

**函**授

# 英 语

(理工科用)

上海交通大学科技外语系 张祖錩 (主编) 冯仪民 奚兆炎 甘露光 郑志祥 周孝芳

為等教育出版社

高等学校函授教材 (兼作高等教育自学用书)

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(理工科用)

第四册

上海交通大学科技外语系 张祖锠(主编) 冯仪民 奚兆炎 甘露光 郑志祥 周孝芳

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#### 内容摄宴

本书是供高等学校理工科英语函授教学使用的基础教材,同时也可供成 年 人 自 学科技英语之用。

本书是在原高等学校试用教材《英语》(上海交通大学外语教研组主编)的基础上,按照《英语函授教学大纲》(草案)的要求,作了较大幅度的修改编成的。全书共四册,供基础阶段四个学期使用,共需570 学时(相当日校190学时)。根据函授教学的特点,在编写时将教材和学习指导书融为一体;书后附有练习答案及课文的参考译文 以便于学生进行自我检查。

本册是第四册,分两大部分。第一部分(1—6课)的编写与第二、第三册相同。第二部分从第7课开始,每课介绍一项基本阅读技能,并配有两篇课文和相应的练习,目的是帮助函授生熟悉有关阅读的某些知识和技巧,为顺利地过渡到专业阅读阶段和以后阅读专业书刊作准备。

责任编辑, 张丹婕

高等学校函授教材 (兼作高等教育自学用书)

## 函 授 英 语

(理工科用) 第 四 册 上海交通大学科技外语系 张祖锠(主编) 冯仪民 奚兆炎 甘露光 郑志祥 周孝芳

为 ¶ 表 ↑ \$ ■ # 出版 新华书店北京发行所发行 文 字 六 〇 三 厂 印 装

开本 850×1168 1/32 印张 11.875 字数 286,000 1984 年 4 月第 1 版 1989 年 2 月第 6 次印刷 中数 122 511-135 510 ISBN 7-04-001658-3/H・178 定价 2.75 元

# 编者说明

本册是高等学校理工科《函授英语》教材的第四册,供第二学年下学期 130 学时之用。全部课文均选自英美原版书刊; 练习是按打好语言基础和提高阅读能力的要求编写的。

本册分两大部分。第一部分(第1—6课)的要求和安排与第二、第三册相同,目的是帮助函授生继续掌握基本词汇、语法和课文,打好英语语言基础。第二部分从第7课开始,每课介绍一项基本阅读技能,并配有两篇课文和相应的练习,目的是帮助函授生了解和熟悉有关阅读的某些知识和技巧,为顺利地过渡到专业阅读阶段和以后阅读专业书刊作准备。

学完本册后,英语学习的基础阶段已告一段落。从第三学年 开始转入专业阅读阶段,这时可选用高等学校试用教材《英语》第 三册分类教材继续学习。

第四册各课学时数分配(仅供参考)

课次	毎 课 学 时	小 计
16	12	72
复习练习(1-6)		5
7—12	8	48
复习练习(7-12)		5

共计: 130 学时

自学、面授与集中教学时数建议为

自学	面授与集中教学	测验作业与考试	总计
100	24	6	130

参加本册审稿工作的有:哈尔滨工业大学耿宪章(主审)、邢志春,广西大学梁清华,华南工学院楚至大,厦门大学李慰萱,昆明工学院李义燕,上海工业大学张彭年,同济大学李舟,西安交通大学陈璇夫。

编 者 1984年2月

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## Lesson One

#### Main Points

Text: Friction

Useful Words and Phrases:

supply, start, enough

Grammar: The Subjunctive Mood (1)

Reading Material:

I Effects of Friction
II Controlling Friction

### Text

## Friction

Friction is a force which opposes motion. Much of the energy supplied to a complicated machine with many moving parts is wasted in overcoming this opposition.¹ The energy is converted into useless heat. The amount thus lost can be considerably reduced and the life of the machine prolonged by careful lubrication.² This reduction improves the efficiency of the machine. Another way in which friction is reduced is to substitute roller or ball bearings for the earlier type of bearing,³ in which the surfaces in contact move by sliding. Bearings of these later types are used very extensively in many kinds of modern machinery.

It must not be assumed, however, that friction is always a disadvantage. In many instances it is highly important. Belts are often used in conveying power from one machine to another. In the absence of friction, this could not be done. The driving wheel would not run the belt, neither would the belt run the wheel to be driven.4 Without friction, then, belted machinery could not be used. Again in the case of all motor vehicles, friction is essential in the operation of the brake.<sup>5</sup> Were there no friction, there could be no brake. But even this illustration does not give an adequate picture of the importance of friction. The vehicle could not even be started if it were not for the friction exerted between the tires and the road. Nails hold in wood, and screws hold in either wood or metal by reason of friction, without which they would be useless. Walking is difficult enough on an icy pavement, but it would be wholly impossible if there were no friction at all between the shoe and the pavement.

#### New Words

1.	oppose	[əˈpəuz]	vt.	反抗, 阻止, 反对
2.	opposition	[opəˈziʃən]	n.	反抗,阻止,反对
3.	considerably	[kənˈsidərəbli]	ad.	相当大地
4.	reduce	[ri'dju:s]	vt.; vi.	减少,减小
5.	prolong	[prəˈlɔŋ]	vt.	延长
6.	careful	['keəful]	a.	仔细的, 小心的
7.	lubrication	[lu:bri'kei[ən]	n.	润滑
8.	reduction	[ri'dʌkʃən]	n.	减少,还原
9.	substitute	['sabstitju:t]	vt.	代替,替换
10.	roller	[cluer']	n.	滚柱
11.	contact	['kontækt]	n.	接触,联系

12. extensively [iks'tensivli] ad. 广泛地 13. machinery [mɔ'ʃi:nəri] n. 机械,机器(总称 14. assume [ə'sju:m] vt. 假定,采取 15. disadvantage [disəd'vɑ:ntidʒ] n. 不利,不利条件 16. instance ['instəns] n. 例,实例 17. highly ['haili] ad. 高度地,非常,很 18. belt [belt] n. 皮带,带 belted ['beltid] a. 皮带传动的 19. convey [kən'vei] vt. 运送,传送 20. wheel [(h)wi:l] n. 轮,车轮	
14. assume       [ɔ'sju:m]       vt. 假定,采取         15. disadvantage       [disəd'vɑ:ntidʒ]       n. 不利,不利条件         16. instance       ['instəns]       n. 例,实例         17. highly       ['haili]       ad. 高度地,非常,很良能,非常,很多的。         18. belt       [belt]       n. 皮带,带         belted       ['beltid]       a. 皮带传动的         19. convey       [kən'vei]       vt. 运送,传送	
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19. convey [kən'vei] vt. 运送,传送	
20. wheel [(h)wi:l] n. 轮, 车轮	
21. essential [i'senfəl] a. 必不可少的,必要	1
的; 本质的	
22. brake [breik] n. 制动器,闸,制动	ל
23. even ['i:vən] ad. (加强语气)甚至	
(…也)	
24. illustration [iləs'treifən] n. 说明,实例,插图	]
25. adequate ['ædikwit] a. 适当的;足够的	
26. importance [im'po:tons] n. 重要(性)	
27. road [roud] n. 路, 道路	
28. nail [neil] n. 钉	
29. wood [wud] n. 木头	
30. screw [skru:] n. 螺丝	7
31. walk [wɔ:k] vi. 走,步行	
32. icy ['aisi] a. 结冰的; 冰覆盖着	的
33. pavement ['peivmont] n. 路面; 人行道	
34. wholly ['həulli] ad. 完全	
35. shoe [fu:] n. 鞋	

# Phrases and Expressions

1. moving parts可动部件2. substitute ... for用…代替

3. roller bearing

4. ball bearing

5. in the absence of

6. motor vehicle

7. driving wheel

8. in the case of

9. give a picture of

10. by reason of

滚柱轴承

滚珠轴承

无…(时), 缺乏

机动车

主动轮

就…来说,至于

描写

由于, 因为

#### Notes

1. Much of the energy supplied to a complicated machine with many moving parts is wasted in overcoming this opposition.

一台有许多可动部件的复杂机器所得到的能量,有许多都是在克服这种 阻力中损失掉的。

句中分词短语 supplied to a complicated machine with many moving parts 作定语,修饰 energy, 其中 with many moving parts 修饰 a complicated machine。

2. The amount thus lost can be considerably reduced and the life of the machine prolonged by careful lubrication.

仔细地给机器加上润滑油,能大大减少这样损失掉的能量,并延长机器的寿命。

在并列句的后一分句中通常省去与前一分句中相同的部分,使句子显得简练。这里 and 后的句子中省去了 can be。

- 3. ... to substitute roller or ball bearings for the earlier type of bearing ...
  - \*\*\*用滚柱轴承或滚珠轴承代替过去的老式轴承 \*\*\*

动词词组 substitute A for B, 意为"用 A 代替 B"。不是"用 B 代替 A"。

4. The driving wheel would not run the belt, neither would the belt run the wheel to be driven.

主动轮就不会带动皮带,皮带也不会带动从动轮。

由 neither 开头的句子需用倒装语序。若句中谓语有情态动词或助动词时,则只将情态动词或助动词放在主语之前。因而本句中的 would

放在主语 the belt 之前。

5. Again in the case of all motor vehicles, friction is essential in the operation of the brake.

还有,就所有机动车辆来说,摩擦对操纵制动器是必不可少的。 这里 again 意为"还有,另外"。

#### Useful Words and Phrases

## supply

#### 1. vt.

a) 供给, 提供

We should supply more new products to meet the needs of the people.

我们应该提供更多的新产品来满足人民的需要。

- b) supply ... for (或 to) 把…供给
  The generator supplies electric power for these motors.
  这台发电机向这些电动机供电。
- c) supply ... with 以…供给 Our industry will supply agriculture with more and more farm machines.

我国工业将给农业提供越来越多的农业机械。

2. n. 供给, 供应; (电)源

The fuel in the engine will not burn if the supply of air is cut off.

如果停止供气,发动机里的燃料就不会燃烧。

#### start

1. vi. 开始, 开动

- 1) The new semester will start on September 1. 新学期九月一日开始。
- 2) Without transistors, the process of miniaturization could not have started.

如果没有晶体管, 小型化的过程就不可能开始。

3) There is something wrong with the engine. It won't (=will not) start.

发动机出了毛病, 发动不起来。

#### 2. vt.

- a) 引起; 开始; 发动
  - 1) The explosion started a fire. 爆炸引起了大火。
  - 2) The new workshop will start production soon. 新车间即将投产。
  - 3) Do you know how to start the car? 你知道怎样发动这辆车吗?
  - 4) When we were on our way, it started to rain. 我们上路后, 开始下起雨来。
  - 5) He started teaching mathematics at the age of twenty. 他二十岁开始教数学。
- b) 使…

The result of the experiment started the scientists looking for a new material.

这一实验结果促使科学家们开始寻找一种新材料。

## 3. n. 开始

- 1) He met with the difficulty at the very start. 他一开始就遇到了困难。
- 2) The film is exciting from start to finish. 这个电影自始至终使人激动。

## enough

- 1. a. 足够的, 充足的
  - 1) I have got enough time to go over the passage again. 我有足够时间把这段文章再看一遍。

enough 修饰名词时,可置于名词之前,也可置于名词之后。本句也可写成 I have got time enough ...。

- 2) That's enough, thank you. 够了、谢谢。
- 2. ad. 足够地, 充分地, 十分 在修饰形容词或副词时, 置于所修饰的词之后。
  - 1) Walking is difficult enough on an icy pavement. 在结冰的路面上行走是十分困难的。
  - 2) A satellite must travel fast enough to keep itself from being pulled back to the earth.
    卫星的运行速度必须快得足以使其不被地球吸引回来。
  - 3) I don't think I've got a good enough voice. 我认为我的嗓子不够好。
- 3. n.

Enough has been said on this subject. 关于这个题目已经说得够多了。

## Grammar

# The Subjunctive Mood (1)

虚拟语气(一)

1. 语气的概念与种类:

语气是谓语动词的一种形式,表示讲话人对某一行为或某件事的看法和态度。语气可分三种:

a) 陈述语气

陈述语气表示讲话人认为他所说的话是一事实。如:

1) Sound travels in sea water at about 4,800 feet per second.

声音在海水中以每秒4800英尺左右的速度传播。(现在时)

- 2) I did not go to the films yesterday evening. 昨天晚上我没有去看电影。(过去时)
- When we were in the steel plant, we worked together with the workers.
   当我们在钢铁厂的时候,我们和工人们一起工作。(过
- 去时)
  4) In the near future, there will be a flying demonstration in this city.

在这个城市里不久将有一次飞行表演。(将来时)

b) 祈使语气

析使语气表示讲话人向对方的请求或命令 等, 动 词 用 原 形。如:

- 1) Come in, please. 请讲。
- 2) Don't be late. 不要迟到。
- c) 虚拟语气

虚拟语气表示讲话人所说的话与事实相反,或是不可能实现的假设,或表示愿望、要求、建议等。如:

1) If it were possible to measure all the waste of energy and add it to the output, the total would be found to

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