 95F. At the first, basic level, it can display failures on LED displays. These guarantee fast on-site diagnosis while evaluation of the other status indications.

A three-stage diagnostic system road signal, monitoring signal, barrier, contact, communication, power supply, etc.

A dynamic memory is integrated for more extensive diagnosis. About 512 event indications are stored in this memory. Every activity and every irregularity of the system is recorded with date and time. Evaluation is possible via an interface using a service PC.

At the third configuration level, the diagnostic system also provides for remote diagnosis. Data is transmitted by GSM into a control centre via a modem. Up to 30 level crossing protection systems can be combined here. Maintenance staff can also use remote diagnosis to query the status of any individual crossing protection system.

Robust mechanical systems ensure high reliability. The elevated drive protects it from snowdrifts and flooding, and it remains fully operable in storms and extremely high winds. The drive is suitable for barrier arms up to 13m in length.

Several hundred systems are now in operation in Switzerland, Denmark, Greece, Egypt, China, and Germany.

**Note: 1) an alarm – a warning signal.**

**Ex. 1. Search the text for the English equivalents of the following Ukrainian phrases:**

Надійна система захисту, був схвалений для проведення випробування, двоканальна автоматична система, два центральних процесори, оптико-волоконний кабель, одночасно виконуючи ідентичні функції, швидке виявлення помилок, визначення становища, для найбільшого всебічного визначення, виявлення помилок, порушення роботи системи, рівень структури, обслуговуючий персонал, для запиту інформації, механічна система яка потребує витрат сили та енергії, повністю діюча.

**Ex. 2. Answer the following questions to the text.**

- 1 What is the Siemens BUE 95F?
- 2 What does the system's electronic controller consist of?
- 3 How many stages does the diagnostic system have? And what kind of stages?
- 4 What is a dynamic memory?
- 5 What changes were at the last third of the 20th century in the developing technology?
- 6 What protects robust mechanical systems from snowdrifts and flooding?
- 7 What is an alarm?
- 8 How many event indications are stored in the memory?
- 9 What was at the beginning of the 21st century in the developing technology?
- 10 What can maintenance staff use?

**Ex. 3. Complete the sentences:**

- 1 The system's electronic controller consists .....channel Simatic S5 AG95F automation system, which is designed to provide .....
- 2 ..... signaling interface to the interlocking and up to eight monitoring signals.
- 3 ..... configuration level, the diagnostic system also provides for remote diagnosis.
- 4 The elevated drive protects it from ....., and it remains ..... and extremely high winds.
- 5 The drive is .....
- 6 ....., basic level, it can display failures on LED displays.
- 7 They operate ....., simultaneously executing identical functions and .....
- 8 Maintenance staff ..... to query the status of any individual crossing protection system.
- 9 ..... is possible via an interface using a service PC.
- 10 Several hundred systems are now in operation in .....

**Ex. 4. Give a short summary of the text. The following phrases may be helpful:**

The headline of the text (article) is ... – Текст (стаття) називається ...

The article deals with ... - Стаття розглядає (проблеми)...

The point of the article is that ... - Суть статті у тому, що ...

The article pays special attention to ... - Стаття звертає особливу увагу на...

Of great (special) interest is (that) ... - Особливий інтерес в тому, що ...

My opinion is ... - Я вважаю ...

I doubt that ... - Я маю сумнів що ...

It's common knowledge that... - Загальновідомо, що ...

I might as well add that ... - Я можу також додати, що ...

Needless to say that ... - Немає потреби казати, що ...

There are many pros and cons here. – Тут багато за і проти.

On the one hand ... - З одного боку, ...

On the other hand ... - З іншого боку, ...

I'm sure that ... - Я впевнений, що ...

In conclusion I'd like to ... - У висновку я хотів би ...

## **GRAMMAR REVIEW**

**Ex.1. Analyze the functions of Participles I in the following phrases and complete the sentences.**

▪ 1) (When) discussing the project...; 2) Scientists discussing the project...; 3) The scientists were discussing the project...; 4) Having discussed the project...

▪ 1) Having repaired the engine...; 2) The mechanic repairing engines...; 3) (While) repairing the engine...; 4) The mechanic is repairing...

▪ 1) The workers constructing the railway...; 2) Constructing the railway...; 3) Having constructed the railway...; 4) The workers will be constructing...

▪ 1) Installing the new equipment...; 2) Having installed the new equipment...; 3) He is installing... . 4) The firm installing this equipment...



- 1) (While) carrying out the experiment...; 2) The scientists carrying out the experiment... . 3) The scientists are carrying out... . 4) Having carried out the experiment....

**Ex.2. Say whether the right Participles are used in the following sentences. Correct the wrong ones. Be very attentive!**

- 1) We were walked down the path leading to the station.
- 2) Don't forget to oil the moving parts of the machine regularly.
- 3) Having missed the 10 o'clock train, he had to send a telegram to his friends waited for him.
- 4) The porter went in, carrying two suitcases.
- 5) It is impossible quickly to stop the train moving at such a high speed.
- 6) Worked as a clerk, painter and bus driver, Neil decided to go back to University.
- 7) Refrigerator cars are used for the transportation of freezing meat and other perishable commodities.
- 8) The received information was not correct.
- 9) When commenting on the recent developments in the Middle East, the correspondent presented a number of interesting facts.
- 10) Tank cars having transported gas or cement should be made of aluminum or stainless steel.
- 11) All the computers installed at our office were produced in Japan.
- 12) The Toyota Co. has recently deciding to spend \$800 million a year on the development of the new electric automobile.
- 13) While crossed the street, I saw an accident.
- 14) When typing the article, she tried to be very attentive.
- 15) The plane had to make a forcing landing.
- 16) The Internet is a global computer network having millions of users all over the world.
- 17) They experimented with the device, not known that it was out of order.
- 18) Having taken the wrong bus, Tony found himself in an unfamiliar town.

**Ex.3. Translate the following sentences paying attention to the verb + gerund constructions.**

- 1) They kept on talking though the band began playing.
- 2) I avoided speaking to them about that matter.
- 3) Try to avoid drinking unboiled water.
- 4) I can't insist on your staying a little longer because you risk missing the last train.
- 5) I can't help thinking of it.
- 6) Would you mind my leaving for a few minutes?
- 7) Would you mind my joining the discussion?
- 8) Who is responsible in your company for taking the most serious decisions during the talks?
- 9) Have you ever dreamed of earning a million dollars?
- 10) I'd like to thank you all for coming here today.
- 11) You should stop promising things you are unable to do.
- 12) He decided against calling her again.
- 13) I suggest holding another meeting next week.
- 14) I didn't remember meeting her before but I pretended I knew her.
- 15) Why did they postpone discussing this project for an indefinite time?
- 16) She likes giving advice to other people.
- 17) Why does he object to signing the contract with this firm?
- 18) A heavy rain prevented the fire from spreading.
- 19) I can't help being grateful to him for all he has done for me.
- 20) I live only a short way from here, so it is not worth taking a taxi to get home.
- 21) I don't mind going by bus but I hate standing if there are a lot of people; it is better to go by Metro.

**Ex.4. Fill in the gaps with the prepositions and gerunds formed from the verbs given in the box.**

to answer; to change; to finish; to fly; to go; to help; to install; to lose; to make; to pass; to pay; to see ;to show; to take part; to take up; to test; to think
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- 1) She has been dreaming \_\_\_\_\_ to the Bahamas.
- 2) I insist \_\_\_\_\_ your \_\_\_\_\_ the new automobile to us.
- 3) She decided \_\_\_\_\_ in the conference.
- 4) We thanked the porter \_\_\_\_\_ his \_\_\_\_\_ us with our luggage.
- 5) Weather conditions prevented them \_\_\_\_\_ their work on time.
- 6) The constructor insists \_\_\_\_\_ our \_\_\_\_\_ the device under operating conditions.
- 7) I don't usually carry my passport with me because I'm afraid \_\_\_\_\_ it.
- 8) Excuse me \_\_\_\_\_ not \_\_\_\_\_ your letter.
- 9) I haven't heard \_\_\_\_\_ the schedule of this commuter train.
- 10) Everybody congratulated her \_\_\_\_\_ the exam so well.
- 11) The noise in the next room prevented me \_\_\_\_\_.
- 12) I'm thinking \_\_\_\_\_ another trip to Italy.
- 13) We are looking \_\_\_\_\_ new computers in our office.
- 14) The rain prevented him \_\_\_\_\_ to the country.
- 15) Excuse me \_\_\_\_\_ so much of your time.
- 16) He finished the letter with the words "I am looking \_\_\_\_\_ you in Moscow next summer".
- 17) He insisted \_\_\_\_\_ for the meal.

**Ex.5. Choose the correct verb and translate the sentences.**

- 1) All the students [enjoyed; began; looked forward to] working harder in the weeks before the examinations.
- 2) She [avoids; forgets; dreams of] expressing her opinion in public.
- 3) She [prevented from; excused for; couldn't help] laughing at his jokes.
- 4) Do you [go on; mind; postpone] my airing the room?
- 5) She [risks; is ready for; postpones] losing everything if she follows his advice.
- 6) We [began; suggested; stopped] buying food in this shop because the owner raised the prices.
- 7) [Stop; go on; avoid] shouting! I hear you quite well.
- 8) I [remember; insist on; risk] leaving a map of Rome in the pocket.
- 9) He [liked; thanked for; disliked] his daughter chatting on the phone for hours.

- 10) I can't see why the machine [stopped; put off; decided against] working.
- 11) He [objected to; prevented from; couldn't help] warning them about danger.
- 12) I don't [suggest; like; mind] your smoking here.
- 13) You should [continue; enjoy; stop] drinking so much coffee.
- 14) In spite of the difficulties he [kept on; insisted on; objected on] carrying out his experiments.
- 15) The machine [needs; suggests; can't help] cleaning.

### **UNIT THREE**

**Copy the following words and memorize their meanings:**

- a colour light signal, a traffic light – світлофор;  
a point – стрічкове переведення;  
a circuit – ланцюг, коло;  
short-circuit – коротке замикання;  
a track-circuit – рейковий ланцюг;  
to track-circuit – устаткувати рейковими ланцюгами;  
a trunk line, a main line – магістраль;  
a control console – пульт керування;  
a single control center – єдиний центр керування;  
a track diagram – схема колії;  
a switch – перемикач;  
a push-button switch – кнопковий перемикач;  
a delay – затримка;  
to delay – затримувати;  
an approach – підхід;  
to approach – приближуватися, підходити;  
to avoid – уникати;  
entire – цілий, увесь;  
conventional – стандартний, типовий; звичайний, традиційний.

**Read and translate the text using a dictionary if necessary.**

## **BASIC PRINCIPLES OF RAILWAY SIGNALLING**

Just as important as advances in manufacturing technology was a wave of changes in how business was structured and work was organized. Beginning with the large railroad companies, business leaders learned how to operate and coordinate many different economic activities across broad geographic areas.

**Communication and control.** Engineers in this field are concerned with all aspects of electrical communications, from fundamental questions such as “What is information?” to the highly practical, such as design of telephone systems. In designing communication systems, engineers rely heavily on various branches of advanced mathematics, such as Fourier analysis, linear systems theory, linear algebra, complex variables, differential equations, and probability theory.

Engineers work on control systems ranging from the everyday, passenger-actuated, as those that run an elevator, to the exotic, as systems for keeping spacecraft on course. Control systems are used extensively in aircraft and ships, in military fire-control systems, in power transmission and distribution, in automated manufacturing, and in robotics.

Engineers have been working to bring about two revolutionary changes in the field of communications and control: Digital systems are replacing analog ones at the same time that fiber optics are superseding copper cables. Digital systems offer far greater immunity to electrical noise. Fiber optics are likewise immune to interference; they also have tremendous carrying capacity, and are extremely light and inexpensive to manufacture.

No department of railways has been more developed by modern technology than signalling and telecommunications. Colour light signals, electrical operation of signals and points, track-circuiting, route-setting panel control, automatic train operation, computer-based centralized traffic control (CTC) – these are the basic elements of up-to-date signalling.

The method of operating long railway lines by CTC began in the USA in 1927. The principle is that at the central point the operator has a diagram showing him where every train is and he can control the

whole section of the line – possibly of two or three hundred miles – from his control console. The operator can see and control the overall track circuit. On modern railways the main line and station approaches are controlled from a single control center to provide regular traffic and avoid delays.

To control a whole trunk line from one place a single control centre was first introduced in Japan, on the New Tokaido Line. The entire line between Tokyo and Osaka is wholly controlled from the general control center located in Tokyo. It's well-known that conventional CTC uses conventional relays. Practical railway experience shows that it takes much time to transmit information therefore the Japanese National Railways have developed a new system using transistors and diodes. This system proves to be more reliable; besides that it is more economical because it helps to save time: it takes about one second to scan indications for all tracks.

At present up-to-date electronic equipment including a digital computer is widely used to automate train operation and to improve the quality of railway service.

For operating railway traffic, an operating licence issued by the Ministry of Transport and Communications is required. The operating licence may include conditions, connected particularly with the extent and nature of the services to be operated, which complement the provisions. If requested, the operating licence may be limited to the provision of passenger or freight services only.

The Ministry reviews the operating licence and its conditions every five years after issuing the licence. Furthermore, the Ministry may check whether the railway undertaking fulfils the obligations in relation to the operation of railway traffic imposed on it by, if there is serious doubt that the obligations are observed.

An operating licence issued in one state belonging to the European Economic Area is valid throughout the territory of the European Economic Area. The Ministry informs the appropriate competent authority if a railway undertaking licensed in another state belonging to the European Economic Area no longer meets the conditions to be complied with for receiving a licence.

**Ex. 1. Answer the following questions to the text:**

- 1 Do railway signalling and communications have the most advanced technologies and equipment?
- 2 What are the basic elements of up-to-date signalling? Which of them is the latest one? What's your opinion on the subject?
- 3 What does the abbreviation CTC mean?
- 4 What country was the first to use CTC on its railways?
- 5 What kind of a diagram does the operator have on his (her) control console?
- 6 How long may the section of the main line be controlled from the single control centre?
- 7 What approaches are controlled from a single control centre?
- 8 Why is CTC so important for railways?
- 9 What railways began to control a whole trunk line by means of CTC?
- 10 What devices had been used to transmit information before the Japanese National Railways developed a new system using transistors and diodes?
- 11 Why are transistors and diodes more reliable than relays?
- 12 What is the latest development used to automate train operation and improve the quality of railway service?

**Ex. 2. Search the text for the English equivalents of the following Ukrainian phrases:**

принцип полягає в тому, що ...; повністю контролювати; потребується багату часу, щоб...; під'їзні станційні колії; ділянка залізничної лінії; добре відомо, що ...;автоматизувати рух потягів; знімати показання.

**Ex. 3. Translate the following sentences from Ukrainian into English:**

- 1 Впровадження диспетчерської централізації забезпечує безпечність залізничних перевезень.
- 2 Для гарантії безпечного керування потягом встановлюють систему швидкісного автокерування.

- 3 Потяг пройшов маршрут без затримок.
- 4 Сигналізація використовується для контролю та регулювання руху потягів.
- 5 Обладнання потягів цією системою дозволяє підвищити пропускну спроможність лінії.
- 6 Система керування стрілками та сигналами з одного пункту називається централізацією стрілок та сигналів.
- 7 Диспетчер у центрі керування отримує повну інформацію про рух потяга на дільниці.
- 8 Диспетчер повинен контролювати автоматичне керування потягом. Для цього він використовує радіозв'язок та може спілкуватися як з машиністом та і з черговим по станції (yard master).

#### **Ex. 4.**

**a) Translate the words and phrases given in the below into English:**

Диспетчерська централізація, рейковий ланцюг, кнопковий перемикач, пульт керування, автоматична установка маршруту, клавіатура, схема колії, дільниця, цифровий комп'ютер.

**b) Fill in the blanks with the appropriate word or phrase and translate the text into Ukrainian.**

#### **Centralized Traffic Control**

C... T... C... combines the principles of push-button switches with the high-speed processing capabilities of a digital minicomputer. The basic c... c... has two displays for t...d... of the controlled distance and a centre display. They are placed directly in front of the operator. The display shows the overall track diagram including current routes, track occupancy (занятость) and signal indications. The p...-b... s... are replaced by a compact control console keyboard. This k... enables the operator to call up an enlarged track plan of a selected s... which shows the current status of the r... s..., signal indications and t... c... occupancies.

Besides, the keyboard enables the operator to make a change if necessary. All these control functions are performed via the d... c... .



### **Ex. 5. Complete the sentences:**

- 1 The method of operating long railway lines by CTC began.....
- 2 The entire line between Tokyo and Osaka is wholly controlled from.....
- 3 At present up-to-date electronic equipment including a digital computer is widely used.....
- 4 No department of railways has been more developed by modern technology than.....
- 5 The principle is that at the central point the operator has .....he can.....– possibly of two or three hundred miles – from his control console.
- 6 On modern railways the main line and station approaches are ..... to provide regular traffic and avoid delays.
- 7 The operator ..... track circuit.

### **GRAMMAR REVIEW**

#### **Ex.1. Express the idea in the Present, Past and Future Indefinite (use the adverbials).**

- 1) Passengers [to cross] the railway lines by the bridge.
- 2) A lab assistant [to show] the equipment to the students.
- 3) The students [to repeat] new words before the lesson.
- 4) He [to have] enough time to do this work.
- 5) The trains [to be late] because of track repair works.
- 6) The buses [to run] every five minutes.
- 7) The mechanic from the garage [to do] simple radio repair.
- 8) Summer holidays [to begin] in July.
- 9) It [to cost] a lot of money to go to England by air.
- 10) Robots [to substitute] people in some monotonous operations.
- 11) Railway lines [to connect] all parts of this country.
- 12) This company [to provide] us with all the necessary equipment.
- 13) We [to meet] every Sunday.

**Ex.2. Choose the correct voice form of the predicates and translate the sentences.**

- 1) A large number of cars [parked; were parked] near the railway station.
- 2) The speed of Metro trains [reaches; is reached] 90 km/h.
- 3) This railway company [will transport; will be transported] freight only.
- 4) Wood [replaced; was replaced] by steel as a material for constructing passenger cars.
- 5) I [work; am worked] for a construction company which has a lot of contracts in other countries.
- 6) The windows of his car [make; are made] of unbreakable glass.
- 7) We [left; were left] our car in the parking lot near the terminal.
- 8) Sleepers [hold; are held] the two rails at the right distance.
- 9) You [will meet; will be met] by an agent from the travel bureau at the airport.
- 10) Special railroads such as funiculars [use; are used] on steep grades in the Alps.
- 11) The driver [told; was told] his passengers to fasten their safety belts.

**Ex.3. Read and translate the following sentences paying attention to the modal verbs must, can, may, need, should.**

- 1) Drivers of express and fast trains must have a rest after 3 hours of work.
- 2) You should not ride a motorbike without a helmet.
- 3) You need not hurry up; you may take a later suburban train.
- 4) What can you do while traveling by train? You can read a novel or do a crossword puzzle, you can just stare out of the window or talk to your fellow-traveler, you can sit back and listen to the clicking of the carriage over the rails.
- 5) The tickets should not be thrown away as inspectors may check them during the trip.
- 6) Passengers should not walk across the railway lines; there is a footbridge at the end of the platform.

- 7) If you are traveling by air, you mustn't carry anything in your luggage that can be used as a weapon, such as a knife or a pair of scissors.
- 8) You need not go to the railway station to buy tickets because you can book them at the nearest travel agency.
- 9) The Trans-European expresses are equipped with interurban telephones through which the traveler can contact office or home.
- 10) In Metro when the passengers get on the escalator, they should stand on the right so that people who hurry can run by on the left.
- 11) He can't leave the country until the police return his passport.

## UNIT FOUR

**Copy the following words and memorize their meanings:**

an intermittent automatic train control – точкова автоматична локомотивна сигналізація;  
 efficiency – ККД;  
 cross-border operation(s) – прикордонні перевезення;  
 to coast – рухатися по інерції;  
 to insulate – ізолювати;  
 to handle data – обробляти дані;  
 appraisal – оцінка,  
 to appraise – оцінювати;  
 a view – погляд, гадка;  
 to view – розглядати;  
 a point of view – точка зору;  
 from (economic, political) point of view – з (економічної, політичної) точки зору;  
 to exist – знаходитися;  
 responsible – відповідальний;  
 responsibility – відповідальність;  
 to take/accept responsibility – брати, приймати відповідальність;  
 benefit – вигода, користь;  
 to benefit (from smth) – отримувати вигоду (з чого-небудь).

## **Read the text and translate it with a dictionary if necessary.**

Industrial and management engineering is the field pertains to the efficient use of machinery, labour, and raw materials in industrial production. It is particularly important from the viewpoint of costs and economics of production, safety of human operators, and the most advantageous deployment of automatic machinery.

### **SIGNALLING TECHNOLOGY**

(1) Signalling technology has undergone the same revolution as telecommunications. Availability of powerful computer equipment and rapid information exchange techniques have led to more sophisticated signalling systems. These systems are not only able to drive the train, but decide when is the optimum time to brake, coast or accelerate for maximum energy efficiency. These abilities have allowed on-board computers to provide much more necessary information for a driver which was impossible some years ago.

(2) On the one hand, with the exception of some newly constructed lines, the cost of providing continuous data exchange between track and train can be high. On the other hand, up-to-date signalling systems help to save time which is of great importance for train operation. Secure coding of information has increased the effectiveness of intermittent ATC and increased the quantity of data that can be handled.

(3) Although developed for metro lines, various components of ATC are increasingly being applied to main lines, because they provide automatic train protection, control and operation.

(4) Needless to say that safety has become a political question, forcing a reappraisal of what level of signalling technology is required. More and more practical railway engineers realize that ATC is essential for safe operation, even though statistics do not always support this view.

(5) Introduction of ATC is important from economic point of view. Thus, in metro driverless operation may help to save labour costs<sup>1</sup>.

(6) It's quite clear that no modern railway can exist without ATC. Nevertheless, introduction of this system is not such an easy task as it may seem at first sight. At present it's a headache for many European railways. As we know many more high-speed railway lines are being

constructed, more and more trains are being designed and produced specially for cross-border operation. All this makes operators' work more responsible and nervous. New up-to-date ATC facilities must be installed, and their design, manufacture and installation require great expenses. But this work must be done, because to benefit from ATC system railways are to use it throughout their networks.

(7) The railway operator shall have valid, adequate liability insurance cover corresponding to its asset base or make equivalent arrangements to provide for its liabilities in case such damage is caused to third parties by railway operations for which the railway operator is responsible on the basis of a law or an agreement. Such an insurance cover or equivalent arrangements shall be valid throughout the whole period of time during which railway traffic is operated.

(8) Applications for infrastructure capacity shall be made to the Rail Administration for each timetable period within the period of time to be laid down by Government decree.

(9) Applications for new capacity, or a change of capacity, for regular traffic may be made during the timetable period as well. Further provisions concerning applying for infrastructure capacity and the deadlines for the submission of applications shall be issued by Government decree in compliance with the provisions of Annex III of the Capacity and Infrastructure Charge Directive.

(10) If there are several applicants for the same infrastructure capacity or the requested capacity has effects on the capacity requested by another applicant, the Rail Administration shall in the first place attempt to co-ordinate the requests between the applicants. In such cases, the Rail Administration may offer applicants capacity that does not essentially differ from the capacity they have requested.

**Note: 1) labour costs – витрата на заробітну плату.**

### **Ex. 1. Answer the following questions to the text.**

- 1 What was the result of introduction of powerful computer equipment?
- 2 What are the main functions of sophisticated signalling systems?
- 3 Was it possible for a driver to receive all the necessary information some years ago?

- 4 Is it expensive to provide continuous data exchange between track and train?
- 5 Where are various components of ATC being applied?
- 6 Do you think that safety is a political question? Can you give any reasons?
- 7 Why is introduction of ATC important from economic point of view?
- 8 Is introduction of ATC an easy task?
- 9 Is an operator's work responsible and nervous?
- 10 Why is it vital to introduce automatic train control?

**Ex. 2. Go back to the text, guess the meaning of the following phrases and translate them into Ukrainian:**

to undergo revolution; continuous data exchange; in a mere 6 ms; secure coding of information; at first sight; throughout (their) networks.

**Ex. 3. Search the text for the English equivalents of the following Ukrainian phrases:**

наявність; з одного боку; з іншого боку; цілковито ясно (очевидно); не таке просте завдання; потребує великих витрат.

**Ex. 4. Translate the following sentences into English:**

- 1 З одного боку, ці нові технології дозволяють заощадити час, з іншого боку, вони полегшують рутинну роботу.
- 2 Немає необхідності казати про привілей цього проекту.
- 3 Цілковито очевидно, що ніхто не перекладе цей текст, не знаючи термінів.
- 4 Жодна сучасна залізниця не може існувати без автоматичного керування потягом.
- 5 Впровадження найбільш складної комп'ютерної технології було оцінено з економічної точки зору, так як не потребувало великих витрат.
- 6 Це не така проста задача, яка може виявитися на перший погляд.

7 Наявність бортового комп'ютера дозволяє обмінюватися аналоговими даними.

**Ex. 5. Go back to the text and using the paragraph reference and find the words which are similar to:**

facilities, fast, advanced, to permit (paragraph 1);  
to build, to demand, only, safe, data, amount, to process (paragraph 2);  
to work out, underground, different, an element, to use, a trunk line (paragraph 3); a matter, to understand, important, to back up (paragraph 4); to assist (paragraph 5); obvious, up-to-date, a railroad, simple, a job, nowadays, to build, costs (paragraph 6).

**Ex. 6. Complete the sentences:**

1 Availability of powerful computer equipment and rapid information exchange techniques .....

2 These abilities have .....for a driver which was impossible some years ago.

3 ..... has increased the effectiveness of intermittent ATC and increased the quantity of data that can be handled.

4 More and more practical railway engineers realize ....., even though statistics do not always support this view.

5 ....., introduction of this system is not such an easy task as it may seem at first sight.

6 All this makes operators' .....

7 But this work ....., because to benefit ..... are to use it throughout their networks.

## GRAMMAR REVIEW

Ex.1. Match the beginnings of the sentences with their endings.

1) The cursor on the screen can be moved	a) till it stops raining.
2) You must not cross the street	b) what you can do today.
3) You should hurry up	c) he couldn't start it.
4) Can you show me	d) the speed of 60 kmh within the city limits
5) You may take any of these instruments	e) we can be late.
6) You need not copy this text	f) taxes to the government.
7) Something was wrong with the car	g) I'll give you a Xerox of this page.
8) Never put off till tomorrow	h) I'll phone them.
9) Drivers should not surpass	i) the way to the station?
10) You may wait in the office	j) because I don't need them now.
11) Everybody must pay	k) when the red light is on.
12) You need not write this letter	l) with the help of the mouse.

**Ex.2. Present Indefinite Active or Present Continuous Active? Put the verb in brackets into the correct tense form.**

- 1) Many foreign tourists [to travel] in our country at present.
- 2) A person with a good education usually [to get] a better job.
- 3) The train is late because the workers [to repair] the track.
- 4) As a rule the workers [to repair] the track in summer.
- 5) Look! Two aircrafts [to fly] in the dark sky.
- 6) This fast train always [to arrive] on schedule.
- 7) This section of track [to need] reconstruction.
- 8) The problem of ecology [to become] one of the most important problems for mankind now.
- 9) Englishmen very seldom [to talk] on the Underground. They [to prefer] to read newspapers.
- 10) My TV set [to work] better now because we have installed the external antenna.
- 11) I can't talk to you because I [to hurry].
- 12) The phone [to ring]. Can you answer it?
- 13) The arrow of compass always [to point] to the North.



- 14) Nowadays the railways in the USA [to transport] only 0.6 per cent of passengers.
- 15) ... all these passengers [to wait] for the suburban train arrival?
- 16) ... you often [to receive] letters from your former group-mates?
- 17) Please, don't make much noise. The students [to write] a test.
- 18) ... he usually [to buy] one-way or round trip tickets?
- 19) What berth ... you [to prefer] to travel by?
- 20) Where is John? – He [to meet] his friends at the airport.
- 21) What platform ...our train [to depart] from?
- 22) What ... you [to look for]? – I[to look for] my umbrella. Look out of the window, it [to rain] cats and dogs.

**Ex.3. Past Indefinite Active or Past Continuous Active? Put the verb in brackets into the correct tense form.**

### **ON THE PLATFORM**

The train [to stop] at a small station. A passenger [to look out] of the window and [to see] two women who [to sell] cakes. The man [to want] to buy a cake. The women [to stand] rather far from the carriage. The man [to call] a boy, who [to walk] on the platform near the carriage and [to ask] him: "How much does the cake cost?" "Three pence, sir," – [to answer] the boy. The man [to give] him sixpence and [to say] to him: "Bring me a cake, and with the other three pence buy one for yourself." Some minutes later the boy [to return]. He [to eat] the cake. He [to give] the man three pence change and [to say]: "There was only one cake, sir."

### **UNIT FIVE**

**Copy the following words and memorize their meanings:**

logistics – логістика;  
 warehousing – складування;  
 packing – пакування, упаковка;  
 shipping – навантажування, перевезення вантажу;  
 delivery – доставка;

logistics information services –логістичні інформаційні послуги;  
closely linked supply chain –ланцюг тісно зв'язаних поставок;  
supply chain management –управління ланцюговими поставками;  
logistics operator –оператор з логістики;  
inventory – інвентаризація;  
unavoidable –неминучий, обов'язковий;  
3PL (third-party logistics) – різновид логістики,коли частина логістичних функцій передається сторонній організації;  
4PL (fourth-party logistics) – різновид логістики,коли всі логістичні функції виконуються однією сторонньою організацією;  
wastefulness (of time, money, etc.) – марнотратність;  
barrier-free rail-freight – безперешкодні залізничні перевезення;  
fully-fledged services – повноцінні послуги;  
enhanced services – розширені послуги;  
inter-modal transport – різнорідний (інтермодальний) транспорт;  
global positioning satellite (GPS) system –система супутникового позиціонування;  
electronic data interchange (EDI) system –система обміну електронними даними;  
supply chain –ланцюг поставок;  
freight forwarder –експедитор;  
procurement –придбання.

## **TRANSPORTATION AND LOGISTICS**

Ukraine lies between Europe and Asia serving a bridge geographically and economically. This location at the crossroads of two continents enables Ukraine to develop its transport and logistics activities. But transit problems on our road network have increased day after day. Ukrainian authorities have put into place the initiatives to promote the crossover from road travel towards the other transportation methods. Before the 1970s, the term “logistics” was hardly ever used in economic studies in Ukraine. Research on logistics did not start until the early 1980s when the concept was imported from other countries. After 20 years of research and implementation, logistics has become an element in Ukraine economic development.

The study of logistics in Ukraine originated with the material management system. However, since the concept of logistics is still vague, many people still confuse logistics with material management. Logistics is the management of the flow of resources between the point of origin and point of destination in order to meet some requirements, for example of customers or corporation. The resources managed in logistics can include physical item such as food, materials, equipment, liquids, and staff as well as items such as information, particles and energy. The logistics of physical items usually involves the integration of information flow, material handling, production, packaging, inventory, transportation, warehousing, and often security. The complexity of logistics can be modeled, analyzed, visualized, and optimized by dedicated simulation software. Minimizing use of resources and time are common motives.

The term logistics comes from the late 19th century: from French *logistique*, from *loger* “to lodge”. Logistics is considered to have originated in the military’s need to supply itself with arms, ammunition, and rations as it moved from base to a forward position. In the ancient Greek, Roman and Byzantine empires, military officers with the *logistikas* were responsible for financial and supply distribution matters the New Oxford American dictionary defines logistics as “the time-related positioning of resources”. Logistics is the process of planning, implementing, and controlling the effective and efficient flow of goods and services from the point of origin to the point of consumption.

Logistics as a business concept evolved in the 1950s due to the increasing complexity of supplying business with materials and shipping out products in an increasingly globalized supply chain, leading to a call for experts called “supply chain logisticians”.

Logistics is composed primarily of functions such as transportation, warehousing, packing, shipping, customized processing, delivery, logistics information services, and other operations. Today, logistics synthesizes these relatively independent traditional functions into a closely linked supply chain. It employs an integrated management approach using modern management concepts, methodology, and technological tools. Supply chain management is the backbone of today’s logistics services.

There is major difference between traditional and modern logistics. Modern logistics is not just a process made up of a series of activities. More importantly, it is the process of a logistics provider participating in the management and administration of a manufacture's business. A traditional logistics operator manages with the objective to maximize profits and minimize operation costs. However, a modern logistics operator aims to offer services that meet customer needs, optimize overall performance of logistics function, and maximize profits and minimize costs across all logistics activities.

Thus, modern logistics is about service and integrated management of the whole supply chain.

From the micro-economic view, companies have little room to manoeuvre in cutting production and sales costs as production technologies have improved and management know-how grown on a global level. However, there is still ample potential to cut costs in logistics operations such as transportation, warehousing, delivery, and inventory. Thus, companies begin to change the emphasis from the dominance of capital and product differentiation to logistics. In general, logistics costs are a significant part of operating expenses, accounting for 5 % --35 % of sales revenue. Today's integrated supply chain has made logistics management a priority for many companies.

Today's logistics has become an advanced form of organization and management technology. In addition to cutting costs and raising productivity, logistics is widely recognized as an important source of revenue.

From the macro-economic viewpoint, Ukraine economy and industrial structure are at historical turning point, requiring adjustment and integration. Most of Ukrainian traditional industries are in financial difficulty due to fierce competition. The malfunctioning supply chain has become the major weak link of industrial development and many industries are gradually shifting the focus of their competition to distribution channels. Modern logistics can open the door to Ukraine future industries as well as to economic integration. Industries that can grasp the opportunities offered by logistics will steer the Ukraine economy into the future.

Logistics is an unavoidable part of all business. A company can perform its own logistics (self-operated logistics), obtain outside logistics services, or outsource logistics function to a logistics

company (third party logistics). Third party (3PL) involves using external organization to execute logistics activities that have traditionally been performed within an organization itself. According to this definition, third party logistics includes any form of outsourcing of logistics activities previously performed in house. It, for example, a company with its own warehousing facilities decides to employ external transportation, this would be an example of third party logistics. Logistics is an emerging business area in many countries.

The concept of Fourth-Party Logistics (4PL) provider was first defined by Andersen Consulting (Now Accenture) as an integrator that assembles the resources, capabilities and technology of its own organization and other organizations to design, build, and run comprehensive supply chain solutions.

Whereas a third party logistics (3PL) service provider targets a function, a 4PL targets management of the entire process. Some have described a 4 PL as a general contractor who manages other 3PLs, truckers, forwarders, custom house agents, and others, essentially taking responsibility of a complete process for the customer.

Logistics management has become a specialized field as markets have become more extensive. Consequently, many businesses favour outsourcing their logistics functions to specialized third-party logistics providers. In doing so, they free themselves to concentrate on their core business, while making full use of the specialized knowledge, technology, and information networks of the third-party providers to obtain services or production factors that are not available within their own organizations. A professional working in the field of logistics management is called a logistician.

In Ukraine today, after a product leaves the factory, the distribution cost including the various logistics functions such as shipping, warehousing, transportation, and delivery to the end user is about 50 % of the price. Such wastefulness of time, money and inventory presents a huge opportunity for logistics development.

Modern logistics system span many industries and operations but two most important are transportation and warehousing. Many well-known logistics companies in the USA, Europe and Japan have their origins in transportation and there are strong ties between logistics and transportation. The transportation industry is the basic logistics carrier

and transportation costs represents a large part (about 45 %) of logistics costs. Rationalizing transport methods, minimizing costs, shortening transit times, and delivering products punctually and accurately are all prerequisites for cutting logistics costs and improving logistics efficiency. Transportation is the core of modern logistics and barrier-free rail freight is a key part of modern logistics. Railways are the main mode of transport in Ukraine where they enjoy an extensive network, adequate warehousing, well-located stations, large-scale container systems, special transport services, courier services for luggage and parcels, etc. The facilities and equipment used by traditional rail freight are well positioned to develop modern logistics. Furthermore, railways have comparatively high brand recognition in the domestic market, a skilled staff, a stable client base and a dominant market share. The advantages of railways are unlikely to be matched by other transport modes, logistics companies, and newcomers to the logistics industry for a long time.

The top priority in developing Ukraine's logistics is building large-scale integrated logistics centres offering services over a wide area. Logistics systems in Ukraine must match the current state of Ukraine's transport industry while accommodating world trends in logistics. Modern logistics emphasizes provision of fully-fledged services to customers rather than just physical movement of goods. Therefore, development of rail freight in the direction of third-party logistics could greatly improve rail transport by introducing new management concepts and enhanced services. Furthermore, modern logistics is a high-technology industry based on information technology (IT) and the Internet. It requires systems facilitating information exchange including advanced electronics technology global positioning satellite (GPS) systems, telecommunications, bar-coding, electronic data interchange (EDI) system, automated warehousing, automated shipping, inter-modal transport, etc. As a result, it has the potential to drive rail transport, especially rail freight, to new heights. A logistician is a professional logistics practitioner. Professional logistics are often certified by professional associations. One can either work in a pure logistics company such as shipping line, airport or freight forwarder or within the logistics department of a company. However, as a mentioned previously, logistics is a very broad field encompassing procurement, production, distribution and disposal activities. Hence,

the career perspectives are very broad also. A new trend in the industry are the 4PL, or Four-party of logistics –consulting companies offering logistics services.

Some universities and academic institution train students as logisticians, offering undergraduate and postgraduate programs.

**Answer the following questions to the text:**

- 1 How can a competitive efficient and reliable freight transport system be achieved?
- 2 When did the study of logistics originate in Ukraine?
- 3 What is logistics?
- 4 What is logistics composed of?
- 5 What is a major difference between traditional and modern logistics?
- 6 In what logistics operations is there still potential to cut costs?
- 7 What has the logistics management become?
- 8 What is the third-party (3PL) and four-party (4 PL) logistics?
- 9 What are the prerequisites for cutting logistics costs and improving logistics efficiency?
- 10 What is the core of modern logistics and what is its key part?
- 11 What do you know about the profession of a logistician?

**Exercise1. Five people give their definition of logistics. Complete the sentences using the words from the box.**

provide	storage	support	distribution	delivery	maintenance
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- 1 Logistics means that you manage the procurement and movement of goods and the \_\_\_\_\_ of inventory.
- 2 It means the \_\_\_\_\_ of the goods the customer needs at the right time, in the right place and of the right quality.
- 3 My definition of logistics is this: it's to plan, organize and manage operation that \_\_\_\_\_ services and goods.
- 4 Logistics –that the purchasing, maintenance, \_\_\_\_\_ and material and staff.
- 5 Logistics is the planning and \_\_\_\_\_ of operations such as warehousing, inventory, transport, procurement, supply, and \_\_\_\_\_.

**Exercise 2 Complete the following table using the words from exercise1**

	Verb	Noun
1	to provide	
2		storage
3	to support	
4		delivery
5		distribution
6	to maintain	
7		transportation
8		purchasing

**Exercise 3. Match the definitions (a-f) with the words (1-6) below.**

1) Carrier	----	a) number of shipments under one bill of lading
2) freight forwarder	----	b) person or firm named in a freight contract to whom goods have been shipped or turned over for care
3) supplier	----	c) company that specializes in the speedy and
4) haulage contractor	----	d) company that transports or conveys goods
5) courier	---	e) company which supplies parts or service to another company: also called vendor
6) consignee	----	f) person or business that arranges documentation and travel facilities for companies dispatching goods to customers

**Exercise 4. Match the verbs( 1-8) with the activities( a-h) to make phrases from the recordings.**

1) book	----	a) a number of shipments under
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2) consolidate	---	one bill of lading
3) deal	----	b) booking reservations
4) keep	----	c) that health and safety standards are maintained
5) make	----	d) modern computer systems
6) use	-----	e) space on a ship, train, lorry, or plane
7) check	----	f) where to put them in the warehouse
8) take care	----	g) an eye on the budget
		h) with all the necessary documentation

**Exercise 5. Replace the underlined verbs with words from the box that have the same meaning.**

provide	train	organize	ensure	inform about	check
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- 1 We supply software for the car industry.
- 2 I often advise clients on the most suitable transport method.
- 3 In my job I have to make sure that passengers arrive on schedule.
- 4 My job is to supervise incoming goods.
- 5 I also plan the transport of goods.
- 6 I instruct staff.

**Exercise 6. Put the words in the right order. Use the correct form of the verb.**

- 1) an excellent / provide/ delivery service/ my company.
- 2) you/ how much/ handle\ cargo/ per year?
- 3) to other countries / not ship/ we/ chemical products.
- 4) responsible for/ be/ the warehouse manager \also\ vehicles and machinery.
- 5) to foreign companies\ car parts/ this vendor\ supply?
- 6) usually\ arrange\ for companies\ a freight forwarder\ documentation.

**Exercise 7. Complete the job advertisement for a corporate procurement manager with words from the box.**

Fulfillment, negotiation, 3PL providers, procurement, command, vendors, supply chain, relationship

We are looking for a proactive and dynamic professional to take care of our strategic procurement and supplier \_\_\_\_\_ management. Reporting to the Director of Corporate Procurement, the successful applicant will be responsible for managing both internal and external customers and for working with the appointed \_\_\_\_\_. While liaising with the team, \_\_\_\_\_, and related stakeholders you will also be involved in providing business support to optimize finance-logistics processes, order \_\_\_\_\_ and logistics costs. Other responsibilities include providing initiatives to help maximize company business profitability and efficiency. The ideal candidates should have a degree in \_\_\_\_\_ management or logistics management with a deep understanding and knowledge of the Ukraine logistics market. You should have at least 5 years' experience in a multinational company and you should possess outstanding \_\_\_\_\_ skills. Based in Macau, excellent \_\_\_\_\_ of English and Cantonese is a must with Mandarin an advantage. If you are interested in this role, please send your CV in Word format to ...

**Exercise 8. Read the job advertisement again and answer the questions.**

- 1 What area will the new corporate procurement manager head?
  - 2 What are the procurement manager's main responsibilities? List two or three.
  - 3 Who will he/she collaborate with closely in his/her job?
  - 4 What qualifications are expected?
  - 5 What kind of experience is required?
- Can you think of other areas which are important in procurement? Discuss with a partner.

**Exercise 9. Put the words in the right order.**

- 1) a shipment /send \us \a quotation \please \ for \ to Madras
- 2) state/ delivery date/ pleas/ in your quotation \ your earliest
- 3) let us/could/ the following/please/have a quotation/ including / details\ you?
- 4) a part truck load/ shipping rates/what /your / for / to Birmingham \ are?
- 5) on sailing times/ your quotation \detailed information\ should/ and insurance rates/ also include
- 6) the following consignment \ please\ for\ of\ quote/ the transport

**Exercise 10. Here is an extract from a manual providing rail loading instructions. Complete the sentences with words from the box.**

Carefully, attention, overhanging, sure, place, examine, secure, instructions, fit, distribute, exceeded, diagonally

- 1 \_\_\_\_\_ vehicle carefully.
- 2 Do not place items \_\_\_\_\_ across the wagon.
- 3 When loading is complete, ensure that it fully complies with the \_\_\_\_\_ given in our Rail instructions Manual.
- 4 Examine load carefully and make \_\_\_\_\_ it is undamaged and suitable for loading.
- 5 \_\_\_\_\_ longer heavier pieces on the bottom of the load.
- 6 Make sure that load is \_\_\_\_\_.
- 7 Ensure vehicle is \_\_\_\_\_ to be loaded.
- 8 Strap \_\_\_\_\_ loads.
- 9 When checking the vehicle, give special \_\_\_\_\_ to door securing mechanisms.
- 10 Examine vehicle and load \_\_\_\_\_ after loading.
- 11 \_\_\_\_\_ load as evenly as possible and make sure wheels are evenly loaded.
- 12 Check whether vehicle capacity has not been \_\_\_\_\_.

**Exercise 11. Complete this e-mail about an urgent shipment with prepositions from the box.**

By, on, with, in, out, to, between, of

Sonja,

I'm afraid there is a problem \_\_\_\_\_ the scheduled deliveries \_\_\_\_\_ France next week. Our customer GLP Pharma in Brest has just informed me that they are already \_\_\_\_\_ of stock and need an urgent delivery of the 5 mg 30 and 90 piece packs this week instead \_\_\_\_\_ next week. If possible, we must try to make one partial delivery \_\_\_\_\_ Wednesday (or as soon as the packaging is finished) of the 5 mg 30 packs.

We need a direct truck \_\_\_\_\_ our production plant in Germany and Brest. If we can ship the first part on Wednesday morning, the truck should arrive \_\_\_\_\_ Brest on Thursday afternoon.

The second delivery should be made on Friday with the rest of the 5 mg 30 and the 90 packs. As the products are needed \_\_\_\_\_ Monday, the truck must be unloaded in Brest on Saturday or Sunday.

Please let me know if there are any problems!

Regards

Jon Frederikson

Logistics Manager

**Exercise 12. Complete the sentences with words from the box.**

So, because, although, due, as a result, despite, because, in spite of

1 Our customer wants to ship valuable freight, \_\_\_\_\_ we need to think about insurance.

2 A part of the shipment seems to be damaged \_\_\_\_\_ of rough handling.

3 \_\_\_\_\_ the customer needed them urgently, the goods couldn't be delivered at the weekend.

4 The flight was cancelled \_\_\_\_\_ to bad weather.

5 The driver had the wrong address. \_\_\_\_\_, it took him three hours to deliver the pallets.

6 The consignment arrived on time \_\_\_\_\_ all the customs formalities at the border.

- 7 We are unable to ship today \_\_\_\_\_ we've had problems with our dispatch.
- 8 \_\_\_\_\_ being well secured the load was damaged on arrival.

**Exercise 13. Complete the descriptions of typical warehouse equipment and systems. Use the adjectives from the box.**

Stackable, mobile, adjustable, suitable, bulky, driverless, rigid, collapsible

- 1 An automated guided vehicle is a \_\_\_\_\_ truck which is controlled by computer and electrically powered.
- 2 IBCs( intermediate bulk containers) made of metal or plastic are \_\_\_\_\_, but there are also ones made of canvas, which are \_\_\_\_\_.
- 3 Cage and box pallets are fitted with corner-posts and sides. They are usually \_\_\_\_\_.
- 4 In palletized storage APR, i. e. \_\_\_\_\_ pallet racking, is used.
- 5 Some products are not \_\_\_\_\_ for palletization e.g . expensive \_\_\_\_\_ electronic \_\_\_\_\_ items or large \_\_\_\_\_ and \_\_\_\_\_ items.
- 6 \_\_\_\_\_ shelving is often used for smaller products in non-palletized systems.

**Exercise 14. Read and translate the text using a dictionary if necessary.**

**a) Freight Transport Logistics in Europe –the key to sustainable mobility.**

Europe's transport policy has been characterized by liberalization and harmonization over the years. This has slowly shaped the transport system into what it is today. Globalization and concept of wider Europe create further challenges. The fast growth of freight transport – driven to a large extent by economic decisions—contributes to growth and employment but also causes congestion, accidents, noise, pollution, increased reliance on imported fossil fuels, and energy loss. Infrastructure resources are limited and any disruption in the supply

chain (i.e. energy) has necessarily a negative impact on the EU economy. Without adequate measures, the situation will continue worsening and increasingly undermine Europe's competitiveness and the environment that we all live in.

To overcome such problems, Europe's transport system needs to be optimized by means of advanced logistics solutions. Logistics can increase the efficiency of individual modes of transport and their combinations. As a result, fewer units of transport, such as vehicles, wagons, and vessels should carry more freight. Impact on the environment will decrease accordingly.

Rail and inland waterways need to be modernized. Air freight should be more closely integrated in the system. The positive development of short sea shipping should be accelerated. Deep-sea shipping and its hinterland connections need to be enhanced. Shifts to more environmentally friendly modes must be achieved where appropriate, especially on long distance, in urban areas, and on congested corridors.

At the same time each transport mode must be optimized. All modes must become more environmentally friendly, safer, and more energy efficient. Finally, co-modality, i.e. the efficient use of different modes on their own and in combinations, will result in an optimal and sustainable use of resources.

### **b) Over to you.**

- 1 Do you also have to deal with growing freight traffic in your country?
- 2 How do you think transport system could be improved?
- 3 How do you think intermodal transport systems can make freight transport more efficient?



