



普通高等教育“十二五”规划教材·汽车专业



# 汽车专业英语

主 编 李翠香 高艳强



西北工业大学出版社  
NORTHWESTERN POLYTECHNICAL UNIVERSITY PRESS



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**【内容简介】** 本书以中英文对照的方式介绍了当今主流汽车技术及其维护保养知识,其主要内容包括汽车发展史、汽车的基本组成、汽车发动机、冷却和点火系统、气门和发动机燃油系统、制动系统和电子燃料喷射系统、润滑和启动系统、汽车维修与维护等。

本书图文并茂,信息量大,可作为高等院校汽车应用专业的教材,也可作为汽车工程技术人员、汽车维修技师及车主学习汽车专业英语知识的参考书。

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# 前言

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近年来,随着我国汽车工业的迅速发展,我国的汽车产量和销售量迅速增大,汽车技术也是日新月异,随之而生的很多最新的技术或管理文件都是英文版的,致使我们的维修工作人员在查阅资料时遇到很多困难。所以,掌握必要的汽车类英语已经成为相关研究人员和工作人员的一种必然需要。

本书依照《高职高专教育英语课程教学基本要求(试行)》的标准,从培养高级应用型人才的总体目标以及教学的实际情况出发,结合企业工作实际,力求向学生提供未来工作岗位所需要的专业英语知识,培养学生在实际工作岗位上运用汽车专业英语的能力。

本书每个单元均按照以下内容进行编排,特色鲜明。

第一部分“实用阅读”(Practical Reading),包括两篇文章,内容力求反映汽车专业方面的最新知识。图文并茂,便于理解。每篇文章后有相关的单词及短语,便于参阅。

第二部分“进一步学习”(Further Development),主要讲科技英语语法知识,即翻译技巧的讲解。了解科技英语翻译技巧有助于学生更好的理解相关英语类文章。

第三部分“阅读材料”(Reading Material),选择与汽车英语相关的实用性较强的文章供学生阅读,扩大了知识面及词汇量。

第四部分“轻松一笑”(Just for Laugh),让学生轻松学习,提高学习兴趣,在循序渐进中掌握相关的知识点,同时又可从不同角度提高学生的阅读及文章理解能力。

课后所附的练习题可帮助学生记忆单词、理解课文,并提高翻译能力。此外,附录部分也提供了大量的常用汽车专业缩略语,文章翻译及习题参考答案。所有这些都有助于扩大知识面,更好地学习。

本书由李翠香、高艳强担任主编。具体分工如下:李翠香编写第1到



第4单元,高艳强编写第5到第8单元。

■ 本书在编写过程中参阅了一些重要文献资料、同行专家的教材专著以及多家知名网站的网络资源,在此谨向有关作者及单位表示衷心的感谢。





由于水平有限和编写时间仓促,书中难免存在错误和不足之处,敬请同行、专家和广大读者批评指正。

编 者


2011年12月



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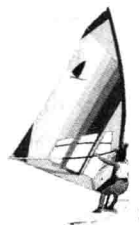
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# Unit 1

## Automobile Overview



### Part I Practical Reading

#### Passage A

### Development of the Automobile

The automobile industry is one of the most important industries affecting not only the economy but also the culture of the world. The manufacture, sale and servicing of automobiles have become the key elements of industrial economy. Automobiles revolutionized transportation in the 20th century, changing thoroughly the way people live, travel and do business.

The modern automobile, as you know, evolved from the horse-drawn carriage which was gradually replaced in the early part of last century early automobiles even looked like carriages. As the automobile made a place for itself in our daily lives, it also became more and more expensive to purchase, use, and maintain. Automobile expenses now account for a substantial portion of most family budgets. In fact, one out of every four retail sales dollars goes for an automotive-related purchase. Knowledge of the automobile is equally important for anyone considering employment in the automotive purchase.

Automobiles are classified by size, style, number of doors and intended use. The typical automobile, also called a car, auto, motorcar and passenger car, has four wheels and can carry up to five people including a driver. Vehicles designed to carry more passengers are called vans, minivans, omnibuses or buses. Those used to carry cargo are called pickups or trucks, depending on their size and design. Sport-utility vehicles, also known as SUVs, are designed for driving in mud or snow.

Today automobiles production has grown from small workshops making simple horseless carriages to international corporations that mass-produce advanced automobiles. Automobiles are the products of centuries of innovations and improvements.



### Steam-powered vehicles

In the 15th century, Italian inventor Leonardo da Vinci envisioned the possibilities for power-driven vehicles. By the late 17th century, English physicist Sir Isaac Newton had proposed a steam carriage, and in 1769 the French army captain Nicholas-Joseph Cugnot actually built a steam-powered, three-wheeled tractor that was used to haul military equipment at the speed of 2.5 miles per hour. Later, he designed another vehicle to carry people. Other inventors made many improvements to vehicles in the following several decades. Steam-powered stagecoaches were in regular service in many towns in Britain in the early 1800s. Half a century later, the popularity of steam vehicles began to decline because they were dangerous to operate and difficult to maintain. (See fig. 1-1)

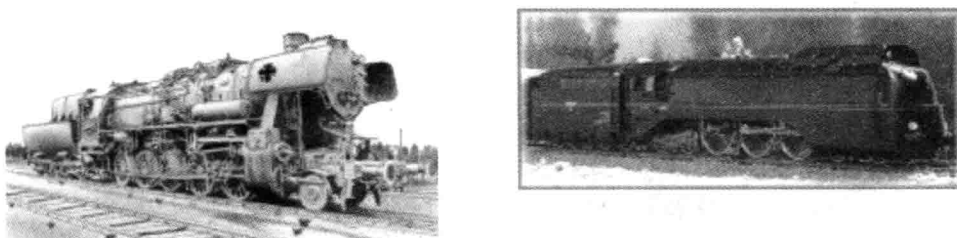


Fig. 1-1 Steam-powered Vehicles

### Electricity-powered vehicles

From 1832 to 1839, Scottish inventor Robert Anderson designed a more practical vehicle that used a battery to power a small motor. This was hailed as a breakthrough, even though this vehicle was still very slow and often needed to stop for recharge. But the idea of electricity-powered vehicles did catch on. Streetcars and trams using electricity for power became the most popular transportation mode of choice in Europe and the US in the mid 1800s. (See fig. 1-2)

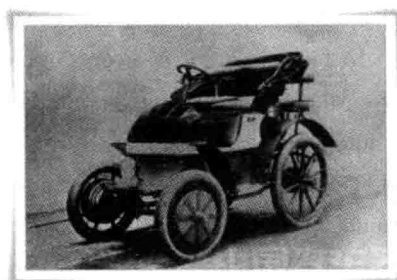


Fig. 1-2 Electricity-powered Vehicle

### Gasoline-powered vehicles

It was the invention of the gasoline-powered engine that really brought reliable and workable automobiles to the world. Gasoline-powered engines were not new; some of the first designs could be dated back to the 1700s. Some inventors attempted to make a wagon car or a carriage





run by a motor, but with moderate success.

In 1885, Karl Benz built the first three-wheeled gasoline-powered car in Germany. In the following years, the milestone vehicle was built by Gottlieb Daimler, another German. He perfected the two-cylinder gasoline engine and attached it to the stagecoach, thereby producing the first four-wheeled motor vehicle in the world. By the early 1900s, motor-powered vehicles had become more popular than any other type of vehicles.

## The first vehicle workshop

In 1889, former woodworkers Rene Panhard and Emile Levassor in France set up the first workshop that built complete motor vehicles. They made each new car a little bit different from its predecessors for years. Cars were refined during processing. Improvements included moving the engine to the front of the vehicle and designing a rear-wheel drive for better control of the vehicle.

## Mass-produced vehicles

In 1913, Henry Ford began making automobiles on a moving conveyor line in his factories. He realized that efficient mass production could lower car prices, making cars affordable for the average person, thus creating a huge market. This was a smashing success. By 1916 annual US auto production reached one million units, a level not reached by any other country until about 40 years later in England.

Today, auto-making has become the world's largest manufacturing activity, with nearly 58 million new vehicles built each year worldwide. By some estimates, for every job created on the automobile assembly line, three to four jobs are created in the automobile parts industry. The automobile industry is surely an important source of employment and transportation for billions of people. The 1900s can be called the Age of Automobile, and cars will not doubt continue to shape our culture and economy well in the 21st century.

## New Words

manufacturer	[ˌmænjuˈfæktʃərə]	n.	制造商; 厂商
automobile	[ˈɔ:təməbi:l]	n.	汽车
revolutionize	[ˌrevəˈlu:ʃənaiz]	vt.	在……方面引起突破性变革
size	[saiz]	n.	(指车辆的)大小; 尺寸
style	[stail]	n.	(指车辆的)型号
door	[dɔ:]	n.	(指车辆的)车门
van	[væn]	n.	货车
minivan	[ˈminivæn]	n.	小型货车
omnibus	[ˈɒmni,bəs]	n.	公共汽车



pickup	[ 'pɪkʌp ]	<i>n.</i>	皮卡, 小卡车
truck	[ trʌk ]	<i>n.</i>	卡车
workshop	[ 'wɜ:kʃɔ:p ]	<i>n.</i>	车间; 工场
innovation	[ ,ɪnəʊ'veɪʃn ]	<i>n.</i>	创新, 革新
vehicle	[ 'vi:ɪk(ə)l ]	<i>n.</i>	车辆; 交通工具; 运载工具
haul	[ hɔ:l ]	<i>vi.</i>	牵引; 拖, 拉
stagecoach	[ 'steɪdʒkəʊtʃ ]	<i>n.</i>	公共马车; 驿站马车
battery	[ 'bætəri ]	<i>n.</i>	电池, 蓄电池
motor	[ 'məʊtə ]	<i>n.</i>	发动机, 马达
dangerous	[ 'deɪndʒərəs ]	<i>adj.</i>	有危险的, 危险的
recharge	[ ri:'tʃɑ:dʒ ]	<i>vt.</i>	再充电
streetcar	[ 'stri:t, ka: ]	<i>n.</i>	有轨电车
tram	[ træm ]	<i>n.</i>	电车轨道; 煤车
predecessor	[ 'pri:dɪsəsə ]	<i>n.</i>	前任, 前辈; (被取代的) 原有事物, 前身
worldwide	[ 'wɜ:ldwaɪd ]	<i>adj.</i>	全世界的, 世界范围的
estimate	[ 'estɪmeɪt ]	<i>vt. &amp; vi.</i>	估计; 评价, 评估
mass	[ mæs ]	<i>n.</i>	大量, 大批; 众多
refine	[ ri'faɪn ]	<i>vt.</i>	精炼; 精制; 使纯净
smashing	[ 'smæʃɪŋ ]	<i>adj.</i>	极好的; 轰动的; 粉碎的
industry	[ 'ɪndəstri ]	<i>n.</i>	工业, 制造业
transportation	[ ,træns'pɔ:t'eɪʃən ]	<i>n.</i>	运送, 运输; 运输工具
replace	[ ri'pleɪs ]	<i>vt.</i>	取代, 代替; 更换, 替换, 更新
classify	[ 'klæsɪfaɪ ]	<i>vt.</i>	分类; 归类
cargo	[ 'kɑ:gəʊ ]	<i>n.</i>	货物(量)
improvement	[ ɪm'pru:vmənt ]	<i>n.</i>	增加或修改; 改进, 改善, 改良
advanced	[ əd'vɑ:nst ]	<i>adj.</i>	超前的, 先进的; 高级的, 高等的
inventor	[ ɪn'ventə ]	<i>n.</i>	发明家, 发明者
physicist	[ 'fɪzɪsɪst ]	<i>n.</i>	物理学家
propose	[ prə'pəʊz ]	<i>vt. &amp; vi.</i>	提议; 建议

## Phrases and Expressions

automobile industry

汽车工业





industrial economy	工业经济
horse-drawn carriage	马车
sport-utility vehicle	运动型汽车
steam-powered vehicles	蒸汽机车
electricity-powered vehicle	电动汽车
catch on	被(人)接受,流行起来
two-cylinder gasoline engine	双缸汽油发动机
gasoline-powered vehicles	汽油车
transportation mode	出行方式
automobile assembly line	汽车装配线
moving conveyor line	流水线
wagon car	火车
rear-wheel drive	后轮驱动汽车
mass production	批量生产

## Notes to the Passage

1. The manufacture, sale and servicing of automobiles have become the key elements of industrial economy. Automobiles revolutionized transportation in the 20th century, changing thoroughly the way people live, travel and do business.  
汽车制造、销售及售后服务成为工业经济的重要组成元素。汽车引发了 20 世纪交通运输业的革命,彻底改变了人们生活、旅行及经商的方式。  
changing thoroughly the way people live, travel and do business 现在分词做状语,放在句末。
2. As the automobile made a place for itself in our daily lives, it also became more and more expensive to purchase, use, and maintain. Automobile expenses now account for a substantial portion of most family budgets. In fact, one out of every four retail sales dollars goes for an automotive-related purchase.  
随着汽车在我们日常生活中取得一席之地,汽车购买、使用和维修变得越来越昂贵。汽车消费占用了大多数家庭绝大部分财政预算。实际上,四分之一的家庭花费用在了与汽车相关的产品上。  
As 引导时间状语从句,可译为“随着……”。
3. Today automobiles production has grown from small workshops making simple horseless carriages to international corporations that mass-produce advanced automobiles.  
今天,汽车生产已经从制造简易老式汽车小作坊发展为大规模生产高级汽车的跨



国公司。

本句使用的是现在完成时态,由 has + 过去分词 grown 构成。

4. By the late 17th century, English physicist Sir Isaac Newton had proposed a steam carriage, and in 1769 the French army captain Nicholas-Joseph Cugnot actually built a steam-powered, three-wheeled tractor that was used to haul military equipment at the speed of 2.5 miles per hour.

到了 17 世纪晚期,英国物理学家牛顿提出蒸汽动力车辆的建议。1769 年,法国陆军上尉尼古拉斯·古诺真正建造了一辆蒸汽动力牵引的三轮拖拉机,该车以 2.5 mile/h 的速度拖运军事装备。

5. He perfected the two-cylinder gasoline engine and attached it to the stagecoach, thereby producing the first four-wheeled motor vehicle in the world.

他改进了双缸汽油发动机,并把它安装在一辆公共汽车上,从而造出了世界上第一辆四轮机动车。

6. In 1889, former woodworkers Rene Panhard and Emile Levassor in France set up the first workshop that built complete motor vehicles. They made each new car a little bit different from its predecessors for years.

1889 年,早先从事伐木工作的雷纳·潘哈德和埃米尔·拉瓦索在法国成立了第一家汽车整车制造厂。几年中,他们制造的每一辆新车都与以前的车稍有区别。

## Exercise

**Exercise I.** Mark the following statements with T (True) or F (False) according to the passage.

1. Half a century later, the popularity of steam vehicles began to decline because they were dangerous to operate and the high cost of maintenance.
2. In the 15th century, Italian inventor Leonardo da Vinci envisioned the possibilities for power-driven vehicles.
3. From 1832 to 1839, English physicist Sir Isaac Newton designed a more practical vehicle that used a battery to power a small motor.
4. In 1885, Karl Benz built the first three-wheeled gasoline-powered car in Germany and he perfected the two-cylinder gasoline engine and attached it to the stagecoach, thereby producing the first four-wheeled motor vehicle in the world.
5. In 1889, former woodworkers Rene Panhard and Emile Levassor in France set up the first workshop that built complete motor vehicles.





## Exercise II . Translate the following phrases or words into Chinese.

1. automobiles production \_\_\_\_\_
2. two-cylinder gasoline engine \_\_\_\_\_
3. family budget \_\_\_\_\_
4. transportation mode \_\_\_\_\_
5. electricity-powered vehicle \_\_\_\_\_
6. SUV \_\_\_\_\_
7. four-wheeled motor vehicle \_\_\_\_\_
8. international corporation \_\_\_\_\_

## Exercise III . Translate the following phrases or words into English.

1. 蒸汽机车 \_\_\_\_\_
2. 电动汽车 \_\_\_\_\_
3. 马车 \_\_\_\_\_
4. 汽车工业 \_\_\_\_\_
5. 公共马车 \_\_\_\_\_
6. 有轨电车 \_\_\_\_\_
7. 制造商 \_\_\_\_\_
8. 型号 \_\_\_\_\_

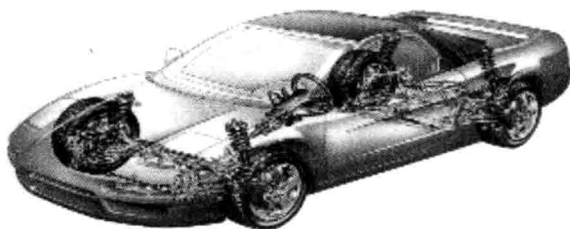
## Exercise IV . Translate the passage into Chinese.

Today, auto-making has become the world's largest manufacturing activity, with nearly 58 million new vehicles built each year worldwide. By some estimates, for every job created on the automobile assembly line, three to four jobs are created in the automobile parts industry. The automobile industry is surely an important source of employment and transportation for billions of people. The 1900s can be called the Age of Automobile, and cars will not doubt continue to shape our culture and economy well in the 21st century.



## Passage B

# Basic Components of the Automobile



Today's average car contains more than 15,000 separate parts that must work together. These parts can be grouped into four major categories: engine, body, chassis and electrical equipments, as shown in Fig. 1-3.

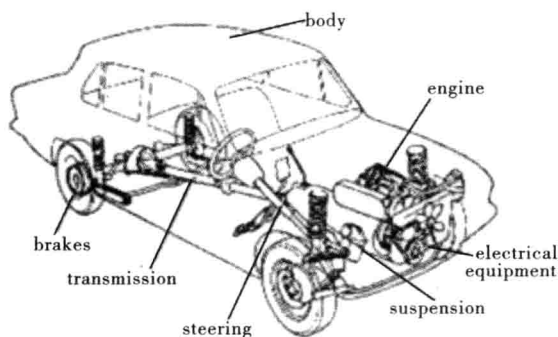


Fig. 1-3 Layout of a Modern Automobile

### Engine

The engine, which is sometimes called powerplant, is a machine that converts heat energy into mechanical energy. The engine makes the car go by using the explosive power of a mixture of air and fuel. Generally, an automobile is operated by internal combustion engine. The automobile engines can be classified according to different aspects, and the engine system that enable the engine to start and continue to operate are as follows: starting system, fuel system, ignition system, cooling system, lubricating system, and exhaust system. These are the system for petrol engines. Diesel engines have similar systems except for the fuel and ignition systems. Some parts of the systems are built into the engine, some parts are attached to the engine and other parts are located on the body panels in the engine compartment. (See fig. 1-4)



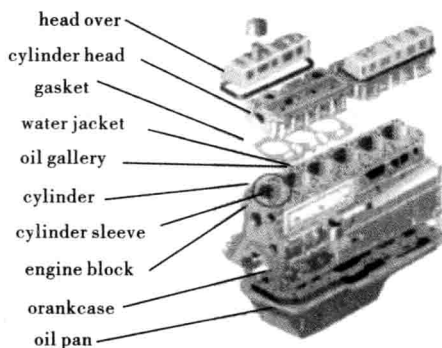


Fig. 1-4 Engine Block Cylinder Head

The engine acts as the power unit. The internal combustion engine is most common; this obtains its power by burning liquid fuel inside the engine cylinders. There are two types of engines: gasoline engine and diesel engine. Both engines are called heat engines; the burning fuel generates heat which causes the gas inside the cylinder to increase its pressure and supply power to rotate a shaft connected to the transmission.

All engines have fuel, exhaust, cooling, and lubrication systems. Gasoline engines also have an ignition system. The ignition system supplies the electric spark to ignite the air-fuel mixture in the cylinders. The automobile supplies all the electricity it needs through its electrical system. The fuel system stores liquid fuel and delivers it to the engine. The fuel is stored in the tank, which is connected to a fuel pump by a fuel line. The fuel is mixed with air to form a combustible mixture in the carburetor, the manifold or the cylinders themselves.

The cooling system removes excessive heat from the engine. The temperature in engine combustion chambers is about 2,000 °F (1,094 °C). Since steel melts at around 2,500 °F (1,354 °C), this heat must be carried away to prevent engine damage. Air and coolant are used to carry away the heat.

The lubrication system is important in keeping the engine running smoothly, and motor oil is the lubricant used in the system. To keep this system working efficiently, oil filters and motor oil must be changed regularly. All other moving parts in an automobile must also be lubricated.

### Body

The body and frame section of the automobile is the basic foundation of the vehicle. All other components and systems are attached to the body and frame. There are two types of body and frame configurations. One type is the separate body and frame construction which has been used for a long time. The second type is the unitized one with the body and frame in one unit which is used in most cars today. The body is made from rolled sheet steel and designed to provide the automotive total rigidity in bending and torsion. In the case of collision, it is intended to resist and minimize intrusions into the passenger space. These sections can further fall into a lot of assemblies and parts, such as the hood, trunk lid, the fenders, the roof panels, the



door, the dashboard, windows, windshield wipers, grille, the bumpers and the luggage compartment.

An automobile body provides a protective covering for the engine, passengers and cargo. The body is designed to keep passengers safe and comfortable. The body styling provides an attractive, colorful, modern appearance for the vehicle. It is streamlined to lessen wind resistance and to keep the car from swaying at high driving speeds.

A sedan (See fig. 1-5) has an enclosed body with a maximum of 4 doors to allow access to the passenger compartment. The design also allows for storage of luggage or other goods. Multi-purpose vans (MPV) can be based on common sedan designs or redesigns so that maximum cargo space is available. Usually it has stronger chassis components and suspension than a sedan to support greater gross vehicle mass.

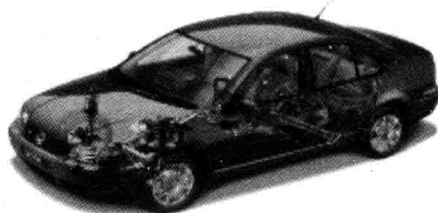


Fig. 1-5 Sedan

### Chassis

The chassis is a framework used to assemble auto components on it. The chassis itself is divided into four systems like transmission, suspension, steering and brake systems. A large number of designs in pressed-steel frame form a skeleton on which the engine, wheel, axle assemblies, transmission, steering mechanism, brakes, and suspension members are mounted.

The transmission system comprises clutch, transmission, drive shaft, rear axle, differential and the driving road wheels.

The clutch or torque converter has the task of disconnecting and connecting the engine's power from engine to the driving wheels of the vehicle. This action may be manual or automatic.

The main purpose of the transmission or gearbox is to provide a selection of gear ratios between the engine and driving wheels, so that the vehicle can operate satisfactorily under all driving conditions. Gear selection may be done manually by the driver or automatically by a hydraulic control system.

The function of the propeller shaft is to transmit the drive from the transmission to the input shaft of the rear axle and differential assembly. Flexible joints allow the rear axle and wheels to move up and down without affecting operation. The rear axle and differential unit transmit the engine's rotational power through 90° from propeller shaft to axle shaft and road wheels. A further function is to allow each driving wheel to turn at a different speed. The third function is to introduce another gear ratio for torque multiplication.

The function of the steering system (Fig. 1-6) is to provide the driver with a means for