AN ENGLISH COURSE

for Students of Science and Engineering

Book 2

英语教程

（理工科用）

第二册

清华大学外语教研室

陆　慈（主编）　王文佳　赵静鹏（副主编）

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高等教育出版社

内 容 提 要

本书为高等院校理工科通用的基础阶段英语教材，共分四册（配有教师参考书和录音磁带），适于已掌握约450个基本词汇和初步语法知识的学生使用。全书以培养阅读能力为主，兼顾听、说、写、译等几个方面的训练。

本册共十二课及两个阶段练习。每课包括课文、词汇学习、语法、对话、阅读材料及练习等几项内容，书后有构词表和总词汇表等附录。

本书自1979年起在本校和少数高等院校使用，在此基础上进行了修改。

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前　言

本书为清华大学外语教研室英语教材编写组所编《英语教程》(理工科用)第二册。教材编写原则及结构与第一册基本相同。

本册共十二课及两个阶段练习。书中出现新词约为765个(课文中427个)，词组约为135个(课文中77个)。授课时数约为74学时。每课包括课文、词汇学习、语法、对话、阅读材料及练习等几项内容。书后附不规则动词表、构词表(前缀、后缀表)及总词汇表，以供查阅。

课文(12篇)及**阅读材料**(24篇)　大部分选自近年原版英语科普读物及教科书。课文体裁有科技小品、传记、故事等，内容包括科普知识、科学展望及幻想、科学家的工作与生活等。每篇课文约1,800印刷符号，每课生词量35个左右。每课编有两篇阅读材料，在内容或语言结构上与课文有一定的配合，每篇约1,500印刷符号，生词量约为15～20个，可视学生水平及学时情况选用。从本册起，阅读材料及对话中的新词只注一次，不再重注。

词汇学习　主要对各课出现的部分常用词(包括结构词)从词义、搭配关系及词类转换等方面进行一定的讲解和对比。此外还编有一部分基本构词知识，以便于学生分析、记忆单词，扩大词汇量。

语法　包括动词时态(过去完成时，过去将来时)、非限定动词(动词不定式、动名词、分词)、动词语气(主要讲虚拟语气)、强调句型、补足语及定语从句等。其中动词时态、动词不定式及定语从句等属语法学习第二循环的内容。

对话　以生活题材为主，如：谈学习、看电视、打电话等，每课生词量为5个左右。这部分材料可在课堂上进行口头练习，也可供学生在课外开展简单的会话活动使用，但不作教学要求。

练习 有分课练习和阶段练习两种形式。分课练习供单课巩固、复习使用，由课文练习、词汇学习练习和语法练习三个部分组成。课文练习以巩固课文重点为主，兼顾语法学习及旧课复习，是分课练习的重点。词汇和语法练习是专题性的，附于相应的讲解部分之后。阶段练习是综合性的，供阶段复习使用。

注释 目的为便于学生课前预习及自学，侧重内容理解上的注释，也包括超前出现语法现象的注释。

本书除课本外，还配有教师参考书和录音磁带。每课的听力材料附于教师参考书内。

参加第二册的审稿人员有：重庆大学韩其顺、何宗禄（主审）、北方交通大学李津、天津大学张同琦、上海交通大学冯玉柱、华中工学院秦傲松。上海交通大学凌渭民、山东大学金诗伯及试用过本教材初稿的兄弟院校提出了书面意见。

审阅过本书初稿或修改稿的还有美国明尼苏达大学副校长 **Dr. Robinett** 及英国专家 **Mr Norrish, Mr Garwood, MsHenderson, Ms Hollman, Ms Mulvey, Mr McGuigan**。美籍教师林伯那也参加了本册的编写工作。本册插图绘制者为徐正。另参加本册初稿编写工作的还有清华大学罗兰、吴古华。

由于编者水平所限，缺点错误一定不少，欢迎批评指正。

编 者

1981年6月

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Lesson One

TEXT:	Sir Robert Watson Watt
WORD STUDY:	I. use
	II. agree
	III. arrive
GRAMMAR:	I. 过去完成时
	II. 过去将来时

TEXT

Sir Robert Watson Watt[1]

How do we find aircraft far away in the sky? Soldiers used to have an instrument which found them from the sound of their engines. It did not work very well, and we have better instruments now. A plane can be found when it is far away, even when its engines are not working. This is one result of the work of Sir Robert Watson Watt.

During the first part of his life, Watt studied weather and storms. He used radio waves in his work, and directed them up into the sky; they were sometimes reflected back to earth by the ionosphere. This gave him valuable information.

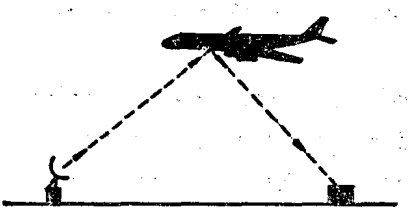
There were some strange ideas about electromagnetic waves before the Second World War. One was that a death-ray could be produced, which would kill enemies

far away. In 1935 Watt was asked to make a death-ray. Watt did not believe that this was possible but he agreed he would study the matter.

After he had made some experiments, he discovered that it was not possible to produce a death-ray. But he wondered whether an aircraft would reflect a radio wave. If it did that, it would be useful.

There is a big radio station at Daventry[2] and he decided to make some experiments with its waves. He made a special radio receiver which had a glass screen like the screen of a modern television set. When no signal was arriving, the screen showed a white spot only; but if a signal reached the receiver, the spot changed to a line.

A pilot then took an aircraft up and Watt watched the spot. Suddenly it changed to a line! The plane was reflecting the waves from Daventry and they were sent back from the sky to the receiver.



Watt built a special transmitter to send out the necessary waves, and tried again with that. He and his men suddenly saw a lot of reflections, and Watt cried, "There are three aircraft up there!" He was right. By chance three aircraft had crossed the sky and his transmitter had found them. This was the beginning of the science of radar.

NEW WORDS

1. sir [sə:] *n.* 先生,阁下;爵士(S 大写)
2. aircraft ['ɛəkrɑ:ft] *n.* (单复同) 航空器;飞机
3. soldier ['səuldʒə] *n.* 士兵;战士
4. instrument ['instrumənt] *n.* 仪器,工具;装置
5. engine ['endʒin] *n.* 发动机,引擎
6. weather ['weðə] *n.* 天气
7. storm [stɔ:m] *n.* 风暴
8. direct [di'rekt, dai'rekt] *vt.* 指引;指导;把……对准某一目标(或方向)
   vi. 指导,指挥
   a., ad. 径直的(地),直接的(地)
9. ionosphere [ai'ɔnəsfiə] *n.* 电离层
10. valuable ['væljuəbl] *a.* 贵重的,有价值的,宝贵的
    n. [常用复]贵重物品
11. information [infə'meiʃən] *n.* 通知;情报;资料
12. strange [streindʒ] *a.* 奇怪的
13. war [wɔ:] *n.* 战争
14. death-ray ['deθ-rei] *n.* 死光
15. kill [kil] *vt.* 杀死
16. enemy ['enimi] *n.* 敌人
17. agree [ə'gri:] *v.* 同意,赞同,答应
18. wonder ['wʌndə] *v.* 怀疑;想知道
    n. 惊奇;奇迹
19. special ['speʃəl] *a.* 特殊的,特别的;专门的,专用的
20. receiver [ri'si:və] *n.* 接收机;接受器
21. screen [skri:n] *n.* 屏;幕;荧光屏
22. modern ['mɔdən] *a.* 现代的;新式的
23. arrive [ə'raiv] *vi.* 到,来到;达到
24. pilot ['pailət] *n.* 飞行员;领航员
25. necessary ['nesisəri] *a.* 必要的,必需的

26. reflection [ri'flekʃən] *n.* 反射;映象;反射波
27. cry [krai] *vt.* 叫喊;大声地说
vi. 叫喊;哭
28. cross [krɔs] *v.* 越过,穿过;横过
29. beginning [bi'giniŋ] *n.* 开始,开端
30. radar ['reidə] *n.* 雷达,无线电探测器

PHRASES AND EXPRESSIONS

used to (*inf.*) 过去常常(做),过去总是(做)
send out 发送;发射
by chance 偶然;意外地

Notes:

1. Sir Robert Watson Watt ['rɔbət'wɔt-sn wɔt]: 罗伯特·沃森·瓦特爵士(1892—1973),英国物理学家。
2. Daventry ['dævuntri]: 达文特里,英国城市。

EXERCISES TO THE TEXT

A Answer the following questions:

1. How did soldiers find distant aircraft before the invention of radar?
2. What did Watson Watt study during the first part of his life?
3. Why did he direct radio waves up into the sky?
4. Did Watt believe that a death-ray could be produced?
5. What did Watt discover after making some experiments?
6. Why did Watt decide to make some experiments with radio waves?
7. Where did he make his experiments?
8. What did the screen of Watt's radio receiver look like?
9. What was seen on the screen when a signal reached the receiver?
10. Why did Watt and his men see a lot of reflections on the

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screen?

B Translate the following phrases and expressions:

1. used to make engines for cars
2. send out great amounts of radiant energy
3. be directed at the enemy plane far away
4. ask his men to study the matter
5. produce the necessary radar beams
6. find the distant aircraft by chance
7. cross the mountain in half an hour
8. 过去每天都游泳 used to swims every day
9. 向地球发出光和热 send out light and heat to the earth
10. 指导我们的工作 direct our work radio
11. 要求我们改进这台无线电接收机 Ask us to promove the receiver
12. 在会前到达 arrive before the beggins of meeting
13. 就象一台现代化的电视机 just like a modern television set
14. 偶然发现了一种宝贵的金属 discover a kind of metal by chance
15. 安全地越过海洋 across the ocean in.

C Choose among A, B and C according to the text:

1. Before the invention of radar, airplanes were found
   A. with a TV set.
   B. from the sound of their engines.
   C. by a death-ray.
2. During the first part of his life, Watt
   A. used radar in his work.
   B. used rockets to direct electromagnetic waves.
   C. used radio waves to study weather and storms.
3. Before World War II it was thought that a death-ray could be produced, which
   A. would kill enemies far away.
   B. would find aircraft in the sky.
   C. could give people valuable information.

4. Through his experiments, Watt discovered that
   A. it was possible to make a new weapon.
   B. it was possible to find a plane with a death-ray.
   C. it was impossible to produce a death-ray.
5. Watt decided to make some experiments at the Daventry radio station to see
   A. whether an airplane would reflect a radio wave.
   B. whether it was possible to build a new type of transmitter.
   C. whether he could make a modern television set.
6. Watt and his men saw a lot of reflections on the screen, because
   A. the transmitter did not work well.
   B. the aircraft was flying too fast.
   C. there were three aircraft up in the sky.

D Fill in the blanks:

1. Fill in each space with one of the given words or expressions: sent out, agreed, was arriving, would, crossing, by chance, wondered, work well, should, used to be, was asked
   1) There ____ a small factory at the corner of M street.
   2) As the radar instrument we use does not ____, we must make some improvements in its structure(结构).
   3) He ____ to help the students in their studies of ionosphere.
   4) We all ____ that we ____ work out a new plan.
   5) When we arrived at the radio station, the message of a successful moonlanding had already been ____.
   6) I met Comrade Li ____ yesterday when I was ____ the street.
   7) The reflections on the screen showed us that a signal ____.
   8) They ____ if the special transmitter necessary for our experi-

ment ___ be built in time.

2. Fill in the blanks with prepositions listed below:
to, like, from, about, by, at, during, into

1) We'll know whether it's a big airplane or a helicopter ___ the sound of its engines.
2) He spent a lot of time studying the planet ___ the early part of his life.
3) The firemen (消防队员) directed the jet of water (喷出的水柱) ___ the room.
4) That technician (技术员) who has been asked to study the matter has new ideas ___ electricity.
5) The white spot on the screen changed ___ a line, because a signal had reached the receiver.
6) Can you tell me if there is a power station ___ Daventry?
7) Just ___ heat waves, radar waves are electromagnetic waves.
8) The enemy planes were found only ___ chance before the instrument was invented.

E Translate the Chinese in the brackets into English:

1. ___ (这台雷达装置运转得很好), so you don't need to worry (担心) about it.
2. ___ (人们过去总是从这条河里取饮用水), but now the water is so polluted that it is unfit for drinking.
3. They were told that by using radar ___ ___ (敌机将很容易被发现).
4. ___ (我们不同意让你做) such a dangerous (危险的) experiment.
5. Watt knew that there were some planes in the sky, ___ ___ (因为他在屏幕上看到了许多反射波).

F Translate the following sentences into English:

1. 人们曾经要求他解释这一专用发射机的原理。
2. 在他到达以前，那里已经建造了一座雷达站。
3. 瓦特想知道雷达是否能通过无线电波的反射来发现飞机。
4. 瓦特同意去做一些关于(on)死光的实验。
5. 你是否相信任何人都能偶然地做出发明？
6. 大型飞机利用雷达寻找空中的其他飞机，因为雷达可以"看到"远处的东西。
7. 有一些无线电信号碰到固体目标(solid objects)时就被反射回来。例如，当电视信号碰到墙壁、房屋以及天空中的飞机时，它们就被反射回来。现在人们广泛地(widely)应用这些反射波。

WORD STUDY

I. use 的用法

词类、词义	例　　句
vt. 使用，利用	Electric energy is widely *used* in industry. 电能在工业上使用得很广泛。
n. 用途，用处	Radio has a lot of *uses*. 无线电有许多用途。
used to (*inf.*) 过去常常(做)	People *used to* burn kerosene to get light, but now they use electricity. 过去人们点煤油来照明，而现在使用电了。
be used to 习惯于	He *is used to* hard work. 他习惯于艰苦的工作。
make use of 利用	We must *make* full *use of* the energy from the sun. 我们必须充分利用太阳能。

II. agree 的用法

词类、词义	例　　句
v. 答应，同意	They *agreed* to help us. 他们答应帮助我们。 I *agree* that we should spend more time on English. 我同意我们应在英语上多花些时间。
agree to 赞同，同意	Do you *agree to* such a decision? 你赞同这样一个决定吗？
agree with 与…意见一致，同意	He quite *agrees with* you. 他很同意你的意见。 I am far from *agreeing with* what you say. 我很不同意你所说的话。

Note:

agree to 后面一般接事物，如"建议、计划、决定"等，而 agree with 后面一般接人，也可接表示"意见、看法"的词或句子。

III. arrive 的用法

词类、词义	例　　句
vi. 到，来到	Mr. Smith will *arrive* by ten o'clock. 史密斯先生至迟十点钟到达。 The delegation *arrived* in China yesterday morning. 这个代表团昨天上午到达中国。 He *arrived* at the institute in time. 他及时赶到学校。
arrive at 达到，得出	It took us a lot of time to *arrive at* the conclusion. 我们花了许多时间才得出这个结论。 They finally *arrived at* a decision on the matter. 最终他们对这件事作出了决定。

Note:

arrive 在表示"到达"大的地点，如"国家"、"大城市"等时，一般用 in；表示"到达"小的地点，如"学校"、"车站"等时一般用 at。

EXERCISES

A Translate the following sentences into Chinese, paying attention to the meaning of "use", "arrive", and "agree":

1. He used to do experiments with these tools and devices.
2. Steel is of great use in industry.
3. We are used to living in the countryside.
4. The laser in the shop is used to make holes in steel.
5. What did early (早期的) sailors (海员) make use of to find their way across the sea?
6. He agreed to direct me to the Museum of the Chinese Revolution.
7. He agrees that we should work out a new plan.
8. Did they arrive in Shanghai safely?
9. How did you arrive at that good idea?
10. Watt arrived at the conclusion(结论) that it was impossible to produce a death-ray.

B Fill in the blanks with the proper words and phrases in the brackets:

1. Soldiers ____ (was used to, used to) find airplanes from the sound of their engines, but now they make use of a radar.
2. He lived in the North (北方) many years, so he ____ (used to, is used to) cold weather.
3. My younger brother does not watch TV as often as he ____ (used to, was used to).
4. The workers have agreed ____ (with, to) the new method.
5. They all agreed ____ (with, to) Xiao Li in thinking that the new instrument should be made a little smaller.

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