英语教程 （理工科用）

教师参考书

清华大学社语教研室 （陈凝主编） 王文佳 赵静鹏 副主编

TEACHER'S

BOOK

AN ENGLISH COURSE

FOR STUDENTS OF SCIENCE
AND ENGINEERING

BOOK 2

AN ENGLISH COURSE
for Students of Science and Engineering
Teacher's Book 2

英语教程(理工科用)

第 二 册

教 师 参 考 书

清华大学外语教研室

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内 容 提 要

本书是配合清华大学外语教研室英语教材编写组所编高等院校理工科通用教材 *AN ENGLISH COURSE for Students of Science and Engineering* 第二册的教师参考书。本书内容包括学时分配表和各课的教学重点及要求、说明、听力材料、练习参考答案及参考译文等内容。本书除可供使用这套教材的教师备课参考外,也可供自学者使用。

说　明

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　　教学重点及要求　提出每课课文、词汇、语法等各部分应掌握的内容及具体要求；

　　说明　包括对课文　词汇、语法、对话及阅读材料等部分的补充讲解和说明，如：语言难点的注释、背景知识、人物以及地方的简介等。此外，在词的释义、用法及语法结构等方面还作了一些补充阐述，并适当介绍了在某些问题上的一些不同看法和倾向。这部分内容一般仅供教师教学时参考，不作教学要求。

　　听力材料　每课1—2篇，篇幅约相当于课文长度的二分之一，难度不超过课文，可用作检查性的听写练习或训练听力的材料。材料中出现有少量生词(均列于各篇材料之后)，使用时教师应预先提示给学生。全部听力材料均录制成有声材料，可供选用。

　　练习答案　仅限于汉译英、填空、选择、判断正误、变换句型等几个部分，其他部分答案从略。本书一般只提供一两种答案，其他可能答案不一一列出。

　　参考译文　一般以直译为主，文字上没有作过多的修饰润色，仅供教师参考。

　　本参考书中的说明材料及例句，部分为编者自己编写，部分引自有关词典及参考书，其中听力材料部分系在本教研室79届教学

组及 80 届教学组所用公共教案素材基础上加工编写而成，在此仅向有关出版社及作者表示谢意。

由于经验、水平和时间所限，书中一定有许多不妥之处，热诚欢迎使用本书的同志批评指正。

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编　者

1981 年 10 月 5 日

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学时分配表

单元	课次	课　文	词汇、语法	对话阅读听力	分课总学时
1	1	3学时	1—1.5学时	1—1.5学时	5—6学时
	2	3学时	1.5学时	1.5学时	6学时
	3	3学时	1.5学时	1.5学时	6学时
	4	3学时	1—1.5学时	1—1.5学时	5—6学时
	5	3学时	1.5学时	1.5学时	6学时
	6	3学时	1.5学时	1.5学时	6学时
单　元　复　习　（第1—6课）					1—2学时
2	7	3学时	1.5学时	1.5学时	6学时
	8	3学时	1.5学时	1.5学时	6学时
	9	3学时	1—1.5学时	1—1.5学时	5—6学时
	10	3学时	1.5学时	1.5学时	6学时
	11	3学时	1.5学时	1.5学时	6学时
	12	3学时	1—1.5学时	1—1.5学时	5—6学时
单　元　复　习　（第7—12课）					1—2学时
总　学　时（1—12课）		36学时	15.5—18学时	16.5—18学时	70—76学时

此表仅供参考,教师可根据各校学时及学生情况灵活安排。

目　录

Lesson One

本课重点及要求

Text: 1. 熟读课文第三、四、五段
　　　2. 熟练掌握:
　　　　　1) agree, wonder, arrive, necessary, cross
　　　　　2) used to, send out, by chance
Word Study: 熟练掌握 use, agree, arrive 的各种用法
Grammar: 过去完成时与过去将来时
　　　　　1) 掌握过去完成时及过去将来时的构成
　　　　　2) 掌握本课所讲过去完成时及过去将来时的用法

说　　明

Text

1. Sir Robert Watson Watt (1892—1973), Scottish physicist. His proposals for locating aircraft by radio-pulse echo detection led to the development of radar.

2. aircraft, spacecraft, aeroplane (airplane), craft, plane:

aircraft: (单复数同) 航空器; 飞机, 飞艇; 飞船任何带引擎或不带引擎的飞行工具都可被称为 aircraft (a flying machine of any type, with or without an engine, i.e.: balloon, glider, helicopter, airliner ...)

spacecraft: 宇宙飞船 (a vehicle able to travel in space)

aeroplane (英)
airplane (美) }: 飞机 (a flying vehicle that is heavier

than air, that has wings and has at least one engine)

craft: （单复数同）

  1）船（尤指小船）(a boat, esp. of a small size; vessel)

  2）航空器 (aircraft)

  3）宇宙飞船 (spacecraft)

plane: 飞机 (aeroplane 的缩略)(informal, abbreviation for aeroplane)

3. and:

  连接词 and 除作"和"、"与"、"同"、"以及"解，表示并列关系外，还有一些其它含义及用法，如：

  1）表示对照或对比：

  此时 and 与 but 的含义几乎相同，可译为"但是"，"可是"，"而"。例：

His mother is very kind *and* (in contrast) his father is rather severe.

  本课第一段 "…, *and* we have better instruments now." 句中的 and 也属此种用法，可译为"而"或"但是"。

  2）表示目的：

  在口语中（尤其是美语），and 常用于 go, come, try, send 等动词之后，代替 to 表示目的。例：

Try *and* do it better next time. (= Try *to* do it …)I hope you will come *and* see me tomorrow. (= … will come *to* see me tomorrow.)

  come *and* see 的语气一般比 come *to* see 强。如果单纯表示目的则多用 to。

  这种结构只能用于 present tense 和 infinitive，不能用于 past tense, participle 或 gerund。因此

不能说 "He came *and saw* me."。应改为 "He came *to* see me."。同样, "He is coming *and seeing* me.", "He insists on coming *and seeing* me." 都应改为 "coming *to* see me."。

3) 用于祈使句代替条件句的结构中,表示"那末"的含义。例:

Try it again, *and* you will get better results. (= If you try it again, you will get better results.)
Water the seeds *and* they will grow. (= If you Water the seeds they will grow.)

4) 有时 and 引出的句子按时间后于(或接续)前面的句子,同时还表示结果或后果。例:

He heard an explosion *and* he (therefore) phoned the police.

4. The Second World War (World War II), the war (1939—1945) between the Allies and the Axis. This war, which cost more than 36 million lives, was the most destructive and wide-spread in history.

5. "If *it* did that, *it* would be useful.": 句中的第一个 it 代替 aircraft, 而第二个 it 由上、下文逻辑意思判断则是泛指, 代替前面一件事, 即飞机(aircraft)能反射无线电波这一情况。

Word Study

1. use

1) be used to 有各种时态, 但 used to (+ *inf*.) 不能有任何其他时态。在强调状态改变, 即由不习惯到习惯

时，be used to 中的 be 常改用 get 或 become，这种现象尤其常见于将来时和完成时中，例：

You'll *get*(或 *become*) *used to* the weather in Beijing in a short time.

He *has got* (或 *become*) *used to* working late into the night.

2) used to (+*inf*.) 在构成疑问句或否定句时，可用两种形式。例：

Used you (或 ［口］ *Did you use*) *to* go to that radio station?

I *usedn't* (或 ［口］ *didn't use*) *to* go to that radio station.

2. agree

　1) agree to 的意思是"同意…"，后面一般接事物名词，如 plan, idea, method, proposal, suggestion, arrangement, decision等。

　2) agree with 的意思是"与…意见一致"，后面一般接人，但也可接表示"意见"，"看法"的词或句子。如：

I am far from agreeing with *his views*.

I quite agree with *what you say*.

　3) agree on 则表示"（双方）商定而同意…"的意思。如：

The two sides *agree on* (*upon*) these terms.

We *agreed on* (*upon*) a price for the engine.

3. arrive

arrive 与 reach, get to 都是"到达"的意思，但 arrive 是不及物动词，而 reach 常用作及物动词。这两个词都是正式的用语，而 get to 则是口头用语。例：

$$They \ have \begin{cases} arrived \ at \\ reached \\ got \ to \end{cases} the \ airport.$$

Grammar

1. 过去完成时 (the past perfect tense 或 the pluperfect tense)

A. 由 before, after, until, when, as soon as 等词引出的状语从句的谓语常用过去完成时，这时主句谓语用一般过去时。例：

The teacher took away my test paper before I *had finished it.*

After I *had spoken*, I realized my mistake.

The secretary did not leave until she *had finished* her work.

When (As soon as) she *had finished* her work, she went to the movies.

但有时也有状语从句的谓语用一般过去时，而主句用过去完成时的情况。例：

I *had* never *seen* him before he visited our class yesterday.

B. 在名词性从句(主语从句、宾语从句、表语从句和同位语从句)中

That he *had failed* once was no indication that he would fail again.

He said that he *had left* his wallet at home.

C. 在定语从句中

The house where he *had lived* as a child was

right on a lake.

He could still remember the good times he *had
had* as a child.

D. hope, expect, intend, plan, think 等动词用过去完成
式时表示"希望"等没有实现。如:

I *had hoped* (*or intended, expected*) to take a
vacation this summer, but I was forced to
change my plan.

E. 在上述用法中如无须强调动作是在过去某一时间之前发
生,也可用一般过去时。

The secretary did not leave until she *finished* her
work.

He said that he *left* his wallet at home.

(参阅 FRANK: *MODERN ENGLISH p.* 85—86)

过去完成时在虚拟条件句中的用法见本册第七课。

2. 过去将来时 (future-in-the-past indefinite tense)

1) 过去将来时按 Br E (British English) 的习惯是由
"should (第一人称时用)或 would (第二、三人称时
用)+动词原形"构成,但 Am E (Amerian English)
不分人称一律用would。例:

$$I \text{ said that } I \begin{cases} should \text{ (Br E)} \\ would \text{ (Am E)} \end{cases} succeed.$$

$$We \text{ told them that we} \begin{cases} should \text{ (Br E)} \\ would \text{(Am E)} \end{cases} be \text{ ready}$$

in a few days.

2) would go(come, leave)常用$\left.\begin{array}{c}\text{was}\\\text{were}\end{array}\right\}$going(coming,

leaving) 代替,在口语中还可用$\left.\begin{array}{c}\text{is}\\\text{are}\end{array}\right\}$going (com-

ing, leaving)的形式。例:

I ran up to tell my teacher that I *was leaving* for Shanghai next Sunday.

We wanted to know when they *were coming*.

He told us that Class A *is going* to play Class B at basketball.

3) 过去将来时在虚拟语气中的用法见第七、八课。

Reading Material

II

1. Pittsburg(h), a port and industrial centre in the coalfield of Pennsylvania, U.S.A., at the head of the Ohio River: iron and steel, chemical industries, aluminium, glass, oil refining, food processing.

2. Pennsylvania, a state of the northeast U.S.A. Capital: Harrisburg. Chief cities: Philadelphia, Pittsburg(h). Industries: iron and steel, metal products, textiles, plastics, machinery, food processing.

Listening Material

I

Sir Robert Watson Watt was a famous British physicist.

He was the first man in the world to use a radar set to find an aircraft far away in the sky.

When two nations are at war, airplanes are very useful in carrying soldiers and supplies to the front, in getting military information and bombing the cities of the enemy. Therefore it is very important to get rid of the enemy airplanes before they arrive.

Before Sir Robert Watson Watt, people used an instrument to tell where an airplane was going from the sound of its engines. But it did not work well. It was Watt who made better instruments.

In 1935, Watt was asked to produce a death-ray. Though he failed to make the death-ray, yet, in making experiments, he was attracted by a very interesting question: could aircraft reflect a radio wave?

At a big radio station, Watt did a lot of experiments with radio waves. He invented a special radio receiver with a glass screen on it like that of our TV set. When a plane was flying in the sky, it could reflect radio waves and send them back to the receiver. This was the beginning of the science of radar.

Now radar does not only play a very important part in national defence, it is also much used in other fields.

New Words: nation, front, military, bomb, fail to, national defence

There are many kinds of electromagnet waves. Light waves and heat waves are electromagnetic, and so are radio waves. Short waves can carry messages over great distances. The radio waves that bring us music and speech are usually between 200 and 600 metres long. Short-wave radio sets work on about 16-50 metres. Short waves travel round the world because they are reflected by a layer of air high up in the atmosphere. They usually travel in straight lines, but when they meet solid objects they are reflected back. This fact was taken advantage of by Watt in making radar instruments. The radar instrument can show the direction and the distance of aircraft.

It is very important for big ships on the sea to have a radar instrument on board. It is always watching the sea on all sides. If any other ship reflects the signal the instrument gives off, a white spot is shown on the screen. Big aircraft also use radar instruments to find other aircraft in the sky. Man's eyes cannot see far enough, but the radar beam has the ability to see for many, many miles away. It is known that a big jet plane flies at about 600 miles per hour, which is ten miles per minute. If two jet planes are flying towards each other, they are twenty miles nearer together after a minute has passed. This is dangerous if the pilots don't know the facts, but the radar instruments show them the facts, so they can fly the plane

safely with an instrument on board.

New Words: music, speech, on board, safely

练习参考答案

Text

B 8. used to swim every day

9. send out heat and light to the earth

10. direct our work

11. ask us to improve the radio receiver

12. arrive before the meeting

13. just like a modern television set

14. find a valuable metal by chance

15. cross the ocean safely

C 1. B   2. C   3. A   4. C   5. A   6. C

D 1. 1) used to be   2) work well

3) was asked   4) agreed, should

5) sent out   6) by chance, crossing

7) was arriving   8) wondered, would

2. 1) from   2) during   3) into   4) about

5) to   6) at   7) like   8) by

E 1. This radar set works very well

2. People used to get drinking water from the river

3. The enemy planes would be found easily

4. We'll not agree to let you make

5. because he had seen a lot of reflections on the screen

F 1. He was asked to explain the principles of the