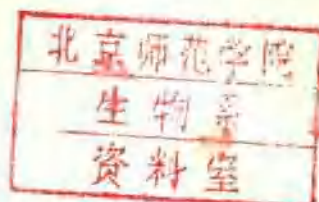


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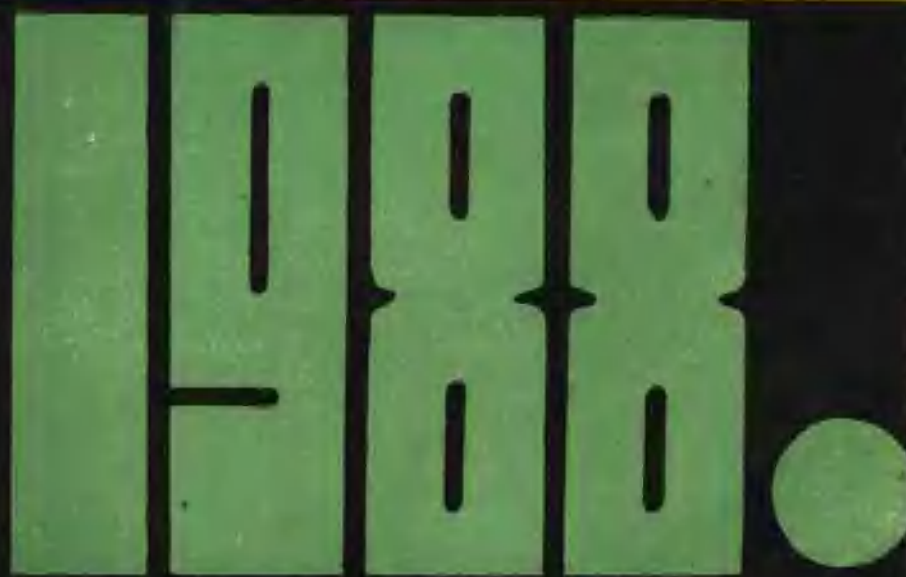


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本社地址: 上海淮海中路 1984 弄 19 号

银行帐号: 沪徐办华分处 271-04604759

编 辑 者	上海交通大学科技英语中心	发 行 者	上海市报刊发行处
出 版 者	上海交通大学出版社	订阅地点	全国各地邮局
印 刷 者	上海市印刷十二厂	出版日期	每月 20 日
国外总发行	中国国际图书贸易总公司(中国国际书店)北京 2820 信箱		
国内统一刊号	CN31-1172	邮局代号	4-303
		国外发行号	M76

定价 0.30

科技英语学习(月刊) EST Learning

1988 年第 1 期 总第 85 期

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致 读 者

亲爱的读者：

在这新春伊始之际，《科技英语学习》编辑部谨向你们致以衷心的祝贺。祝愿你们在党的第十三次代表大会新形势的鼓舞下，在新的一年里取得更大的成就。

《科技英语学习》已步入第九个年头。八年来，在广大读者和热心的作者的支持和鼓励下，我们的杂志取得了一定的成绩。在新的一年里，我们打算进一步改进编辑工作，更好地为读者服务。

《科技英语学习》将以大学英语教学为中心，并继续体现科技英语的特色。我们将根据国家教育委员会批准的《大学英语教学大纲》，努力帮助理工科大学学生和科技人员发展英语实用能力，特别是英语阅读能力和写作能力。我们将刊登阅读技能讲座和各种训练阅读技能的练习；精选各种题材的读物，读者通过阅读，既能提高理解英语的能力，又能从中获得一定的科学知识。我们将开辟英语写作系列讲座，介绍各种写作经验，刊登多种形式的写作练习。除此之外，我们将继续办好“科技英语听力训练”、“功能与意念”、“英译汉实例分析”、“词义辨析”、“新词语”等专栏，发表各种有关英语语法、词汇和翻译等方面的文章。

国家教委组织的首次大学英语四级考试(CET4)已于去年九月进行，有十万余大学本科生参加了考试。今年的考试将在六月举行。不久还将举行大学英语六级考试(CET6)。为配合大学英语考试、硕士研究生入学考试和各种出国考试，我们将每期都刊登各种模拟试题和有关应试经验的文章。

我们将继续乐意回答读者提出的各种有关的问题。

我们真诚希望读者对《科技英语学习》的办刊方针和所发表的每篇文章，提出宝贵的意见。我们热烈欢迎新、老作者为刊物提供稿件。稿件不论刊登与否，我们都将及时回复。

让我们共同为办好《科技英语学习》而努力。

《科技英语学习》编辑部

2 阅读技能讲座

如何阅读说明段

秦 常

说明文对人物或事物作出分析、解释和概括。它与描写文不同，描写文着重描写事件发生的时间、地点、过程、顺序等，以及事物的特征和作用。说明文的特点是说明道理。这种体裁常出现于科技文献和教科书的前言。我们现在介绍的是说明段，因为有些其他体裁的文章(如记叙文、描写文)也会包含说明道理的段落。

下面的一个例子运用因果关系，说明英镑贬值的道理：

E1 The pound is falling because foreigners have no confidence in Britain. They have no confidence in us because we are up to the neck in debt abroad, and our exports suffer from the handicap of a rate of inflation 75 percent higher than that of our foreign competitors. The falling pound makes the inflation worse, by pushing up the cost of imports, and forcing us to borrow more.

英镑正在贬值，因为外国人对英国没有信心。外国人对我们没有信心，因为我们外债累累，还因为我们的出口货物受到通货膨胀的拖累，英国的通货膨胀率比外国竞争者高出75%。英镑的贬值抬高了进口货物的价格，迫使我们借更多的外债以保持进口，结果通货膨胀更趋恶化。

E1 通篇使用了因果关系的手法。图解如下(见下页)：

从上表可以看出，为了说明英镑贬值的道理，作者使用了因果关系套因果关系的表现手法，其语言体裁形式大致上有三类。

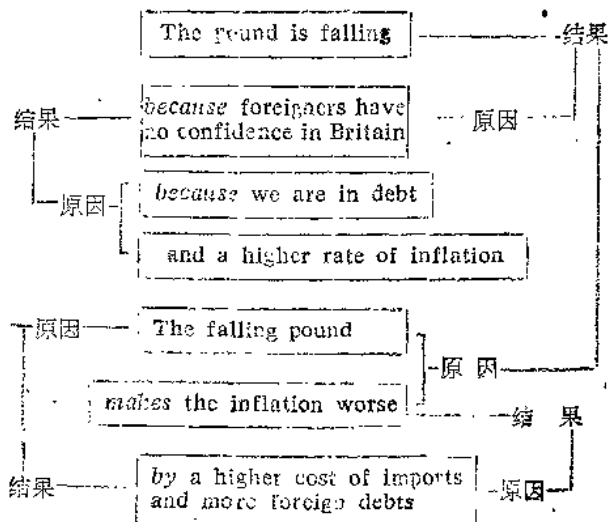
1. 连接词(这是最常见的)，如 because, as, so, therefore 等。

2. 介词，如 because of, by 等。

3. 实词，如 to make, to result in, to result from, the result, the reason 等。

如果确定某个段落是说明段，我们可以从以上几种语言体现形式寻找因果关系，掌握说明文表达的主要信息。

再看另一说明段。这段使用的还是因果关系，但并不象 E1 那样明显，只有通读了全文才能领会其中的因果关系。



E2 Why do the British drive on the left? The heart is on the left side of the body. In the more primitive forms of warfare some type of shield is therefore used to protect the left side, leaving the offensive weapon to be held in the right hand. The normal offensive weapon was the sword, worn in a scabbard. If the sword was to be wielded in the right hand, the scabbard would have to be worn on the left side. With a scabbard worn on the left, it became impossible to mount a horse on the left side unless intending to face the tail. But if you mount on the near side, you will want to have your horse on the left of the road, so that you are clear of the traffic while mounting. It therefore becomes natural and proper to keep to the left.

英国人为什么靠左驾驶汽车？心脏位于胸腔左侧。于是在一些原始战争中，盾牌被用来保护左胸部，进攻武器是用右手握的。进攻武器通常是剑，剑入剑鞘，佩带在身上。如果用右手挥剑，剑鞘一定要挂在左侧。如果剑鞘挂在左侧，就不可能从马的右侧上马，除非骑马者面向马尾上马。但是要想从马的左侧上马，马要停在路的左侧，这

样，上马时你不受一切交通的影响。所以，靠左行驶既自然又合适。

这个段落回答“英国人为什么靠左驾驶汽车？”首先说清古代骑士左侧上马的道理，接着说清马停在道路的左侧便于骑士上马的道理。这一古代习俗沿用至今，形成汽车靠左行驶的习惯。说清道理是说明文的重要标志。整个段落使用的也是因果关系的写法。从“The heart is ..”开始，到“while mounting”，都是原因。最后一句“It therefore .. to the left”是结果。连接词是 therefore。在这总的因果关系之下，作者还多次使用了低一层次的因果关系，你能分析出来吗？

第三个例子是说明“象征法”的一小段文字。作者使用的是“举例”的手法。举例是为了更好地说明作者想要表达的主要信息，因此是次要信息。如果读者对主要信息已有了解，举例部分可忽略不读。

E3 Everywhere we turn, we see the symbolic process at work. Stripes on the sleeve can be made to stand for military rank, rings of gold or pieces of paper can stand for wealth; crossed sticks can stand for a set of religious beliefs. There are few things that men do or want to do, possess or want to possess, that have not, in addition to their mechanical or biological value, a symbolic value.

无论我们去哪里，我们都能看到象征法在起作用。袖子上的条条杠杠用来表示军衔；金戒指或一张张纸代表财富；交叉成十字的棍棒代表一整套宗教信仰。人们在做的或想做的事，人们拥有的或想拥有的东西，除了具有机械的或生物的价值之外，还具有象征的价值。

这一段的最后一句和最后一句是主要信息所在，中间的一个句子举了三个例子，以帮助说清“象征法”的道理。当然，举例部分可用 for example; for instance 等引导。

第四个例子是用统计数字帮助说清主要信息。阅读时要准确理解数字。熟悉数字的表达法和比较方式对提高阅读速度有直接的影响。

E4 Deaths and injuries from motor-vehicle accidents are reaching epidemic proportions in developing countries around the world. Traffic accidents in the young nations of Africa amount to a 'social disaster', and all too often the victims are young, educated Africans whose increased earning power

has enabled them to buy a motorcycle or an automobile.

About 250,000 people throughout the world are killed in traffic accidents each year, and more than seven million are injured. Although the US has the highest number of people killed in traffic accidents of any country (about 50,000 per year), it has one of the lowest rates of fatalities per passenger mile. For example, in the US there are 6 fatalities per 100 million passenger miles, whereas in Kenya and Uganda there are from 55 to 65 fatalities per 100 million passenger miles. In India the fatality rate per motor vehicle is 10 to 15 times higher than it is in the US.

The majority of developing countries have a higher incidence of traffic accidents involving pedestrians than of accidents involving motor vehicles alone. Among the causes are poor roads, pedestrian ignorance of road signs, lack of instruction in the use of roads and heavy pedestrian and bicycle traffic on the roads.

由机动车车祸造成的伤亡正在全球发展国家中达到流行病蔓延的程度。在非洲的年青国家中交通事故简直成了一种“社会灾难”，交通事故的受害者经常是受过教育的非洲青年，他们提高了的工资收入已经使得他们能够买摩托车或小汽车。

全世界每年在交通事故中丧生的有 25 万人，此外还有 7 百万人受伤。虽然美国在交通事故中丧生的人数最多（每年约 5 万），但是以每乘客英里计算，美国是丧生率最低的国家之一。例如，在美国每 1 亿乘客英里丧生者为 6 人；与之相比，在肯尼亚和乌干达，每 1 亿乘客英里丧生者达 55—65 人。在印度每机动车的丧生率比美国要高出 10—15 倍。

大多数发展中国家涉及行人的车祸率比仅仅涉及机动车的车祸要高。原因是道路太差，行人不把路标当作一回事，道路不设使用指导，行人和自行车拥挤不堪。

E4 这篇说明文共有 3 段。第 1 段说明发展中国家车祸成灾。第 2 段用统计数字证实上述论点。第 3 段说明造成车祸的原因。阅读这类文章时，不仅要注意主要信息（如 E4 的“发展中国家车祸成灾”），还要能熟练地使用

数字表达法以掌握统计数字传递的信息。E4 第二段的数字表达有:
 about 250,000 people from 55 to 65 fatalities
 per year; per passenger year 10 to 15 times higher
 说明段中也有使用对比手法的, 下面就是这方面的例子。

E5 Still another way to differentiate between centripetal and centrifugal forces is to observe that the two forces are never applied to the same object. In the case of the twirling ball, for example, centripetal force is applied to the ball while centrifugal force is applied to the string. In the case of an orbiting space vehicle, centripetal force is applied to the vehicle by the earth's gravity, Centrifugal force is applied to the earth by the moving vehicle.

另一种区分向心力和离心力的方法是, 这两种力从不作用于同一物体。例如, 在快速旋转球的情况下, 向心力作用于球上, 而离心力作用于绳子上。在沿轨道运行的宇宙飞行器, 地球的引力把向心力作用于飞行器上, 运动着的飞行器把离心力作用于地球上。

E5 的第一句说明 “the two forces are never applied to the same object”。第二句既是举例, 又是使用对比向心力和离心力的手法把道理说清楚。这里表示对比的连接词是 while。

小结: 1. 说明文的特点是说明道理, 而这些道理总的来说是公认的道理。

2. 为了说清道理, 说明文中常用因果、举例、统计数字、对比等表达法。掌握这些表达法的语言体现形式对提高阅读效率有一定的帮助。

(上接第 16 页)

(答案见下期)

research on the speed of sound. ()

4. Dr. Wang finally found the source of the problem. It was a mathematical mistake made by Dr. Hardy in 1910. ()

5. In standard air the speed of sound does not change. but in the air around us it changes greatly. ()

6. The change in the speed of sound affects the work of sound scientists and engineers greatly. ()

7. Dr. Wang's discovery can help improve instruments that use the speed of sound to measure short distances. ()



Beam It Up Scotty^①

An aircraft can stay airborne^② until the fuel for its engines runs out, which is not very long. Lockheed-Georgia^③, a division of Lockheed Corporation, an American aircraft manufacturer, reckons it has found a way to keep an aircraft continuously flying for months -- with an energy beam sent up from the ground.

The idea is that a pilotless robot aeroplane, known as a drone^④, would get its power from microwaves beamed up from a field of magnetrons^⑤ similar to those in a microwave oven. Antennae below the wings of the drone would pick up the microwave energy and convert it into a direct current to run an electric motor turning a propeller.

In a study for NASA's Marshall Space Flight Centre^⑥, Lockheed reckons a magnetron field measuring 100 yards by 100 yards (the size of London's Trafalgar Square^⑦) would provide 2 megawatts of microwave energy (enough for 2,000 electric fires). The drone would be able to collect 30 kilowatts of the energy, enough to run a 40-horsepower electric motor.

A drone with a wingspan^⑧ of about 150 feet would fly in a figure-of-eight pattern^⑨ above the magnetron field at a height of 70,000 feet, close to the edge of space^⑩. Mr Don Bouquet, manager

① Beam it up, Scotty: 斯考蒂, 用波束使它飞行吧! ② stay airborne: 保持在空中飞行。 ③ Lockheed-Georgia: 洛克希德公司乔治亚分公司。 ④ drone: 遥控无人驾驶飞机。 ⑤ magnetron: 磁控管。 ⑥ NASA's Marshall Space Flight Centre: (美国) 国家航空和航天局的马歇尔空间飞行中心。 ⑦ London's Trafalgar Square: 伦敦的特拉法加广场。 ⑧ wingspan: 翼展。 ⑨ in a figure-of-eight pattern: 以8字形路线。 ⑩ close to the edge of space: 接近太空边缘。

of the project at Lockheed, reckons the drone could stay aloft for about 90 days and perhaps longer if high-endurance components were used.

What would it do? The drone could carry up to 150 lbs of sensing equipment to gather continuous information on, for instance, traffic snarl-ups⑪, crops, and forest fires. Or it could work like a communications satellite, relaying transmissions⑫. First on to the drawing board⑬ is a pilotless craft, known as the Carbon Dioxide Observation Platform System. This could be used to monitor carbon dioxide at high altitude over a long period.

Although the electricity bill would be huge, Mr Bouquet says the drone would still work out much cheaper than a \$500m satellite-plus launch⑭. Unlike a satellite, a drone could be flown back to the ground for maintenance or for new sensors to be installed.

Of course, turning a chunk of the sky⑮ into a huge microwave oven has its drawbacks. Normal aircraft would have to be forbidden from flying near the beam. A low flying duck would be fried alive.
(From *The Economist*, May 9, 1987)

⑪ traffic snarl-up: 交通混乱状态。 ⑫ relaying transmissions: 转播无线电通讯。此现在分词短语作状语。 ⑬ drawing board: 制图板。全句意思是: 首先要设计的是一种称做“二氧化碳观测台系统”的无人驾驶飞机。⑭ 全句意思是: 虽然电费支出可能很大, 但布凯先生说, 算下来这种无人驾驶飞机会比5亿美元的卫星连同发射费用便宜。 ⑮ a chunk of the sky: 一大片天空。

(郑锡荣 注)

Answers to Exercise on Similar Words on pages 18-19

- | | | | |
|------------|-----------------|-------------|--------------|
| 1. advise | 2. awaits | 3. waked | 4. baggage |
| 5. cleanse | 6. continuous | 7. economic | 8. specially |
| 9. ideal | 10. machinery | 11. adapt | 12. effected |
| 13. raise | 14. sow | 15. accent | 16. access |
| 17. adept | 18. corporation | 19. dump | 20. desserts |



Permission 的表达

白 凡

Permission (允许)是英语日常交际中使用很频繁的一种功能,在具体语言场合又有请求允许 (Seeking Permission) 和表示允许或不允许 (Granting Permission/Denial of Permission) 之分。下面分别介绍它们的语言表达形式:

一、表达请求允许

1) 用“can, could, may + 第一人称 I”构成的疑问句。例如:

Can I use your pen?

Could I keep this book for another week?

May I park my car here?

用 can, could, may 表达 Seeking Permission 礼貌程度依次递增。

2) 用带 if 从句的疑问句。例如:

Is it alright if I leave ten minutes earlier?

Would it be all right if I borrowed your ladder now?

用 would it ...? 比用 Is it...? 客气; would 有虚拟意义, 所以 if 从句中的动词要用一般过去时。

3) 用“mind+动名词词组/if 从句”构成的疑问句。例如:

Anybody mind if I shut the windows?

Do you mind my turning on the cassette player?

Would you mind if I played the piano now?

Anybody mind ...? 一般用于同时向许多人请求允许, 语气比较随便。用 would you ...? 比用 Do you...? 客气; would 有虚拟意义, 后面 if 从句的动词要用一般过去时。

4) 用“wonder+if 从句”构成的陈述句。例如:

I wonder if I could use your telephone.

如果用 wondered 或 was wondering 则更正式、婉转, 带有试探、商量的口气。例如:

I wondered if you would let me go.

I was wondering if I could hand in my report next week.

5) 用表达 Intention (意图, 参见本刊1987年第六期) 或 Volition (意愿, 参见本刊1987年第五期) 的某些句型。例如:

I'd like to attend your lecture, Professor. (=May I attend your lecture, Professor?)

I thought I'd take the examination late. (= I wonder if you would let me take the examination late.)

上面两个例句的表面意思是表示 Intention 或 Volition, 而实际含义却是 Seeking Permission。用 I thought I'd...表达, 则语气非常委婉。

6) 用permit/allow 表达的祈使句。例如:

Please allow me to say a few words of thanks here.

Permit me to lead the way.

这种用法多见于比较正式的场合, 一般说话者并不指望对方作出同意或婉谢的回答。

二、对请求允许的回答

A. 允许

针对他人提出请求允许做某事表示同意的常用语有:

OK. / Yes, sure. / Sure, go ahead. <随便>

Yes, please (do). / Go ahead, please.

Yes, you can / may.

Of course. / Of course, you may.

Yes, by all means.

All right. / That's all right.

例如:

{ A: Is it alright if I bring a friend to your party?

{ B: Yes, of course.

{ A: May I sit here?

{ B: Yes, by all means.

{ A: Do you mind my taking this chair away?

{ B: No, of course not.

{ A: Can I use the bathroom now?

{ B: Sure, go ahead.

注意: 回答 Do you mind ...? 时, 如表示同意要用 No, 意为 I don't mind, 如用了 Yes 却表示了不同意的意思。

B. 不允许

针对他人提出请求允许做某事表示不同意的常用语有:

No, you can't. <直率>

No, I'm afraid you can't.

No, please don't.

That's not a good idea.

I'm sorry but that's impossible.

I'd rather you didn't, if you don't mind. <礼貌>

例如:

{ A: Is it all right if I put a record on?

{ B: No, please don't.

{ A: Can I go now?

{ B: No, you can't.

{ A: May I use this desk?

{ B: No, I'm afraid you can't.

针对有礼貌的谢绝, 提出请求允许者也有必要作出反应。一般可以用 That's OK, 或 That's (quite) all right 等。

三、主动表示允许

1) 用 can, may 表达。例如:

You may use your dictionary at the examination.

Mary can leave now.

2) 用 allow, permit 的被动式表达。例如:

You are allowed to use the typewriters only in the late afternoon.

The students are permitted to select two arts subjects when they have completed their required courses.

3) 用 if 从句表达有条件的允许。例如:

If you were a student, you could travel at half price.

If Ann wished, she could leave earlier.

这里用 if 从句表示 Giving Permission 含有虚拟意义。

四、表示不允许

这里指说话者没有针对任何人请求允许而表示的不允许，其功能相当于 Prohibition (禁止)。

1) 用否定祈使句表达。例如:

Don't stand here.

Don't use ballpens when you are doing the answer sheets.

2) 用 can, must 的否定式表达。例如:

You can't park your car here.

Shoppers mustn't queue on this side.

3) 用 allow, permit, suppose 表达。例如:

You are not allowed to bathe in this pool.

They are not permitted to use this resources room.

Miss Li is not supposed to stay on for another term.

也可以用 It is not allowed ... 表示:

It is not allowed to take a job without a work permit.

五、说明请求允许的原因

有时说话者在向他人提出请求允许时对方可能会问明原因，下面是几种常见的说明原因的表达方式:

Well, you see + 原因

Well, the reason is ...

It's because ...

... and that's why I ...

例如:

A: May I leave a little earlier today?

B: Yes, but why do you want to leave earlier if I may ask?

A: Well, you see my mother is in hospital, and I am anxious to visit her.

B: I see. All right, go ahead then.

听力训练



EST Listening Training (XI)

刘筱冬 编

[编者按: 本刊从1987年第一期起增加听力训练专栏。每次一篇文章, 并附若干练习, 每四篇组成一盒磁带。第一组及第二组共八篇听力材料分别刊登在本刊1987年第1—4期和第6—9期。从1987年第11期起刊登第三组材料, 即科技英语听力训练Ⅰ—Ⅲ。凡需购买磁带者, 请与本刊编辑部联系, 每盒六元, 包括邮资费在内。邮购时请写明订购哪一盒磁带。]

New Words and Expressions

1. by accident: by chance 偶然
2. Celsius = Celsius ('selsjəs) n. 摄氏(温度)
3. standard air 标准空气

Warm-up Exercises

Discrimination 1: You are going to hear 10 words which are used in the passage. Listen carefully and choose the word you hear from each of the following groups.

- | | | | |
|-------------------|-----------------|----------------|---------------|
| 1. a) sounder | b) soup | c) sound | d) soundly |
| 2. a) half | b) have | c) calf | d) halves |
| 3. a) discuss | b) discovery | c) discover | d) discourse |
| 4. a) incident | b) incidentally | c) accidental | d) accident |
| 5. a) microphone | b) microchip | c) microscope | d) microwave |
| 6. a) reservation | b) reserve | c) research | d) researcher |
| 7. a) stand | b) stamp | c) standardize | d) standard |
| 8. a) zone | b) zero | c) zoo | d) zoology |
| 9. a) cell | b) Celsius | c) cent | d) centre |
| 10. a) physics | b) physical | c) physicist | d) physically |

Discrimination 2: You are going to hear 5 sentences from the

passage. In each sentence there is only one word given in the following pairs. Tick the correct one.

- | | |
|-------------------|--------------|
| 1. a) by accident | b) by chance |
| 2. a) precisely | b) exactly |
| 3. a) mistake | b) error |
| 4. a) make | b) mean |
| 5. a) unlikely | b) unlike |

Passage:

The Speed of Sound

A Canadian researcher has discovered that sound travels through air more than one-half kilometre an hour slower than had been believed. The discovery has surprised many engineers and scientists who learned they had been using the wrong speed of sound for many years.

The speed of sound in air had been thought to be 331.45 metres a second. But Dr. George Wang found, by accident, that the speed of sound is only 331.29 metres a second. That is a difference of about 16 centimetres a second. Dr. Wang is a member of the National Research Council of Canada. He was studying ways to measure exactly the sound created by microphones. One of the experiments produced a number he could use to find the speed of sound. He was surprised to learn the speed of sound was slower than scientists had thought. To explain the difference, Dr. Wang spent 18 months studying past research on the speed of sound. He finally found the source of the difference. It was a mathematics mistake made in 1942 by physicist H. C. Hardy.

Dr. Wang's discovery does not mean a big change for science. This is because Dr. Hardy and Dr. Wang measured the speed of sound for what is called 'standard air'. Standard air exists only in thought. It is a way for scientists to agree on the same speed of sound. Unlike the air around us, standard air always has a