高等学校试用教材

英语

（汽车专业用）

十院校汽车专业
英语教材编写组 编

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内 容 提 要

本书材料选自国外英语科技资料。课文内容以汽车构造为主，并适当选编了有关设计和修理的一些文章。全书共30课，选注专业术语和词汇1800余条。

本书供高等院校汽车专业高年级学生使用，也可供具有一定英语基础的汽车工程技术人员使用。

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前　言

本书供高等院校汽车专业高年级学生使用。其目的是为了使学生通过一定学时的阅读实践，巩固和加深已学的语法知识，扩大词汇量，了解基本的英汉翻译方法，从而进一步提高英语专业阅读能力。本书也可供具有一定英语基础的汽车工程技术人员使用。

本书材料选自国外英语科技资料（包括科普读物、汽车说明书、科技书籍、教科书和杂志等），其中大部分摘自英美原著。为了保持课文内容的完整性，除个别地方作了适当改动外，基本上未作修改。

课文内容以汽车构造为主，并适当选编了若干篇有关汽车设计和修理的文章。在课文编排上尽量照顾专业知识学习的系统性。全书共计30课，选注专业术语和词汇1800余条。

为了便于自学，每课语法难点都作了注释，课文内出现的一些长句和难句也作了语法分析和翻译。书后附有《英汉翻译方法》，供学生阅读时参考。

参加本书编辑工作的有（以院校笔划为序）：东北林学院李厚滋、西安公路学院翁福盈、吉林工业大学马泰来、华南工学院唐宝华、安徽农机学院赖日荣、河北工学院王桂兰、重庆大学罗克俊、清华大学邹咏华、湖北农机学院韩志凡和湖南大学雷吉洁。陕西汽车制造厂李洪波应邀参加了本书编辑。另外，白芝雅、徐钰绚和蔡善培也参加了部分编辑工作。

本书在编辑过程中得到有关单位的一些同志的大力支持和协助，在此谨表谢意。

由于我们的水平有限、时间仓促，可能会有许多错误和欠妥之处，请使用本书的同志批评指出，以便进一步修改。

十院校汽车专业英语教材编写组

一九七八年八月

Contents

Lesson One

How Automobiles Work (Part I)

Did you know that your car probably has about 7000 different parts in it? Some of them make it more comfortable or better looking, but most of them are to make it run.[1]

These are the important working sections of a car:

THE ENGINE

THE CLUTCH (automatic transmissions have a special hydralic coupling instead of a clutch)

THE TRANSMISSION AND DIFFERENTIAL (which are gears)

THE WHEELS

What is the first thing a driver does to start a car? He puts his car key into the ignition lock and turns it. The car key opens a path so that electric current can flow from the car battery to the cranking motor.[2] In the early days of cars, you actually had to crank the engine with a little handle. The cranking MOTOR or STARTER is just powerful enough to start the engine turning.

Then the driver steps on the starter pedal or pushes a starter button on the instrument panel. (In some cars the key is the starter too.)

The starter gets its electricity from the STORAGE BATTERY.

It does all the electrical jobs in your car: starts it, runs the radio, the heater, the windshield wipers, the horn, and the lights. If electricity kept flowing out of the battery and never coming in, soon it would be all used up.[3] The battery would be dead. So the battery is attached to the GENERATOR. The generator's job is to make electricity from the car's engine power when it is running, and send it back to the battery to replace the current that has been used.

In the meantime, the gasoline pump has started pumping gas from the tank (which is usually in the back of the car) up through a tube into the CARBURETOR.

The big round thing on top is a filter to keep out dust and dirt. The carburetor is a mixer. It mixes gasoline from the tank with air — 2,000 gallons of air with every gallon of gas. What comes out of the carburetor is a fine fog of gasoline and air mixed.

This gasoline fog is forced through some valves (which are little one-way holes) to the top of the CYLINDERS.

In the cylinder, which is a sort of can, is a round slice of thick metal on a rod. This is called the PISTON. At the top of each cylinder you see a spark plug.

Every spark plug is connected with a wire to a little round box called the DISTRIBUTOR. The distributor hands out electricity to the spark plugs, one after the other, very fast, thousands of sparks a minute.[4]

At the end of each spark plug there is a space that the spark has to jump across. When it does, it sets fire to the gasoline and air mist all around it.

Bang! There is an explosion in the cylinder.

The explosion pushes the piston down.

The piston is attached to a rod.

The rod is attached to the CRANKSHAFT of the car. As the rods are pushed down, one after the other, they push the crankshaft around, just the way your foot (attached to your pushing leg) pushes the pedal of your bicycle around.[5]

The crankshaft turns the TRANSMISSION GEARS which turn the DRIVESHAFT which turns the rear axle and rear wheel DIFFERENTIAL GEARS which turn the rear wheels.

After each explosion in the cylinder, the waste or burned-up gas goes out through a valve and into a pipe called the EXHAUST. The exhaust shoots the waste gas out behind the car.

Notes to the Text

1. Some of them make it more comfortable or better looking, but most of them are to make it run. 其中有些零件可使汽车更加舒适或美观，但多数零件是为了使汽车能够行驶的。

"be + 动词不定式" 结构，即句中的 "are + 动词不定式" 表示预先安排的计划，意为"是为了"。"to make it run" 是动词不定式短语 "are" 的表语。

2. The car key opens a path so that electric current can flow from the car battery to the cranking motor. 汽车钥匙使电路接通，电流就从汽车蓄电池流向起动机。

这是一个从主复合句，由连接词 "so that" 引导的是目的状语从句。

3. If electricity kept flowing out of the battery and never coming in, soon it would be all used up. 如果电总是从蓄电池流出而不流进，那么不久电就会用完。

这是一个虚拟语气结构，句中所表示的情况并非事实或者可能性不大。

4. The distributor hands out electricity to the spark plugs, one after the other, very fast, thousands of sparks a minute. 分电器陆续不断地、非常迅速地把电分配给火花塞，每分钟产生成千上万的火花。

"hands out" 意为 "分配"，为后面三个短语 (one after the other, very fast, thousands of sparks a minute) 所修饰。

5. As the rods are pushed down, one after the other, they push the crankshaft around, just the way your foot (attached to your pushing leg) pushes the pedal of your bicycle around. 当连杆一个接着一个地被推动向下的时候，连杆就使曲轴旋转，就象你的脚（连着你的小腿）蹬着自行车踏板绕转一样。

"just the way" 是 "just like the way" 介词短语的省略，在句中引导后面的方式状语从句。

Lesson Two

How Automobiles Work (Part II)

Meanwhile the cooling system is at work. The engine gets awfully hot with all those explosions taking place in it. If it weren't being cooled all the time, the parts would crack or melt together.[1]

The water has to be cooled too.

The FAN sucks air in through the front of the car to cool the water in the car radiator. This water then flows back through the water jacket around the engine cylinders to cool them off.

Now the engine is running smoothly and you want to get moving.[2] The GEARS in the TRANSMISSION go to work by connecting the moving parts of the engine to the wheels. There are at least three sets of gears in most passenger cars, even more in jeeps and trucks.

Gears are good multipliers. They can change a little "twist" or "torque", which is turning power into a lot of torque.

The first set of gears have the hardest work of all, to start the car moving. Things that are standing still

are hard to start. When the next set of gears are used, the car picks up speed. Finally, when the car is moving easily, the gears are shifted again. We say then that the car is in high gear.

Unless it has an automatic transmission, every car has a CLUTCH, which takes the pressure off the gears so they can shift. In some cars the driver has to step on a pedal to release the clutch, then shift the gears with a lever. In other cars all the shifting is automatic.

When you want to go backward, the gears work like the powerful low gear, but in the opposite direction.

Some cars have an extra gear called OVERDRIVE which allows them to travel long distances using less gasoline.

The gears in the transmission multiply the torque from the engine, and send it back to the rear axle by way of the DRIVESHAFT. The rear wheels of the car push it ahead. The front wheels only steer.

The driveshaft has joints, just as your arms and legs have. The joints allow the shaft to move up and down as the wheels go over bumps. Where the driveshaft meets the rear axle (which is a rod connecting the back wheels), there is the group of gears called the DIFFERENTIAL.

These gears turn the rear wheels. They let each wheel turn at its own speed when it is necessary. If the car is

turning a corner, the outside wheel has to turn faster than the inside one, which acts as a sort of pivot.

Other gears connect the steering wheel to the front wheels which steer the car while the rear wheels push.

The foot brake pedal and the hand brake are connected to the wheels too. When you press on the foot brake, friction bands push hard against the wheel drums and stop the wheels from turning.[3] The hand brake is connected to the brake shoes on the rear wheels.

On the instrument panels are several instruments which tell what's going on under the hood.

The gas gauge tells how much gasoline is in the tank. The oil gauge tells if the engine is getting enough oil.[4] (A thin film of oil has to keep flowing around all the moving parts of the engine to keep them working smoothly and safely.)

The ammeter tells if the generator is sending new electricity into the battery. This should be happening most of the time when the engine is running.

The temperature gauge tells if the engine is being cooled enough. If there is not enough water in the radiator, or if the fan isn't blowing enough air back across the pipes, the engine gets too hot.

The speedometer tells how fast the car is moving. It does this by measuring how fast the wheels are turning.

Some cars have a little handle on the instrument panel called the choke. Pulling out the choke sends extra gasoline into carburetor to help the car get started on a cold morning, or give it extra power to get up a steep hill.[5]

Notes to the Text

1. If it weren't being cooled all the time, the parts would crack or melt together. 如果发动机不能随时予以冷却，那么发动机零件就会破裂或熔化在一起。

   这是一个主从复合句，虚拟语气结构，句中所述内容并非事实，只是假设。

2. . . . and you want to get moving. .....而你要开车了。

   (1) "to get moving" (=to start) 是习惯用语，意为"开动"、"启动"。

   (2) "to get moving" 是动词不定式短语，作动词"want"的宾语。

3. When you press on the foot brake, friction bands push hard against the wheel drums and stop the wheels from turning. 当你踩下脚制动时，摩擦片就会紧紧地压在车轮制动鼓上，使车轮停止转动。

   (1) "stop . . . from . . ." 是惯用的动词短语。意为"使……停止……"。

   (2) "turning" 是动名词，作介词"from"的宾语。

4. The oil gauge tells if the engine is getting enough oil.

机油表指示出发动机是否得到足够的机油。

句中 "if" 引导出后面的宾语从句。在这里 "if (= whether)" 意为 "是否"。

5. Pulling out the choke sends extra gasoline into carburetor to help the car get started on a cold morning, or give it extra power to get up a steep hill. 拉开阻风门，就可给化油器送进额外的汽油，以帮助汽车在寒冷的早晨起动，或给汽车加上额外的动力，以便爬上陡坡。

句中的主语是动名词短语 "pulling out the choke"。