

面向

21
世纪

中国高等职业技术教育研究会推荐
机电类专业高职高专规划教材

汽车专业英语

主编 黄立新
主审 蒋国平



西安电子科技大学出版社
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2006

内 容 简 介

本书是汽车专业高职高专学生的专业英语教材,目的是培养学生阅读和翻译本专业英语资料的能力。选材上涉及汽车发展史、汽车发动机、底盘、汽车电器、汽车保养、汽车商务、汽车文化等内容,共七部分,文章的难易程度适合于高职教学。安排上有课文、生词、注释和阅读材料。书后附有课文的译文。本书既体现了汽车知识的系统性、完整性,也体现了极其鲜明的现代汽车行业的新发展以及汽车新概念、新技术。

本书可作为高职高专汽车专业英语教学的教材,也适合作为培训教材。

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序

进入 21 世纪以来,随着高等教育大众化步伐的加快,高等职业教育呈现出快速发展的形势。党和国家高度重视高等职业教育的改革和发展,出台了一系列相关的法律、法规、文件等,规范、推动了高等职业教育健康有序的发展。同时,社会对高等职业教育的认识在不断加强,高等技术应用型人才及其培养的重要性也正在被越来越多的人所认同。目前,高等职业教育在学校数、招生数和毕业生数等方面均占据了高等教育的半壁江山,成为高等教育的重要组成部分,在我国社会主义现代化建设事业中发挥着极其重要的作用。

在高等职业教育大发展的同时,必须重视内涵建设,不断深化教育教学改革。根据市场和社会的需要,不断更新教学内容,编写具有鲜明特色的教材是其必要任务之一。

为配合教育部实施紧缺人才工程,解决当前机电类精品高职高专教材不足的问题,西安电子科技大学出版社与中国高等职业技术教育研究会在前两轮联合策划、组织编写了“计算机、通信电子及机电类专业”系列高职高专教材共 100 余种的基础上,又联合策划、组织编写了“数控、模具及汽车类专业”系列高职高专教材共 60 余种。这些教材的选题是在全国范围内近 30 所高职高专院校中,对教学计划和课程设置进行充分调研的基础上策划产生的。教材的编写采取在教育部精品专业或示范性专业(数控、模具和汽车)的高职高专院校中公开招标的形式,以吸收尽可能多的优秀作者参与投标和编写。在此基础上,召开系列教材专家编委会,评审教材编写大纲,并对中标大纲提出修改、完善意见,确定主编、主审人选。该系列教材着力把握高职高专“重在技术能力培养”的原则,结合目标定位,注重在新颖性、实用性、可读性三个方面能有所突破,体现高职高专教材的特点。第一轮教材共 36 种,已于 2001 年全部出齐,从使用情况看,比较适合高等职业院校的需要,普遍受到各学校的欢迎,一再重印,其中《互联网实用技术与网页制作》在短短两年多的时间里先后重印 6 次,并获教育部 2002 年普通高校优秀教材奖。第二轮教材共 60 余种,在 2004 年已全部出齐,且大都已重印,有的教材出版一年多的时间里已重印 4 次,反映了市场对优秀专业教材的需求。本轮教材预计 2006 年全部出齐,相信也会成为系列精品教材。

教材建设是高职高专院校基本建设的一项重要工作,多年来,各高职高专院校都十分重视教材建设,组织教师参加教材编写,为高职高专教材从无到有,从有到优、到特而辛勤工作。但高职高专教材的建设起步时间不长,还需要做艰苦的工作,我们殷切地希望广大从事高职高专教育的教师,在教书育人的同时,组织起来,共同努力,为不断推出有特色、高质量的高职高专教材作出积极的贡献。

中国高等职业技术教育研究会会长

2005 年 10 月

李家亮

面向 21 世纪

机电类专业高职高专规划教材

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前 言

汽车曾是多少人的梦想，今日已不再遥不可及。伴随着汽车工业的发展，买车、学车、修车、赛车不断升温。汽车以其前所未有的速度，改变着人们的生活，吸引着越来越多人的热切目光。在汽车日益普及，逐步成为人类生活新伙伴的今天，我们为那些热爱汽车的高职学生以及汽车行业的从业人员献上此书。

“创新是一个民族进步的灵魂，是国家兴旺发达的动力”，当然也是高等职业技术教育发展的动力，更是高职高专教材建设永远不变的指导方针。我们要改革传统的课程体系，使教材系统化，尤其要使高职的专业英语教材面向专业、面向运用、面向未来。本书在原文的选择上正是体现这一指导思想的，一方面考虑汽车知识的系统性，另一方面也体现了极其鲜明的现代汽车行业的新特色。

书中内容涉及汽车发展史、汽车发动机、汽车底盘、汽车电器、汽车保养、汽车商务和汽车文化，共七个部分。参考学时 35 学时。本书名词术语符合国家相关规范的要求，力求做到文字准确、简练、流畅。内容安排尽量照顾到汽车知识的系统性、趣味性和时代特色。“网上冲浪”和“学习资源”供学习者拓展知识所用。

本书由上海工程技术大学高职学院黄立新主编，上海交通职业技术学院的朱建柳、沈轶娜、张已冬、杨杰合作编写，编写成员分工如下：沈轶娜编写第一部分；朱建柳编写第二、六部分；黄立新编写第三、五、七部分；张已冬、杨杰编写第四部分。

注：及物动词用 vt. 标注，不及物动词用 vi. 标注，既是及物又是不及物动词时用 v. 标注。

作 者
2006年4月

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PART I HISTORY OF AUTO

学习目标



通过本章的学习，你应当能够：

- ◆ 了解汽车的历史、汽车的典故和汽车的相关知识，掌握有关词汇、词组。
- ◆ 掌握汽车英语的习惯表达方法。
- ◆ 能查阅与汽车知识有关的英文资料。
- ◆ 能借助字典翻译汽车历史方面的文章。

1.1 Early Adventures with the Automobile

The “horseless carriage” made its debut at Chicago’s Columbian Exposition in 1893. Crude, no more than a two-seated buckboard powered by an electric motor, none-the-less the exhibit excited its audience. Within fifteen years the automobile industry was firmly established, producing roomy, comfortable cars capable of traveling sixty miles per hour. First seen as a toy for the rich, the car began to be taken more seriously as its advantages over the horse became obvious.

Driving in these early days was always a challenge. Dirt roads that the horse found perfectly acceptable became impassable quagmires of mud for the automobile. No gas stations dotted the roadscape.

Despite these challenges, it was not long before the automobile transformed itself from novelty to necessity. Although many would continue to criticize this “new fangled” mode of transportation, one thing was certain: there would be no turning back. The automobile became a fixture of American culture and our infatuation with the car blossomed into a love affair.

Winning the Vanderbilt Cup, 1906

In 1904, W.K. Vanderbilt, established the “Vanderbilt Cup” to promote the sport of automobile racing. The event was originally run on Long Island over public roads. Crowds lined the raceway without benefit of any barriers. Drivers began the race at timed intervals with the first to cross the finish in the fastest time declared the winner. In 1906, Louis Wagner won the race driving a Darracq.

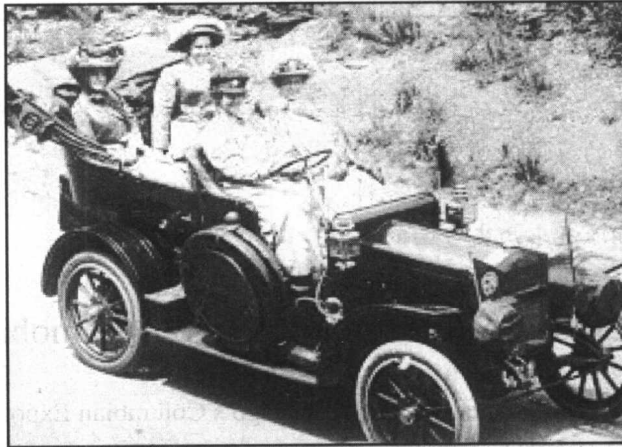
Motoring to Virginia, 1907

In 1907, an intrepid group of adventurers drove from New York City to Jamestown, Virginia to attend the Jamestown Exposition. Their journey lasted three days and took them through New

York, Pennsylvania, Delaware, Maryland and Virginia.

Alice Ramsey, first woman to drive coast-to-coast, 1909 (See Fig.1.1.1)

Nelson Jackson was the first to motor coast-to-coast in 1903. Two dozen other pioneers matched his feat over the next five years, but none was a woman. This honor fell to Alice Huyler Ramsey a 22-year-old housewife and mother from Hackensack, New Jersey. On June 9, 1909, Alice, and three women companions (none of whom drove), left Manhattan. Fifty-nine days and 3,800 miles later they arrived in San Francisco. Fig.1.1.2 shows us the route.



Alice Ramsey, her crew (Nettie Powell, Margaret Atwood and Hermine Jans) and her Maxwell

Fig.1.1.1 First Women to Drive



Alice Ramsey's Route; no roadmaps, few paved roads, few roads at all west of the Mississippi.

Fig.1.1.2 Route

"Four miles from Grand Island the rear axle broke again. A farm family took us in while a mechanic from Denver brought another. Nettie was happy to give her place to the mechanic and ride the train ahead to Cheyenne. Near Ogallala, Nebraska, we were halted by a nondescript sheriff's posse on horseback. They were looking for two murderers and at first didn't believe us

when we explained that we were only trying to drive from New York to San Francisco. It was not until the lawmen were convinced that no firearms or suspects were concealed that they allowed us to go on.”

“In Utah we hit a prairie dog hole in the road with such force that a tie bolt came out of the tie rod connecting the front wheels. We had a pilot car with us and driver Frank Irving went back to Orr’s ranch and we were able to make temporary repairs. In spite of everything, we finally made it across Nevada arriving near midnight at the Riverside Hotel in Reno. Next day we continued by way of Carson City across the Sierras to Placeville, then to Sacramento.”

注：此篇文章出自 www.EyewitnesstoHistory.com。

Technical Words

challenge	n.; vt.	挑战；向……挑战
impassable	adj.	不能通行的，无路可通的
quagmire	n.	沼泽，湿地
love affair	n.	强烈爱好
racing	vi.; adj.	竞赛，赛马；赛车，比赛的
raceway	n.	水沟，(赛车用的)跑道
barrier	n.	(阻碍通道的)障碍物，栅栏，屏障
adventurer	n.	冒险家
coast-to-coast	adj.	由大西洋岸至太平洋岸的
axle	n.	轮轴，车轴
mechanic	n.	技工，机修工，机械师

Phrases and Expressions

tie bolt	连接螺栓
tie rod	转向横拉杆
pilot car	先驱车

Notes on the Text

1. Crude, no more than a two-seated buckboard powered by an electric motor, none-the-less the exhibit excited its audience.

朴实的不超过两座的四轮马车用一台电动发动机作为动力，这样的陈列品依然使观众兴奋异常。

2. Dirt roads that the horse found perfectly acceptable became impassable quagmires of mud for the automobile.

马匹完全可以行走的泥泞路面对汽车来说变成了难以通行的沼泽地。

3. In 1904, W.K. Vanderbilt, established the “Vanderbilt Cup” to promote the sport of automobile racing.

1904 年, W.K.范德比尔特 (W.K. Vanderbilt) 创立了“范德比尔特杯”以促进汽车比赛运动的发展。

4. Nelson Jackson was the first to motor coast-to-coast in 1903.

1903 年, 纳尔逊·杰克逊 (Nelson Jackson) 第一个驾车从大西洋岸到太平洋岸。

5. A farm family took us in while a mechanic from Denver brought another. Nettie was happy to give her place to the mechanic and ride the train ahead to Cheyenne. Near Ogallala, Nebraska, we were halted by a nondescript sheriff's posse on horseback. They were looking for two murderers and at first didn't believe us when we explained that we were only trying to drive from New York to San Francisco.

一个农民家庭接待了我们, 一名机修工从丹佛 (Denver) 带来了一根新的后轴。内蒂 (Nettie) 乐意地把她的位置让给了这个机修工, 自己乘火车先行去塞延 (Cheyenne)。在内布拉斯加州 (Nebraska) Ogallala, 我们被一队莫名其妙的郡治安官人马阻止了。他们正在寻找 2 个杀人犯, 我们解释我们只是想驾车从纽约到旧金山。

Exercises

I. Answer the following questions in English.

1. What made its debut at Chicago's Columbian Exposition in 1893?
2. What became a fixture of American culture and our infatuation with the car blossomed into a love affair?
3. When did Alice, and three women companions (none of whom drove), leave Manhattan?
4. Why were we halted by a nondescript sheriff's posse on horseback?
5. In Utah did we hit a prairie dog hole in the road with such force that a tie bolt came out of the tie rod connecting the front wheels?

II. Translate following expressions into English.

1. 加油站
2. 新鲜事物
3. 往回走, 折转
4. 汽车比赛
5. 转向横拉杆
6. 大西洋岸至太平洋岸

III. Translate following sentences into English.

1. 15 年内, 汽车工业已经站稳脚跟。
2. 道路上没有星罗棋布的加油站。
3. 汽车还是由新奇事物变为必需品。
4. 汽车成为美国文化的固有事物。
5. 1903 年, 杰克逊是驾车从大西洋岸到太平洋岸的第一人。
6. 经历了 59 天和 3 800 英里之后, 她们到达了旧金山。

IV. Study the following list and name. *

1. linear speed, linear velocity, angular speed, angular velocity, peripheral speed, peripheral,

rotational speed, rotational velocity

2. allowable speed, admissible velocity, critical speed, critical velocity, maximum speed, effective top speed

3. uniform speed, uniform velocity, stable speed, constant speed, slip velocity, minimum speed (in gear), maximum speed (in gear)

Reading Material

Toyota Corolla History

The rear wheel drive Toyota Corolla was first introduced in Japan in model year 1966. Two years later, it was brought to the United States, replacing the unpopular and barely-noticed Crown.

It lasted only two years with its original 1.1 liter engine, when a larger 1970 model appeared, powered by a "much larger" 1.2 liter engine. This new model actually became the second best selling import car in 1970. The next year, 1971, brought a 1.6 liter engine, more in tune with American tastes.

1974 saw the third generation, and the Corolla's strongest popularity-including the inexpensive Corolla Tercel model, it was the best-selling vehicle in the world from 1974 to 1977. Five years later, in 1979, a fourth generation appeared, still with rear wheel drive. This was to last until 1984, when the fifth generation Corolla came with front wheel drive and a coupe version, the GT-S, with a 16 valve engine. The GT-S remained in production through 1991.

Faced with increasing sales, Toyota entered a joint venture with General Motors to create NUMMI. NUMMI took over a rather atrocious General Motors plant in California and turned it into one of the highest quality plants in North America. The NUMMI plant built both the Corolla and the General Motors version, the Nova (later to be renamed Prizm).

The sporty FX was introduced in 1987, followed by the sixth generation in 1988. With sales still rising, Toyota opened a new facility in Canada which also produced Corollas.

In 1993, the Corolla moved to its current compact size, garnering many awards. The Tercel was split off as a separate subcompact model to attract those who could no longer afford the increasingly upscale Corolla. A 1.6 liter engine was standard, with an optional 1.8 liter engine. A driver's side airbag was standard, and a passenger airbag was added in 1994.

By 1997, all Corollas sold in the United States were built in North America. The wagon was discontinued, but side-impact protection was increased.

In 1998, the current generation was created. Its distinguishing feature was a new 1.8 liter engine which produced about 120 hp. This engine, even before it received variable valve timing, was peppy enough to feel more powerful in everyday driving than the 132 hp Dodge Neon engine. Yet, it achieved very good gas mileage and was quite quiet.

In 2000, the 1.8 liter engine was given variable valve timing for better gas mileage and more power. It also reduced emissions, so that the Corolla could be certified by the EPA as a low emission vehicle.

2001 saw a minor face-lift of the sheet metal, making the Corolla look even more like a Camry.

In the thirty years since its introduction, Corolla has sold more cars worldwide than any other nameplate!

1.2 The Birth of Automobiles

The history of the automobile actually began about 4,000 years ago when the first wheel was used for transportation in India. Several Italians recorded designs for wind-driven vehicles. The first was Guido da Vigevano in 1335. It was a windmill-type drive to gears and thus to wheels. Later Leonardo da Vinci designed clockwork-driven tricycle with tiller steering and a differential mechanism between the rear wheels.

In the early 15th century, the Portuguese arrived in China and the interaction of the two cultures led to a variety of new technologies, including the creation of a wheel that turned under its own power. By the 1600s, small steam-powered engine models were developed.

A Catholic priest named Father Ferdinan Verbiest is credited to have built a steam-powered vehicle for the Chinese Emperor Chien Lung in about 1678. There is no information about the vehicle, only the event. James Watt didn't invent the steam engine until 1705.

Although by the mid-15th century the idea of a self-propelled vehicle had been put into practice with the development of experimental vehicles powered by means of springs, clockworks, and the wind, Nicolas-Joseph Cugnot of France is considered to have built the first true automobile in 1769. Designed by Cugnot and constructed by M. Brezin, it is also the first vehicle to move under its own power for which there is a record. Cugnot's three-wheeled steam-powered vehicle carried four persons. It had a top speed of a little more than 3.2 km/h (2 mph).

Evans was the first American who obtained a patent for "a self-propelled carriage." He, in fact, attempted to create a two-in-one combination of a steam wagon and a flat-bottomed boat, which didn't receive any attention in those days. During the 1830's, the steam vehicle had made great advances. But stiff competition from railway companies and legislations in Britain forced the poor steam vehicle gradually out of use on roads. The early steam-powered vehicles were so heavy that they were only practical on a perfectly flat surface as strong as iron. A road thus made out of iron rails became the norm for the next hundred and twenty-five years. The vehicles got bigger and heavier and more powerful and as such they were eventually capable of pulling a train of many cars filled with freight and passengers.

Carl Benz and Gottlieb Daimler, both Germans, share the credit of changing the transport habits of the world, for their efforts laid the foundation of the great motor industry as we know it today. First, Carl Benz invented the petrol engine in 1885 and a year later Daimler made a car driven by motor of his own design.

Daimler's engine proved to be a great success because of its less weight that could deliver

1,000 rpm and needed only very small and light vehicles to carry them.

France too had joined the motoring scenario by 1890 when two Frenchmen Panhard and Levassor began producing vehicles powered by Daimler engine, and Daimler himself, possessed by the automobile spirit, went on adding new features to his engine. He built the first V-Twin engine with a glowing platinum tube to explode the cylinder gas—the very earliest form of sparking plug.

For many years after the introduction of automobiles, three kinds of power sources were in common use: steam engines, gasoline or petrol engines, and electric motors. In 1900, over 2,300 automobiles were registered in New York, Boston, Massachusetts, and Chicago. Of these, 1,170 were steam cars, 800 were electric cars, and only 400 were gasoline cars.

In ten years from the invention of the petrol engine, the motorcar had evolved itself into amazing designs and shapes. By 1898, there were 50 automobile-manufacturing companies in the United States, a number that rose to 241 by 1908. In that year, Henry Ford revolutionized the manufacture of automobiles with his assembly-line style of production and brought out the Model T, a car that was inexpensive, versatile, and easy to maintain. The introduction of the Model T transformed the automobile from a plaything of the rich to an item that even people of modest income could afford; by the late 1920s the car was commonplace in modern industrial nations.

Automobile manufacturers in the 1930s and 1940s refined and improved on the principles of Ford and other pioneers. Cars were generally large, and many were still extremely expensive and luxurious; many of the most collectible cars date from this time. The increased affluence of the United States after World War II led to the development of large, while most companies in Europe made smaller, more fuel-efficient cars. Since the mid-1970s, the rising cost of fuel has increased the demand for these smaller cars, many of which have been produced in Japan as well as in Europe and the United States.

Technical Words

windmill	n.; vt.; vi.	风车; 使旋转; 作风车般旋转
mechanism	n.	机械装置; 机构, 机制
interaction	n.	交互作用, 交流
propel	vt.	推进, 驱使
practice	n.	实行, 实践
experimental	adj.	实验的, 根据实验的
norm	n.	标准, 规范
freight	n.; vt.	货物, 货运; 装货, 使充满, 运送
petrol	n.	<英>汽油
possessed	adj.	着魔的, 疯狂的
amazing	adj.	令人惊异的
maintain	vt.	维持, 维修

refine	vt.	精制, 精炼
collectible	adj.	可收集的, 可代收的

Phrases and Expressions

differential mechanism	差速器
sparking plug	火花塞

Notes on the Text

1. Later Leonardo da Vinci designed clockwork-driven tricycle with tiller steering and a differential mechanism between the rear wheels.

后来, 雷奥纳多·达芬奇(Leonardo da Vinci)设计了时钟机构驱动机器三轮车, 带有舵柄转向装置和后轮之间的差速器。

2. Daimler's engine proved to be a great success because of its less weight that could deliver 1,000 rpm and needed only very small and light vehicles to carry them.

戴姆勒的发动机被证实是一项伟大的成就, 因为它的重量更轻, 能输出 1 000 转每分钟的转速, 只需非常小而轻的车辆来承载它们。

3. He built the first V-Twin engine with a glowing platinum tube to explode the cylinder gas—the very earliest form of sparking plug.

他造出了第一台 V 型双列发动机, 装有用以使气缸气体爆发的白金管——早期的火花塞型式。

4. For many years after the introduction of automobiles, three kinds of power sources were in common use: steam engines, gasoline or petrol engines, and electric motors.

在汽车进入人们生活之后很多年, 三种动力源被普遍应用: 蒸汽发动机、汽油发动机以及电动发动机。

5. Since the mid-1970s, the rising cost of fuel has increased the demand for these smaller cars, many of which have been produced in Japan as well as in Europe and the United States.

自 20 世纪 70 年代中期始, 燃油价格的上涨增加了这些小型汽车的需求量, 许多日本生产的汽车也开始出现在欧洲和美国市场上。

Exercises

I. Answer the following questions in English.

1. When did the history of the automobile actually begin?
2. Who is considered to have built the first true automobile in 1769?
3. Why the early steam-powered vehicles were only practical on a perfectly flat surface as strong as iron?
4. Who built the first V-Twin engine with a glowing platinum tube to explode the cylinder gas—the very earliest form of sparking plug?
5. Why has the demand for these smaller cars increased since the mid-1970s?

II. Translate following expressions into English.

1. 差速器
2. 火花塞
3. 自动驱动汽车
4. V 型双列发动机
5. 汽油发动机
6. 现代工业国家

III. Translate following sentences into English.

1. 17 世纪初, 小型蒸汽动力发动机出现了。
2. 1885 年卡尔·奔驰发明了汽油发动机。
3. 戴姆勒为汽车的活力而着迷, 想要为他的发动机注入新的特色。
4. 汽车是便宜的, 多功能的, 易于维修的。
5. 20 世纪 20 年代, 汽车在现代工业国家成为平常事物。
6. 二战之后美国的新富使发展更为迅速。

IV. Study the following list and name. *

1. two-door sedan, four-door sedan, fixed head coupe, hard-top sedan, limousine, station wagon, drop head coupe, convertible, sports car, minicar, jeep, field vehicle
2. bus, omnibus, service vehicle, coach, luxury coach, touring bus, articulated bus, double-deck bus, passenger-trailer, minibus, microbus, articulated trolleybus
3. lorry, truck, high-way vehicle, board truck, canvas top, box-van truck, van, electromabil, delivery van, pick-up, cargo-bus, general-purpose truck, multipurpose vehicle short-wheelbase truck
4. rear dump, side tipper, container carrier, tank-truck, bulk truck, thermos van, refrigerated vehicle, furniture van

Reading Material

Rudolf Diesel — Father of the Diesel Engine

Engineers have always been concerned with efficiency, as in how much can be gotten out of something in exchange for what is put into it. Releasing stored energy is more difficult than using energy that is readily available: a boat can travel downstream with the current (available energy); but to release the stored energy in a piece of coal requires that heat be applied to it.

No machine is 100% efficient. Energy is lost through friction, air resistance, and heat. An engine that converts half of its fuel energy to useful work would be considered 50% efficient. Yet the most sophisticated steam engines ever built never exceeded 15% efficiency.

Is it any wonder then that by the end of the 19th century a young engineer by the name of Rudolf Diesel made it his life ambition to invent a more efficient engine?

Diesel was born in Paris, France on March 18, 1858, to Bavarian emigrants. His father, a strict disciplinarian, was a leather worker who forbid young Rudolf and his siblings from