



О.С. Королёва

# Automobiles in our life

Часть 1

Екатеринбург  
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МИНОБРНАУКИ РОССИИ

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Кафедра иностранных языков

О.С. Королёва

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## Часть 1

Методические указания  
для практических занятий по английскому языку  
для студентов всех специальностей  
лесотехнического факультета  
очной формы обучения

Екатеринбург  
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## Unit 1. WHERE DOES THE WORD “AUTOMOBILE” COME FROM

### Задание 1

а) Определите с помощью словаря возможные варианты значений слов **motor, solution, construction**.

б) Не прибегая к словарю, попытайтесь определить значения *применительно к контексту* слов и словосочетаний, вспоминая терминологию из пройденного материала, других учебных предметов и различных областей деятельности человека:

**automobile, role, motor, transportation, communication, adapt, ordinary, condition, sport, factor, economic, millions, solution, problems of transport, progress, road, construction.**

### Задание 2

Составьте письменно на русском языке логически построенный рассказ, используя значения слов и словосочетаний, переведенных по Заданию 1. Сравните свой вариант рассказа с вариантами, составленными другими студентами. Определите, какой вариант является на ваш взгляд наиболее предпочтительным.

### Задание 3

Отработайте произношение под руководством преподавателя и определите значение без словаря возможно большего количества слов из каждого столбика:

consist of	motor car	develop
mean	importance	account
move	arise from	agency
take	provide	since
self	substantially	cease
vehicle	differ	luxury

### Задание 4

Подберите соответствующий столбик значений к словам из Задания 3.

разрабатывать	состоять из	автомобиль
расчёт	означать	важность
средство	двигать	возникать из
с тех пор	брать	обеспечивать
переставать	сам	главным образом
роскошь	транспортное средство	различаться

### Задание 5

Составьте из слов в столбиках (Задание 3) возможные английские словосочетания из двух и/или более слов.

### Задание 6

Определите значения однокорневых и производных слов и объясните причины изменения их значения. Вспомните грамматический материал, связанный с выполнением этого задания.

to move – move

to motor - motor

to account - account

to progress - progress

### Задание 7

Определите значения корневых слов и производных от них слов и объясните причины изменения их значения. Вспомните грамматический материал, связанный с выполнением этого задания.

consist, consists, consisted, consisting

mean, meant, meaning, means, meaningful

move, moving, moved, movement, moves

take, takes, took, taken, taking

provide, providing, provided, provides, unprovided

differ, differed, different, differs, differing, difference

adapt, adapted, adapting, adaptable, adaptability, adaptation

develop, develops, development, developed, underdeveloped

find, finding, found, founding, finds

### Задание 8

Отработайте произношение словосочетаний под руководством преподавателя и определите их значения:

two words taken together, self-moving vehicle, unprovided with rails, agencies of transportation and communication, well adapted for ordinary road conditions, a matter of luxury, a decisive factor, economic development, the world at large, a great number of, to a large extent, road maintenance improvement and construction.

### Задание 9

Дайте несколько вариантов значения предложения. Объясните причины изменения перевода предложения. Вспомните грамматический материал, связанный с выполнением этого задания.

The automobile **ceased to be** a matter of luxury.

The automobile **is ceasing to be** a matter of luxury.

The automobile **will cease to be** a matter of luxury.

The automobile **has ceased to be** a matter of luxury.

The automobile **has long ceased to be** a matter of luxury.

The automobile **has long since ceased to be** a matter of luxury.

### Задание 10

Составьте из приведённых ниже слов (предлогов, артиклей и др.) возможные словосочетания из двух и (или) более слов.

two, together, vehicle, taken, construction, communication, with, rails, of, maintenance, and, conditions, development, well, for, ordinary, a matter, of, adapted, luxury, large, world, a, improvement, factor, economic, decisive, the, at, number, a, great, of, to, a, large, extent, road, transportation, and, unprovided, agencies, self-moving, words, road.

### Задание 11

Дополните словосочетания, используя материал Заданий 3 и 7:

the world at \_\_\_\_\_, a great \_\_\_\_\_ of, to a \_\_\_\_\_ extent, road \_\_\_\_\_, improvement and construction, two \_\_\_\_\_ taken together, self-moving \_\_\_\_\_, \_\_\_\_\_ with rails, economic \_\_\_\_\_, \_\_\_\_\_ of transportation and communication, a \_\_\_\_\_ factor, road \_\_\_\_\_, a matter of \_\_\_\_\_, well \_\_\_\_\_ for \_\_\_\_\_ road conditions.

### Задание 12

Упростите предложение, исключив слова, не влияющие на основную мысль предложения. Определите члены предложения (подлежащее, сказуемое, дополнение, обстоятельство). Вспомните грамматический материал о порядке слов в английском предложении.

In some countries where automobiles are found in millions they are playing a most important part in the solution of many problems of transport.

### Задание 13

Составьте словарь слов и словосочетаний, выделенных в Text 1 жирным шрифтом.

### Задание 14

Составьте письменно индивидуальный словарь для данного текста из 10 -15 слов и словосочетаний.

Сравните перевод с содержанием рассказа, подготовленным ранее по Заданию 2. Сделайте выводы. Определите, чей вариант оказался наиболее близким к тексту.

### Text 1. WHERE DOES THE WORD "AUTOMOBILE" COME FROM?

The word *automobile* is not English. It **consists** of two words: *autos* and *mobilis*. *Autos* is a Greek word **meaning** "self, *mobilis* — a Latin word meaning

"movable". The two words taken together mean "self-moving". Thus, an *automobile* means a **self-moving vehicle**. The synonyms of automobile are: auto, car, auto-car, **motor car**.

The role and **importance** of an automobile **arise** from the fact that it can move along roads **unprovided** with rails. In this respect, it **substantially differs** from a **street car** (tram) and a **railway car** (train). In fact, it often replaces street cars, railway cars, and other **agencies of transportation and communication**. In short, the automobile is a vehicle **well adapted** for **ordinary road conditions**.

The automobile has long since ceased to be a matter of luxury or sport and has become a **decisive factor** in the **economic development** of many countries. **This accounts for the fact** that **the world at large** uses a **great number of** automobiles. In some countries where automobiles are **found** in millions they are playing a most important part in the **solution** of many problems of transport.

The development of automobiles is also accountable **to a large extent for** the progress in road **maintenance, improvement and construction**.

### Задание 15

Найдите в тексте синонимы слова **automobile**.

### Задание 16

Заполните пропуски в предложениях в соответствии с содержанием текста.

An automobile means.....

The role and importance of an automobile arise from the fact that it can .....rails.

The automobile is a vehicle.....for ordinary road conditions.

The automobile has become.....in the economic.....of many countries.

### Задание 17

Проанализируйте предложения, в которых отсутствуют пробелы между словами. Правильно поставьте пробелы и напишите предложения. Прочтите их вслух, изменяя поочередно логическое ударение на отдельных словах в зависимости от того, какую мысль вы хотите подчеркнуть. Объясните возможные искажения мысли при неверном соотношении пауз во фразах.

The automobile has long since ceased to be a matter of luxury  
Or sport and has become a decisive factor in the economic development of many countries.

This accounts to the fact that the world at large uses a great number of automobiles.

In some countries where automobiles are found in millions they are playing an important part in the solution of many problems of transport.

### Задание 18

Ответьте на вопросы. На основе ответов на вопросы кратко перескажите основное содержание текста на английском языке.

What is the origin of the word *automobile*?

What fact does the role and importance of the automobile arise from?

Why does the automobile play an important part in the economic development in many countries?

### Задание 19

На основе вопросов и ответов на вопросы по Заданию 18 подготовьте диалог. Один из участников диалога - инженер-автомобилист. Он отвечает на вопросы другого участника диалога - студента, который старается получить как можно больше интересующей его информации. При составлении диалога используйте текст и материал, представленный в предыдущих заданиях.

В ходе работы над данным диалогом используйте следующие вводные слова и разговорные фразы:

а) для студента (student)

Good morning!

Good afternoon!

Hello!

Let me introduce myself.

My name is \_\_\_\_

I am \_\_\_\_

I study at \_\_\_\_

I am interested in \_\_\_\_

I would like to ask you about \_\_\_\_

And what about \_\_\_\_

Can you describe me \_\_\_\_

Can you tell me about \_\_\_\_

What are the main characteristics of \_\_\_\_

Thank you for your help.

It was nice to meet you.

See you.

Good-bye;



б) для инженера-автомобилиста (automotive engineer)

Good morning!

Good afternoon!

Hello!

How can I help you?

What can I do for you?

Do you know that \_\_\_ ?

Let me tell you about \_

I would like to mention that

The point is that

Thank you for your coming.

It was nice to meet you.

Hope to see you soon.

Good-bye.

See you.

### Задание 20. Готовимся к Интернет-экзамену.

Look at the envelope. Match the numbers 1-10 with the parts of the envelope.

<p>(1) Sue Scott                  (2) 18 (3) Victoria Road                  Hartfield                  Berkshire                  (4) HA6 4BJ                  (5) UK</p>	<p>(6) Paul Wright                  (7) 165 (8) Biscay Street                  (9) Preston                  Lancashire                  (10) P23 8KJ                  UK</p>
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1) writer's (sender's) name

2) writer's (sender's) house number

3) writer's (sender's) street

4) writer's (sender's) postcode

5) writer's (sender's) country

6) addressee's name

7) addressee's house number

8) addressee's street

9) addressee's town/city

10) addressee's country

## Unit 2. THE ENGINE

### Задание 1

а) Определите с помощью словаря возможные варианты значения словосочетаний и слов **engineering field, overhaul period, balance, jet, start.**

б) Не прибегая к словарю, попытайтесь определить значение *применительно* к контексту слова и словосочетания, вспоминая терминологию из пройденного материала, других учебных предметов и различных областей деятельности человека:

engine, power, machine, produce, mechanical power, energy, interesting groups of problems, engineering field, maximum power, designers work at «the problem, variations of atmospheric conditions, engine, to have a long life, maximum of time, overhaul periods, problem of balance, principal factor is freedom from vibration, engine must be started easily, gasoline engines, diesel engines, gas turbines, steam engines, jet engines, rocket engines.

### Задание 2

Отработайте под руководством преподавателя произношение и определите без словаря возможно большее количество слов из каждого столбика, учитывая варианты значения слов:

ingenious	present	consumption	smoothly
device	thrust	designer	properly
ability	ratio	obtain	overhaul
demand	define	specific	balance
power	output	flexibility	load
consider	fuel	run	advantage

### Задание 3

Подберите соответствующий столбик значений к словам из Задания 2, учитывая возможные варианты значения слов:

потребление, конструктор, получать, удельный, гибкость, работать, устойчиво, должным образом, переборка двигателя, балансировка, груз, преимущество, хитроумный, устройство, способность, требовать, мощность, обсуждать, представлять, сила тяги, соотношение, определять, выход, топливо.

### Задание 4

Определите значение однокорневых существительных и глаголов.

Вспомните грамматический материал, связанный с выполнением этого задания (словообразование, конверсия).

demand - to demand  
call - to call  
run - to run  
balance - to balance  
start-to start  
load to load  
form - to form

### Задание 5

Определите значения корневых и производных слов от них и объясните причины изменения их значения. Вспомните грамматический материал, связанный с выполнением этого задания.

consider, considered, considerable, considering  
able, to be able, ability, disability, disabled  
engine, engineer, engineering  
consume, consumer, consumption  
obtain, obtained, obtainable  
flex, flexible, flexibility  
advance, advantage, disadvantage

### Задание 6

Найдите значения слов и отработайте их произношение:  
ingenious device, must be able to move, power plant, power output, fuel consumption, to run smoothly and properly, problem worked at.

### Задание 7

Дополните словосочетания, используя материал Заданий 2 и 5:

\_\_\_\_\_ output, fuel \_\_\_\_\_, to run \_\_\_\_\_ and \_\_\_\_\_  
ingenious \_\_\_\_\_, must be \_\_\_\_\_ to move, power \_\_\_\_\_,  
problem \_\_\_\_\_ at

### Задание 8

Определите значения слов, используя словарь, и упростите предложения, исключив слова, не влияющие на основную мысль предложения. Определите, какими словами выражены члены предложения (подлежащее, сказуемое, дополнение, обстоятельство, определение).

One more important problem worked at by the designers is the engine reliability.  
The engine is to have a long life, with maximum of time between overhaul periods.

Both in the past and today the designers work at the problem of getting lower specific fuel consumption.

### Задание 9

Составьте словарик слов и словосочетаний, выделенных в тексте жирным шрифтом.

#### Text 2. THE ENGINE

The word *engine* originally meant any **ingenious device**, and came from the Greek word *ingenious*, clever. Any kind of vehicle **must be able to** move. **The ability** to move **demands** power. A machine that produces mechanical power or energy is called an engine or a **power plant**.

Engines **present** one of the most interesting groups of problems **considered** in the engineering field. One of the main problems is receiving the maximum possible power or **thrust** for minimum weight. The weight is included in the factor called the weight/power **ratio**, which may be **defined** as the weight in pounds per horse **power output**.

Another important problem is that of fuel. Both in the past and today the designers work at the problem of getting lower **specific fuel consumption**. Specific fuel consumption is **obtained** by dividing the weight of the fuel burned per hour by the horse power developed;

Another possible problem considered in any engine is its **flexibility**. Flexibility is the ability of the engine **to run smoothly** and perform **properly** at all speeds and through all variations of atmospheric conditions.

One more important **problem worked at** by the designers is the engine reliability. The engine is to have a long life, with maximum of time between **overhaul** periods. In some cases the problem of **balance** is one of the main. Balance has several possible meanings but the principle factor is freedom from vibration. Besides any engine must be started easily and carry its **full load** in a few minutes. There are gasoline engines, diesel engines, gas turbines, steam engines, jet engines and rocket engines. Each of them has certain **advantages** and **disadvantages** over other forms of power plants.

### Задание 10

Определите значение слов и словосочетаний, описывающих технические характеристики двигателя:

weight/power ratio, specific fuel consumption, flexibility, reliability, balance, weight in pounds per horse power output, dividing the weight of the burned fuel per hour by the horse power developed, the ability of the engine to run smoothly and perform properly at all speeds, to have a long life with maximum of time between overhaul periods, freedom from vibration.

### Задание 11

Заполните пропуски в предложениях в соответствии с содержанием текста.

A machine that \_\_\_\_ mechanical power or energy is called an engine or a \_\_\_\_ plant.

One of the main problems is \_ the maximum possible power or \_\_\_\_ for minimum weight.

The weight is included in the factor called the weight/power \_\_\_\_, which may be \_\_\_\_ as the weight in pounds per horse \_\_\_\_ output.

Flexibility is the \_\_\_\_ of the engine to run \_\_\_\_ and perform properly at all speeds and through all \_\_\_\_ of atmospheric conditions.

The engine is to have a \_\_\_\_ life, with maximum of time between \_\_\_\_ periods.

There are \_\_\_\_ engines, \_\_\_\_ engines, \_\_\_\_ turbines,.....  
\_\_\_\_ engines, \_\_\_\_ engines and \_\_\_\_ engines. Each of them has certain \_ and \_\_\_\_ over other forms of \_\_\_\_ plants.

### Задание 12

Ответьте на вопросы. На основе ответов на вопросы кратко перескажите основное содержание Текста 2а

What did the word engine originally mean?

What machine is called an engine or a power plant?

What is one of the main problems engines present?

What is the weight/power ratio?

What is flexibility of the engine?

What engines do you know?

#### Text 2a. SPARK-IGNITION ENGINE TRENDS

**In the face of growing competition** from diesels and **alternative power sources**, some of the latest prototype and production gasoline-fueled engines show how continued engineering development is **meeting demands** for more power, **reduced fuel consumption** and **emissions**, and more **efficient packaging**.

Considerable progress has been made in development of the internal combustion engine over its more than 100-year history, particularly in recent years. Examples include the adaptation of spark-ignition (SI) engines to three-way catalysts and the introduction of **direct injection** in diesel engines. However, even greater demands **range** from more **stringent emissions**

**legislation**, manufacturers' **commitments** to reduce CO<sub>2</sub> **emissions**, and customer requests for higher performance and greater comfort **without prejudice to safety**.

European limits on **hazardous** emissions were reduced in 2000 and **will be tightened** in 2005. Limits for 2005 on HC, NO<sub>x</sub>, and **particulates** will be **one-fifth** of today's levels, and new test cycles with no **warm-up period** will be **mandated**. In the U.S., legislation will demand ultra-low-emission vehicles (ULEV) and, from 2003 onward, California will require a greater **mix** of **zero or near-zero-emissions vehicles**.

**Greenhouse effect** concerns have led most European car manufacturers to commit to introducing cars that, **on** average, emit **less than** 140 g/km (225g/mi) CO<sub>2</sub> by 2008. This **corresponds** to a reduction of more than 25% in fuel consumption **compared with** 1990.

Customers will require even greater safety and comfort that, **in most cases**, can only be fulfilled with higher vehicle mass, which conflicts with demands for less energy consumption. In addition, vehicle performance **must be maintained**, and the **costs of ownership** cannot rise.

The main **target** for advanced spark-ignition engine development is improvement in fuel economy, thus a reduction in CO<sub>2</sub> emissions. Technical **solutions** include **supercharging** and **turbocharging**, **fully variable-valve timing**, and **direct injection**.

### **Задание 13. Addresses in English. Готовимся к Интернет-экзамену.**

#### **Thesaurus**

ZIP Code (AmE) = Postcode (BrE) – a group of numbers; or letters and numbers, that you write at the end of the person's address to help the post man find the exact one where they live.

Title –a word or abbreviation that is used before someone's name to show their profession, social status etc. (ex. 'Doctor', 'Mrs', etc.)

*Match the parts of the address (a – h) and their names (1 – 8)*

- |                   |
|-------------------|
| (a) Mr.           |
| (b) John          |
| (c) Black         |
| (d) 10,           |
| (e) Oxford Street |
| (f) London        |
| (g) WI 9FL        |
| (h) UK            |

- 1 title
- 2 first name
- 3 surname
- 4 house number
- 5 street name
- 6 town/city
- 7 postcode (ZIP code)
- 8 country

## Unit 3. THE DIESEL ENGINE

### Задание 1

а) Определите с помощью словаря возможные варианты значения слов: ignite, ignition, reduce, disadvantages.

б) Не прибегая к словарю, попытайтесь определить значения *применительно к контексту* слов и словосочетаний, вспоминая терминологию из пройденного материала, других учебных предметов и различных областей деятельности человека:

1890, Rudolf Diesel, a German, engine, name, diesels, no ignition system, electricity, ignite, contact, hot air in the cylinder, operation, air, compressed, temperature, compressed mixture produced more power, diesel engines, simple in design, disadvantages, passenger-car engines, noise, smoke, companies, to reduce noise and smoke.

### Задание 2

Отработайте произношение под руководством преподавателя и определите значение возможно большего количества слов из каждого столбика, учитывая варианты значения слов:

distinguish	ignition	space
invent	pressure	investiate
bear	liquid	clatter
feed	apply	accustom
ignite	purpose	reduce

### Задание 3

Подберите соответствующие значения к словам из Задания 2.

Пространство, исследовать, стучать, привыкать, сокращать, различать, изобретать, нести, подавать, зажигать, зажигание, давление, жидкость, применять, цель.

### Задание 4

Определите значение корневых и производных от них слов и объясните причины изменения их значения. Вспомните грамматический материал, связанный с выполнением этого задания.

Invent, inventor, invention, invented, inventing  
bear, bore, born, bearing, unbearable, unbearably  
ignite, igniter, ignition  
purpose, purposeful, purposeless, purposed  
entire, entirely.

### **Задание 5**

Определите значения однокоренных глаголов и существительных. Вспомните грамматический материал, связанный с выполнением этого задания (словообразование, конверсия):

to purpose – purpose  
to bore – bore  
to take – take  
to heat – heat  
to weight – weight  
to power – power

### **Задание 6**

Отработайте произношение под руководством преподавателя:  
the engine that bears his name, ignition system, to be fed with electricity, the operation performed, warm-up period.

### **Задание 7**

Прочитайте и найдите значения предложений. Вспомните грамматический материал, связанный с выполнением этого задания.

The higher the pressure, the higher the temperature.  
Their weight is more than that of a gasoline engine.  
The cost of a heavier fuel is less than that of a light one.  
The fuel consumption of a diesel is much less than that of gasoline engines.

### **Задание 8**

Составьте из приведенных ниже слов (предлогов, артиклей и т.д.) возможные словосочетания из двух и/или более слов.

Electricity, the, that, his, ignition, to, be, warm-, system, the, performed, up, bears, period, name, operation, with, fed, engine.

### **Задание 9**

Дополните словосочетания, используя материал Заданий 3 и 4:

to be \_\_\_\_\_ with electricity, the operation , warm-up  
the engine that \_\_\_\_\_ his name, \_\_\_\_\_ system.

### **Задание 10**

Упростите предложения, исключив слова, не влияющие на основную мысль предложения. Определите, какими словами выражены члены предложения (подлежащее, сказуемое, дополнение, обстоятельство, определение).



As distinguished from gasoline engines diesels have no ignition system fed with electricity.

Their advantage is that they are simple in design and use much heavier liquid fuels than gasoline engines.

All the companies investigating diesels are trying to reduce noise and smoke, but the problems are not yet entirely solved.

### Задание 11

Составьте словарь незнакомых слов, выделенных в Тексте 3 жирным шрифтом.

#### Text 3. THE DIESEL ENGINE

**In** 1890s, Rudolf Diesel, a German, invented the engine that bears his name. **As distinguished** from gasoline engines diesels have no **ignition** system **fed with electricity**. The fuel is ignited simply by contact with very hot air in the cylinder.

The **operation performed** is like this: when taken in the cylinder the air is highly compressed, the temperature rises so the heated fuel-air mixture burns. **The higher the pressure, the higher the temperature**. Besides the compressed mixture produced more power than that uncompressed.

Diesel engines power many of the used vehicles and other equipment. They are usually used **in cases** where engine weight is not **a prime factor**. Their advantage is that they are simple in design and use much heavier **liquid** fuels than gasoline engines. The cost of a heavier fuel is much less than that of a light **one**. Besides the fuel consumption of a diesel is much less than **that** of gasoline engines.

Although **applied** for many **purposes** diesel engines have certain disadvantages. Their weight is more **than that** of a gasoline engine of the same power and it **occupies** much **space**. The disadvantages of diesels as passenger-car engines are slow performance, noise and smoke.

All the companies investigating diesels are trying to reduce noise and smoke, but the problems are not yet **entirely** solved. Diesel engines **clatter** when started on a cold morning. And the **warm-up period** for all diesels seems too long to drivers **accustomed to** gasoline models.

### Задание 12

Определите, что является общим для следующих предложений. Вспомните грамматический материал, связанный с выполнением этого задания.

The fuel is ignited.  
The air is highly compressed.  
The problems are not yet entirely solved.

### Задание 13

Ответьте на вопросы. На основе ответов на вопросы кратко перескажите основное содержание Текста 3а.

Who invented diesel engine?  
Do diesel engines have ignition system fed with electricity?  
How is the fuel ignited in the diesel engine?  
What is the operation performed?  
Do diesel engines power most of vehicles and other equipment?  
What is the advantage of diesel engines?  
What are disadvantages of diesels as passenger-car engines?  
Are the companies trying to reduce noise and smoke of diesel engines?

### Text 3a. CLUTCH

The word "clutch", as used in connection with automobiles, indicates a device attached to cars having **change speed gears** of the sliding type, which permits the engine **to be connected with**, or **disconnected from**, the transmission, so that the car may, or may not, move **while the engine is running**.

The clutch is connected and disconnected from the **flywheel** of the engine by a **foot lever**. When disconnected from the flywheel of the engine, there is no connection between the engine and **rear-axle**.

When the clutch is connected with the flywheel of the engine, the power of the engine is transmitted to the rear-axle, if the gears of transmission are not in "neutral" position. If gears are in neutral position, the power of the engine will end at the end of the **secondary shaft of transmission**.

**If** the clutch is "in" and **the gears are meshed**, the course of the power from the crankshaft of the engine will then be through gears, through **drive-shaft, driving pinion**, large **bevel gear** on differential, through differential gears to **axle-hafts** and wheels. The car will move and the clutch will permit the car move faster or slower.

Clutches have two chief parts: one part (flywheel) is attached to the **crankshaft** of the engine, the other part (**disk or cone**) is attached to the main shaft of the transmission. When the two parts are separated, i.e. when the "clutch" is thrown "out" by clutch pedal, they are **independent** of each other and the engine can run without moving the car. The left-foot pedal on all cars of standard design is the "clutch pedal".

### Задание 14. Envelope. Готовимся к Интернет-экзамену

Here is an envelope. Match numbers *1 – 6* with the names of the parts of the envelope.

(1) Hanston Electrics,  
48 (2) Golden Road,  
Manchester (3) M11 4NS  
England

(4) The Music Shop,  
45 (5) Winston Road,  
London (6) WC2 10 H

The ZIP Code in the return address

The addressee's company name

The sender's name

The street name in the mailing address

The ZIP Code in the mailing address

The street name in the return address.

## Unit 4. COOLING SYSTEM REQUIREMENTS

### Задание 1

а) Определите с помощью словаря возможные варианты значения слов: **manufacturer, fan, cooling, flow, critical.**

б) Не прибегая к словарю, попытайтесь определить значение *применительно к контексту* слов и словосочетаний, вспоминая терминологию из пройденного материала, других учебных предметов и различных областей деятельности человека:

manufacturer, cooling system components, vehicle design, concept stage, optimum radiator location, basic details of radiators, problems, engineering aspect, the design and installation of radiators, optimum air flow, selection of cooling system, fan diameter, fan location, critical, efficient operation and economy, air flow testing, to maximize fan efficiency, to minimize turbulence.

## Задание 2

Отработайте произношение под руководством преподавателя и определите значение возможно большего количества слов из каждого столбика, учитывая варианты значения слов:

shroud	involve	flow	available	restriction
clearance	stage	installation	provide	grill(e)
guard	location	fan	improve	entrance
requirement	provision	critical	distribution	exit
tolerate	important	area	prior	shape
mode	cooler	core	spacer	detail

## Задание 3

Подберите соответствующий столбик значений к словам из Задания 2.

Доступный	кожух	вовлекать	поток	ограничение
обеспечивать	зазор	стадия	установка	решетка
улучшать	защита	место	вентилятор	вход
распределение	требование	обеспечение	критический	выход
предварительно	терпеть	важный	область	форма
распорка	тип	охладитель	сердечник	деталь

## Задание 4

Определите значения однокоренных глаголов и существительных. Вспомните грамматический материал, связанный с выполнением этого задания (словообразование, конверсия):

face - to face	move - to move
project - to project	space - to space
result - to result	shape - to shape
design - to design	increase - to increase
detail - to detail	guard - to guard
flow - to flow	

## Задание 5

Объясните причины изменения значений слов корневых и производных от них слов. Вспомните грамматический материал, связанный с выполнением этого задания.

Radiate, radiation, radiator  
 locate, local, location, located  
 provide, provider, provision, provided  
 distribute, distributor, distributing, distribution.

### Задание 6

Определите значения слов и отработайте их произношение под руководством преподавателя:

cooling system components, optimum radiator location, present state of the art, problems they face, frontal area, frontal area available, air distribution, decision-making, discharge pattern, doughnut shaped, radiator core, fan tip clearance, rubber sheet, fan guards, safety requirements, fan blades.

### Задание 7

Как изменится смысл предложения, если вместо пропуска будут последовательно подставлены **should be, is, must be, has to be, is to be, was**. Переведите варианты предложения. Вспомните грамматический материал, связанный с выполнением этого задания.

The manufacturer of cooling system components involved with vehicle design at the concept stage.

### Задание 8

Составьте из приведенных ниже слов (предлогов, артиклей и др.) возможные словосочетания из двух и/или более слов:

system, distribution, location, cooling, problems, fan, art, requirements, present, core, of, the, they, frontal, area, decision-making, blades, area, discharge, air, frontal, optimum, clearance, doughnut, fan, tip, pattern, available, shaped, radiator, components, face, state, rubber, fan, sheet, guards, safety, radiator.

### Задание 9

Дополните словосочетания, используя материал Заданий 1 и 2:  
frontal area \_\_\_\_\_, air \_\_\_\_\_, \_\_\_\_\_ - making,  
present \_\_\_\_\_ of the art, problems they \_\_\_\_\_, frontal \_\_\_\_\_,  
cooling system \_\_\_\_\_, optimum radiator \_\_\_\_\_,  
discharge \_\_\_\_\_, radiator \_\_\_\_\_, fan tip \_\_\_\_\_,  
doughnut \_\_\_\_\_, rubber \_\_\_\_\_, fan \_\_\_\_\_, safety \_\_\_\_\_,  
\_\_\_\_\_ blades.

### Задание 10

Упростите предложения, исключив слова, не влияющие на основную мысль предложения. Определите, какими словами выражены члены предложения (подлежащее, сказуемое, дополнение, обстоятельство, определение).

This can result in optimum radiator location and frontal area as well as necessary mounting provisions.

Among the most important engineering aspects are the design and installation of radiators and oil coolers for optimum cooling and air flow.

Fan tip clearance should be the minimum that can be tolerated without having the fan hit the shroud in any operational mode.

### Задание 11

Определите, какое грамматическое явление для этих предложений общее. Вспомните грамматический материал, связанный с выполнением этого задания.

The manufacturer should be involved with vehicle design

Every effort should be made by the vehicle designer

The fan should be spaced

Fan lip clearance should be the minimum

Fan guards should be as open as possible

They should be far from the fan blades and tips

The minimum open area required should be equal to the face area of the radiator.

### Задание 12

Составьте словарики незнакомых слов, выделенных в тексте 4 жирным шрифтом.

#### Text 4. COOLING SYSTEM REQUIREMENTS

The manufacturer of **cooling system components** should be involved with vehicle design at the **concept stage**. This can result in **optimum radiator location** and frontal area as well as necessary mounting provisions. The **present state of the art** provides the vehicle designer with the basic details of radiators, oil coolers, and the **problems they face**. Among the most important engineering aspects are the design and **installation** of radiators and oil coolers for optimum cooling and air flow.

Frontal area.

Selection of cooling system **frontal area**, fan diameter, and relative fan location are critical to efficient operation and economy. Systems with large frontal areas and fans reduce fan horsepower, noise, and vehicle system resistance because the air is better distributed and moves less rapidly. Every effort should be made by the vehicle designer to maximize the **frontal area available** for the cooling system. A good rule is that 20 percent more frontal area **provides** 10 percent more cooling with the same fan and fan speed.

Fan location.

The fan should be spaced 2-3 times its projected width from the radiator core **to improve** efficiency and air **distribution**, while reducing noise. Help also comes from mounting the fan on **spacers** and keeping it as far as possible from the engine. Air flow testing is desirable **prior to decision-making**.

Air distribution.

The **discharge pattern** of a fan is **doughnut shaped**; moving the fan away from the **radiator core** and engine and using a well-designed **shroud** to even out the velocity distribution: a 30 percent velocity increase raising cooling about 20 percent.

Fan considerations.

**Fan tip clearance** should be the minimum that can be **tolerated** without having the fan hit the **shroud** in any operational **mode**. To maximize fan efficiency, some vehicle manufacturers use close fitting **rubber sheet** on the fan shroud and let the fan cut its own clearance.

Fan shrouds.

Properly designed **venturi shrouds** normally result in greater air flow, but their effectiveness can be sharply reduced by restrictions of the inlet or discharge.

Fan guards.

**Fan guards** should be as open as possible while meeting the **safety requirements**.

They should be far from the **fan blades** and tips to minimize turbulence and maintain efficiency. An efficient guard can be made of circular steel wire rings or wire mesh.

Grills.

The minimum open area required should be equal to the face area of the radiator or the radiator and "side-by" air to oil cooler. Grills and side panels with high air flow restrictions can affect cooling by as much as 9 degrees Centigrade. Low restriction of both entrance and exit air is important.

### Задание 13

Найдите в тексте синонимы слов **inlet, increase, reduce**.

### Задание 14

Заполните пропуски в предложениях в соответствии с содержанием текста и переведите предложения.

The manufacturer of \_ system components should be involved with vehicle design at the \_\_\_\_\_ stage.

Among the most important engineering aspects are the design and \_\_\_\_\_ of radiators and oil coolers for \_\_\_\_\_ cooling and air \_\_\_\_\_.

Selection of cooling system \_ area, fan diameter, and relative fan location are \_\_\_\_\_ to efficient operation and economy.

Every effort should be made by the vehicle to maximize the frontal area \_\_\_\_\_ for the cooling system.

Air flow testing is desirable prior to decision-making.

Systems with large frontal areas and fans \_\_\_\_\_ fan horsepower, noise, and vehicle system \_\_\_\_\_ because the air is better \_\_\_\_\_ and moves less rapidly.

### Задание 15

Ответьте на вопросы. На основе ответов кратко перескажите основное содержание текста.

At what stage should the manufacturer be involved with the vehicle design?

What are the most important engineering aspects of cooling system.

What is critical to efficient operation and economy of cooling system.

What should be made by the vehicle designer?

What is desirable prior to decision-making?

Why do the systems with large frontal areas and fans reduce fan horsepower, noise, and vehicle system resistance?

### Text 4a. GEARBOX

When a bicyclist wants to race on a **level track**, he gears up his drive wheel with a larger **sprocket**, so that one revolution of the **crank** takes him further. Yet if he takes his wheel, with this large sprocket on the pedal shaft, out on the road where there are **hills**, he must get off and walk, or **exert an extra lot of power**.

The same principle applies to the automobile. For this reason the automobile is provided with four or five changes of gears. These gears are contained in a gearbox usually placed at the back of the **clutch**.

The principle, upon which all change-speed gears work, is the fact that when two **gear-wheels** or spur-gears are **meshed together**, the larger wheel turns more slowly than the smaller.

In the gear-box there are two shafts — the upper one coming from the engine through the clutch, and the lower one continuing to the **back axle**.

Each shaft is fitted with four or five gear wheels of different size.

Those on the upper shaft are fixed to the shaft itself, but those on the lower shaft are **able to slide** on a **keyway**, to right and left along the shaft. The lower shaft is square so the sleeve of the gear wheels can slide **backward** and **forward**, but they cannot revolve independently of the lower shaft.

In order to vary the speed of the car, it is only necessary to slide the gear wheels along the lower shaft **until** the correct two gears **come into mesh to form the gearing required**.



**Задание 16. Envelope. Готовимся к Интернет-экзамену**

Here is an envelope. Match 1 – 6 with the names of the parts of the envelope.

(1) Foreign Language Institute 555 (2) Deer Run Lane Aurora, (3) CO 80014	(4) Sandberg Educational Inc (5) Orchard Ridge Corporate Building Two, Fields Lane (6) Brewster, NY 10509
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The street name in the mailing address

The addressee's company name

The sender's company name

The street name in the return address

The town in the mailing address

The ZIP Code in the return address

## Unit 5. BENTLY . THE NEW GENERATION

### Задание 1

Отработайте произношение под руководством преподавателя и попытайтесь определить значения возможно большего количества слов из каждого столбика, вспоминая терминологию из пройденного материала, других учебных предметов и различных областей деятельности человека.

immense	armrest	rug
streamline	airbag	luxury
harness	fusion	pursuit
cockpit	exhilaration	thrusting

### Задание 2

Составьте из приведённых ниже слов возможные словосочетания из двух и/или более слов и переведите их.

Arms, shell, turnover, interior, exhilaration, radiator, restyled, air, extraction, maximum, luxurious, integrated, bumpers, line, surroundings, thoughtful, innovations, smooth, improvement, centre, thrusting, dam, controls, noticeable, console, appreciably, immaculate, balanced, temperature, control, ride- room, compartment, finely, fascia, layout, panels, rear, veneer, head.

### Задание 3

Определите значение словосочетаний и отработайте их произношение под руководством преподавателя:

the most refined automotive technology, world's finest sporting car, classic radiator shell, specially designed directional tyres, low profile tyres, assembled by hand, adaptive shift control system, a tilt adjustable steering wheel, easy entry and exit, in-car entertainment controls, side impact protection bars, antilock braking system, braking and cornering style, the car is kept stable and responsive, airbags are neatly housed, the driver information panel, alertness and concentration, economically designed seats, to appreciate the ultimate driving experience

### Задание 4

Составьте из приведенных ниже слов (предлогов, артиклей и др.) возможные словосочетания из двух и/или более слов.

Automotive, the, profile, technology, designed, refined, world's, most, entry, ultimate, adaptive, adjustable, shell, tilt, assembled, tyres, shift, directional, finest, car, classic, hand, specially, radiator, low, system, sporting, control, by, a, steering, tyres, easy, and, wheel, braking, exit, in-, entertainment, braking, controls, and, side, cornering, impact, kept, anti-, lock, and, stable, the, protection, style, car, is, bars, car, system, bags, driver, designed, responsive, air-, arc, the, seats, experience, information, housed, panel, and, neatly, concentration, driving, alertness, to, appreciate, the, economically

### Задание 5

Дополните словосочетания и переведите их на русский язык. Используйте материал Заданий 1 и 4.

radiator \_\_\_\_\_, \_\_\_\_\_ improvement, \_\_\_\_\_ panels, rear \_\_\_\_\_,  
\_\_\_\_\_ interior, turnover \_\_\_\_\_, \_\_\_\_\_ innovations,  
fascia \_\_\_\_\_,  
temperature \_\_\_\_\_, thrusting \_\_\_\_\_, assembled by \_\_\_\_\_.

### Задание 6

Отработайте произношение слов и словосочетаний:

immense, cockpit, fusion, exhilaration, thrusting, fascia, luxury, pursuit, luxurious surroundings, entertainment, appreciably, alertness and concentration, economically designed seats

### Text 5. BENTLEY. THE NEW GENERATION

The **new** Bentley TURBO R. British elegance that confirms the **immense** power waiting to be released. The **most refined automotive technology**. The **world's finest sporting car**, sleek and streamlined, safe and quiet, comfortable and elegant and yet so powerful. Delivering the most exiting driving experience in luxurious surroundings.

The new proportions of the **classic radiator shell** combined with a **restyled air dam** to **streamline** the front, while the **integrated bumpers** and colour coded sills continue the **smooth line** around to the rear balance.

By adding new and larger 17-inch road wheels with **specially designed directional tyres** **TURBO R** gains a **noticeable improvement** in performance and **responsiveness**. While Brooklyn's with its new 16-inch road wheels and **low profile tyres** enjoys improved **handling**, performance and above all comfort.

Ever since the 1920s when W.O. Bentley first produced a series of motor cars which swept the board of Le Mans, the Bentley marque has stood for engineering innovation, always striving to provide their owners with the maximum driving pleasure. The mighty 6.75 litre V8 Bentley engine delivers real exhilaration.

Still **assembled by hand** to tolerances of tenth thousandth of an inch, these **finely balanced** engines **harness** the most advanced electronic management and control systems.

The new **adaptive shift control system** for **turnover arms** changes the transmission panel to the style of driving and allows a **maximum extraction** of Bentley power and sporting exhilaration.

To enjoy such performance in **luxurious surroundings** is the unique Bentley experience and the subtlest **cockpit** now sports some **thoughtful innovations**. A tilt **adjustable steering wheel** swings up to allow **easy entry and exit** when the door is opened or the key removed from the ignition.

The new **centre console** and the **fascia layout** present the driver with absolute control. A new centre **armrest** now houses the CD multichanger as well as the telephone. New **veneer panels** reveal the new **in-car entertainment controls**. The new centre console also provides independent air conditioning to the **rear compartment**. A new seat design has improved comfort and support, while providing increased **head room**.

So many Bentley engineering advances have contributed to safer driving throughout the history of motoring. Safety derived through immense power and reserve for safer overtaking. **Side impact protection bars pioneered by** the company in 1981. **Antilock braking systems** perfectly suit the Bentley's high performance.

The most sensitive adaptive **ride control** that monitors the acceleration, **braking and cornering style** every one hundredth of a second to ensure the **car is kept**

**stable and responsive**. Full-sized driver and passenger **airbags** are **neatly housed** in the **immaculate interior**. The **driver information panel** is still one of the most **sophisticated** such instrument outside the world of aviation.

And the dual level air conditioning system designed to maintain driver **alertness and concentration** through carefully balanced **temperature controls**,

**allowing** cooler air to flow at head level, with warmer stream soothing the feet as they rest on Wilton carpets and lamb wool rugs. The commanding driving position **supported** by the new **economically designed seats** gives the Bentley's driver the safest control. This combination of safety and powerful elegance, this **fusion** of **thrusting exhilaration** with traditional **luxury** is the very latest development in the **pursuit** of Bentley's sporting excellence. To own the new Bentley is **to appreciate the ultimate driving experience**.

### Задание 7

На основе ответов на вопросы подготовьте краткий пересказ содержания текста.

How does the new Bentley TURBO R look like?

What kind of road wheels has the new Bentley?

How are the TURBO R Bentley engines assembled?

What innovations can you see inside the cockpit and the rear compartment of the car?

What engineering advances have contributed to safer driving of the car?

What gives the Bentley's driver the safest control?

### Задание 8

Определите значения однокоренных слов, объясняя причины изменения их значений. Вспомните грамматический материал, связанный с выполнением этого задания.

Assembly, assembled, assemble, assembling, assembles advance, advanced, advancement, advancing, advances adjust, adjustable, adjusted, adjuster, adjusting, adjustment drive, driver, driving, drives, driven, drove contribute, contribution, contributed, contributes, contributor refine, refinement, refining, refined, refiner, refines, refinery.

### Задание 9

Заполните пропуски в предложениях, используя подходящее слово из текста в соответствующей форме (лице, числе, времени, залоге и т. д.).

To own the new Bentley is to appreciate the ultimate \_\_\_\_\_ experience.

The most \_\_\_\_\_ automotive technology.

A tilt \_\_\_\_\_ steering wheel swings up to allow easy entry and exit when the door is opened or the key removed from the ignition.

So many Bentley engineering advances have \_\_\_\_\_ to safer driving throughout the history of motoring.

Still \_\_\_\_\_ by hand to tolerance of tenth thousandth of an inch, this finely balanced engine harnesses the most \_\_\_\_\_ electronic management and control system.

### **Задание 10**

На основе пройденного материала составьте диалог.

Один из студентов - представитель компании «Бентли». Рассказывая о фирме и об основных направлениях её работы, он старается проинформировать потенциального клиента об основных преимуществах модели «Бентли Турбо R».

Другой студент - потенциальный покупатель - старается получить как можно больше информации об этом автомобиле. При составлении диалога используйте текст и материал, представленный в предыдущих заданиях.

В диалоге обсудите следующие технические аспекты:

the way the new Bentley TURBO R looks like,  
the road wheels of the new Bentley,  
the way TURBO R Bentley engines are assembled,  
the innovations inside the cockpit and the rear compartment,  
engineering advances for safer driving of the car.

В ходе диалога используйте следующие вводные слова и разговорные фразы:

#### **а) для студента (student)**

Good morning!

Good afternoon!

Hello!

Let me introduce myself.

My name is \_\_\_\_\_

I am \_\_\_\_\_

I study at \_\_\_\_\_

I am interested in \_\_\_\_\_

I would like to ask you about \_\_\_\_\_

And what about \_\_\_\_\_

Can you describe me \_\_\_\_\_

Can you tell me about \_\_\_\_\_

What are the main characteristics of \_\_\_\_\_

Thank you for your help.

It was nice to meet you.

See you.

Good-bye.

#### **б) для инженера-автомобилиста (automotive engineer)**

Good morning!

Good afternoon!

Hello!

How can I help you?  
What can I do for you?  
Do you know that \_\_\_\_\_?  
Let me tell you about \_\_\_\_\_  
I would like to mention that \_\_\_\_\_  
The point is that \_\_\_\_\_  
Thank you for your coming.  
It was nice to meet you.  
Hope to see you soon.  
Good-bye.  
See you.

### Text 5a. TRANSMISSION OF POWER IN AUTOMOBILE

The power from the engine to the **drive wheels** is transmitted through the transmission which is composed of the following mechanisms: **Clutch** is a device which permits the engine to be connected with, or disconnected from, the transmission mechanisms, so that the car may, or may not, move **while the engine is running**.

**Gearbox** is a mechanism regulating the **motive power** of the engine, which is transmitted to the drive wheels of the automobile.

Through **drive shaft** power is transmitted from the engine to the rear-axle. It is located between the gearbox and the rear-axle.

**Differential** is the device that permits the rear wheels to revolve at different speeds **independently one of the other**.

**Front-axle and rear-axle suspensions** serve to support the automobile.

**The front suspension** of a car carries about 80% of the weight of the engine, and must at the same time withstand the **shocks and jerk jars** that it receives through the **steering wheels**; it must, therefore, **be strong and stiff**. It also carries about 20 to 40 percent of the weight of the entire car.

The center of the axle is **bent down**, so that it is the lowest point of the car **except** the wheels. This is done **in order to** protect the mechanism from being struck by high spots in the road. A rock or a stump, standing up high enough **to hit the flywheel**, will first strike the axle which is strong enough **to withstand a blow** that could easily **damage** the engine.

The **steering spindles** are that part of the front axle on which the front wheels revolve. They are made of **nickel steel, heat-treated**. The steering spindles are **fitted with** either roller or **ball bearings**. The **steering knuckle** is that part which fits into the **joke** of the axle.

#### **The rear axle suspension**

There are two types of rear axles : "**dead axle**" and "**live axle**". The rear axle carries from 60 to 80% of the car weight. Dead axles are **stationary**, with the wheels **running free** on the ends of the axle. Live rear axles is the name given to axles that **revolve with the wheels**, and are known as "plain" live axle,

"semi-floating" axle, "three-quarter floating" axle, "full-floating" axle. The axle shafts on a "live" axle are in two sections. The inner end is connected with the **differential gear**; the outer ends are connected to the **drive wheels**. It is necessary to support the axle parts in a strong **housing**. Nowadays **multilink rear suspension** is standard.

### Задание 11. Готовимся к Интернет-экзамену

#### *Memos*

#### *Thesaurus*

**Memo** is a short note that you send to someone you work with.

A **memo** is an internal company document that is normally impersonal and formal in style. It can be sent to one person or a number of people within the organization and may be put on a notice board. It should :

- state who it is to
- state who it is from
- have a title explaining what it is about,
- and a date
- state the purpose in the opening paragraph
- be as brief as possible.

Read the **memo** and answer the questions

1. What is the purpose of the memo?
2. How will apprentices be chosen?
3. What should the team leaders in the Maintenance Department do now?

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Memo

To: Maintenance Department

From: Training Manager

Subject: Six Apprenticeship places starting  
September 2010

Date: 14 May 2010

A decision has been made by senior management that apprenticeships for six Maintenance Technicians will be made available to start in September 2010.

Advertisements inviting applicants will be placed in national newspapers in June. Interviews will be arranged for the week beginning 3 July.

The apprenticeships will be for three years and will consist of on-the-job training under supervision in the Maintenance Department and day release one day a week to the local college.

Would team leaders please attend a meeting in room D on Thursday 17 May at 9 a.m. to discuss possible skilled supervisors for the apprentices and the apprentices' work rotation.