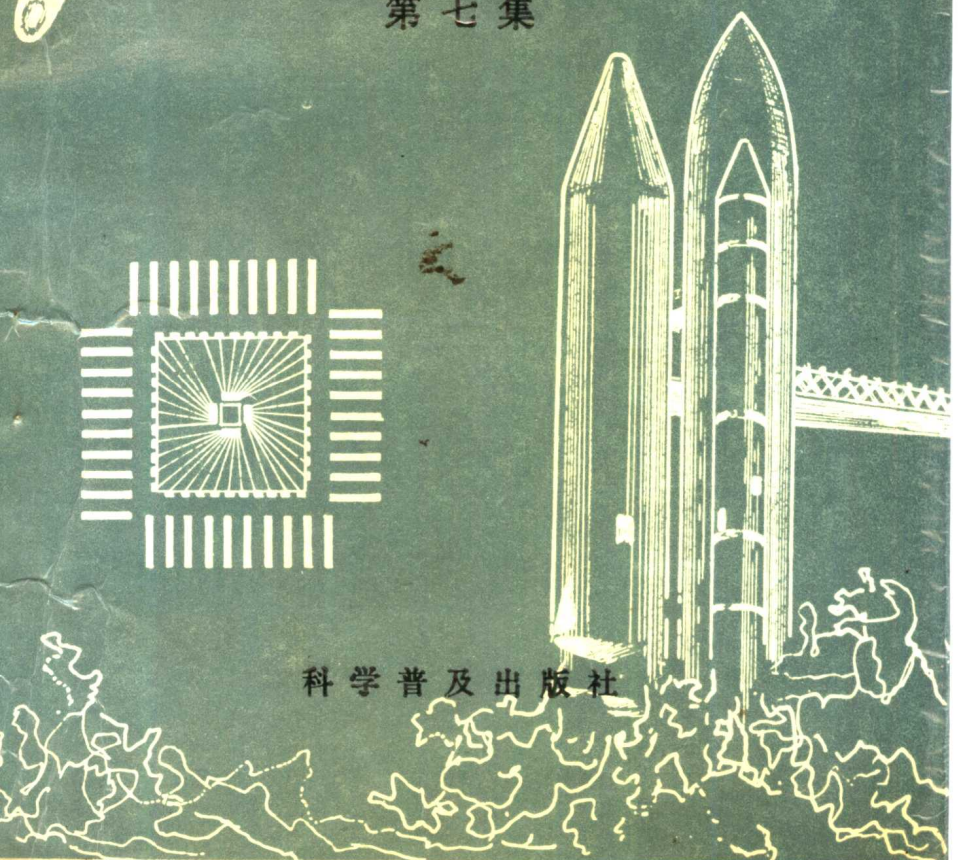
Advanced Scientific English Practice

英语科普文选

第七集



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英汉对照

英语科普文选

（第七集）

北京理工大学外语系编译

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内 容 提 要

本书共收英语科普文章30篇，全部选自近期英美报章杂志，经修改、注释和翻译，编成英汉对照读物。书的内容非常广泛，30篇文章各自展示一个方面，包括一些新的科技信息、试验方法和应用科学的成果。在英语语言构成上，本集较前6集有进一步的扩展，进入高级英语。读者可以通过学习锻炼独立阅读英文科普文章的能力。

本书的编译工作由朱美玉和李鹏飞二人执笔。

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1 China Calls in the Telephone Engineers

A few years ago, you could not even get a telephone directory in China. Now, the country is planning to spend nearly $ 18 billion in the next 15 years on improving its telecommunications with the latest digital technology.

Using the present Chinese telephone system is a baffling and unrewarding experience, even in the capital. Most of it relies on pre－war technology and there is an average of only four phones per thousand people. By the end of the century, China hopes to provide 28 telephones per 1000 people, increasing the number of lines from 5. 6 million to 33. 6 million. (By comparison, the US now has 100 million lines for a population roughly a quarter of China's.)

The plan was outlined at a Sino－American telecommunications conference in Beijing . Major cities are to have one telephone for every four people, while in the countryside — where 800 million people live — the ratio will be one per 1000.

China's plans were described as "phenomenally ambitious" by one American executive at the conference. They will certainly require vast inputs of foreign technology. The Chinese government sees telecommunications as one of the bottlenecks in its modernisation programme! It is to be given top priority, along with transprot and energy.

The country's ambitions stretch far beyond mere provision of telephone lines.[2] The government wants to introduce virtually every kind of modern communications service, including video-transmission networks, teleconferencing, high-speed facsimile, video-data communications, packet-switched electronic mail, mobile communications including cellular radio, automatic mail-handling and so on. Not content with simply acquiring the technology, China wants to build up its own technological industrial base through joint ventures and licensing agreements.

Zhang Mingde, the deputy director of the Ministry of Post and Telecommunications, listed for the conference some of the technology that China plans to import. He had a receptive audience of 46 leading American companies, gathered in a luxury hotel outside Beijing to present their wares.

The list embraces fibre optics — including factories with an output of 40,000 kilometres of cable a year, plus components and measuring devices — production lines for digital microwave, facsimile machines, letter-sorting equipment and exchanges.[3]

China is so far behind the rest of the world that it hopes to leapfrog directly to the latest technology.[4] Since China has so few telephone cables, it will not require the expensive retro-fitting needed in Western countries. Optical fibres can be laid straight away within urban areas and satellite-based networks will be viable over much shorter distances than in developed countries. Cellular networks can be built up in prosper-

ous rural areas, doing away with the need to lay expensive new telephone lines.

So far, the Japanese have garnered 75 per cent of China's imports of telecommunications technology[5] which amounted to $ 1.1 billion. American companies are only now eyeing the Chinese market.

In the past two years, China has bought programme-controlled exchange systems from ITT's Belgian subsidiary, Fujitsu and NEC of Japan, Alcatel Thompson of France and L. M. Ericsson of Sweden. Britain's Cable and Wireless agreed to carry out feasibility studies intended to lead to joint ventures in telecommunications in the Yangtze Delta. In addition, it is to be involved in setting up a $ 20 million development centre for telecommunications technology in Beijing.

Telecommunications companies in the West will undoubtedly be happy with the recent announcement that restrictions affecting sales of vast amounts of telecommunications equipment to China will be lifted.[6] Exports of advanced technology with potential military applications from NATO countries and Japan are controlled by the Paris-based organisation, Cocom.[7]

Leading manufacturers of integrated digital systems will be particularly pleased. China, along with Japan and South Korea, is regarded as a key foreign market for the systems, in which each company has invested vast amounts in recent years.

China has still to decide whose technology it wants to buy. Most of the decisions will be made in the next five years, so the better part of the planned services and new lines will appear only after 1990. Major American telecommunications companies are hoping to offer manage ment systems advice——showing the Chinese how to plan, operate, manage and repair communications systems.

For all the optimism about the Chinese market, none of the plans has "been set in concrete", as one official put it. Decision-making in China is hampered by interdepartmental battles or disputes between central and local government.

Not all key decisions are in the hands of the Ministry of Posts and other ministries may choose technology or suppliers different from those of the ministry.

Explanation of Words: 词 解:

directory [di'rektəri] a book of names and addresses 人名地址簿 a telephone book 电话簿

telecommunications ['telikə'mju:nikeiʃənz] communication by radio, telephone, telegragh, television, etc. (无线电、电话、电报、电视等之)电信,电讯

baffle [bæfl] to be too hard for (a person) to understand or solve 难住,困惑住

phenomenally [fi'nɔminli] strangely and unusually; extraordinarily 奇异地,不寻常地

ambitious [æm'biʃəs] eager for, showing ambition 热切的,雄心勃勃的

bottleneck ['bɔtlnek,'bɑutlnek] a narrow part of a road, where traffic becomes congested;anything obstructing the flow of production, etc. 交通瓶颈;生产之阻碍

video－transmission ['vidiəu－trænzmiʃən] transmission of images as in television 电视传播

priority [prai'ɔriti] coming before in order or importance 优先,居先

teleconferencing [ˌteli'kɔnfərensiŋ] consulting or discussing a matter with a person or a group of people through television 电话会议

facsimile [fæk'simail] the transmission and reproduction of graphic matter by a process involving the use of radio broadcast (无线电)传真

cellular [se'ljulə] made up of cells 多元的,由许多小单位组成的

joint venture [dʒɔint 'ventʃə] a commercial speculation through joint efforts 共同投资,合办

embrace [im 'breis, em 'breis] to contain, include 包括

leapfrog ['li:pfrɔg] to go ahead of each other in turn (蛙跳般地)使…… 交互跃进

viable [vaiəbl] capable of growing and developing 能成长发展的

garner ['gɑ:nə] to gather up; collect; get 收藏,储存,得到

amount to [əmaunt tu:] to add up to, reach in number or amount 总计,共达

subsidiary [səb'sidjəri] adj. supplementary, useful as a support 辅助的;附属的; n. a subsidiary company 附属公司,子公司

feasibility [fizə'biliti] possibility, the quality of being easily done 可行性,易实现性

hamper ['hæmpə] to prevent the free movement of, hinder 阻碍,阻扰(行动)

Comprehension Exercise: 理解练习:

1. What is China's ambition to modernise its telecommunications system?
2. Where and at what conference was the plan for improving its telecommunications outlined?
3. Why has the Chinese government decided to give prominence to the development and modernisation of its telecommunications system?
4. What kinds of technology and equipment we need did the deputy director of the Post and Telecommunications Ministry to the American audience?
5. What is Japan's position in China's imports of telecommunications technology?
6. How will the companies in the West respond to the recent announcement of the decision of Cocom to lift restrictions affecting sales of vast amounts of telecommunications equipment to China?
7. What equipment and services are Americans hoping to offer to China in this way?
8. Why does the author believe it is not so easy for China to perform its ambitions in modernizing its telecommunications system?

9. Can you sum up the things China has to do to achieve its goal in this respect according to the author?

Notes: 注 释:

1. sees telecommunications as one of the bottlenecks in its modernization programme: 句中see… as, 意为"把…看作…";bottlenecks, 原意为"瓶颈口", 此处转意为"障碍"、"阻碍…发展的一个环节"。该部分可译为"把电信看作是实现其现代化规划的一个难关"。
2. stretch far beyond mere provision of telephone lines: far beyond 在此处意为"远远超出"。该部分可译为"远远超出单纯提供电话线路的范围"。
3. fibre optics — including factories with …, plus components and measuring devices — production lines …:句中 fibre optics 是作 production lines 的名词定语的, 中间插入的介词短语 including …, plus … 用以明确 fibre optics production lines 的内容。
4. to leapfrog directly to the latest technology:此处leapfrog是一个合成动词,原意为"蛙跳"。这里指"直接跃进到采用最新技术的阶段。"
5. have garnered 75 per cent of…:此处garner是美国英语中使用的一个口语词,意为"得到"。文中转意引申为"在…中占有 75% 的份额"。
6. restrictions…will be lifted:意为"…限制将要取消"。
7. NATO countries and Japan are controlled by the Paris-based organisation, Cocom: 句中 NATO 为 North Atlantic Treaty Organisation 的缩写, 指"北大西洋公约

组织"；Cocom 为 Coordination Committee 的缩写，意为"巴黎统筹委员会"。该句可译为"北大西洋公约组织诸国和日本都接受设在巴黎的一个组织 —— 巴黎统筹委员会的控制"。

8. For all the optimism about the Chinese market…：该介词短语置于句首，此处有让步的含意，故译为"虽然对中国市场感到乐观…"。

Translation: 译 文:

中国招聘电话工程师

若干年前，人们很难在中国搞到一本电话簿。现在这个国家正在计划花约 180 亿美元在今后 15 年内以最新式的数字技术来改造它的电信。

使用当前的中国的电话系统是一种令人感到莫名其妙的，很不上算的事情，即使在首都也是如此。大部分电话系统使用的还是第二次世界大战以前的技术，平均每千人只有 4 台电话。中国希望到本世纪末为每 1000 人提供 28 部电话，从现在的 560 万条线路增加到 3360 万条(比起来，美国现在有 1 亿条线路，而其人口约为中国的四分之一)。

这一规划是在北京召开的中美电信会议上草拟出来的。主要城市每四人将拥有一部电话，而八亿人口的农村则每千人才有一部。

照一位出席这次会议的美国经理人员的说法，中国的规划是"极为雄心勃勃的"。这一规划需要大量的外国技术进口。中国政府把电信看作是实现其现代化规划的一道难关。它将与交通和能源一样受到最高重视。

该国的雄伟设想远远超越单纯提供电话线路的范围。政

府切望引进的实际上是所有种类的现代电信服务，包括：视频传输网路、电话会议设备、高速传真、视频数据电信、邮件转接的电子邮递、包括多元无线电在内的移动通讯、自动处理邮件等。中国不满足单纯地取得技术，而是想要通过合资经营和签署协定建立它自己的技术工业基础。

中国邮电部副部长张明德为这次会议列述了一些中国计划引进的技术。他是在北京郊外一家豪华的旅馆里会见聚集在这里的46家想要奉献他们产品的美国主导公司的代表时讲这番话的。

他开列的单子中有用于制造数字微波传真机，信件分检设备及交换设备的光导纤维生产线，包括年产4万公里电缆的工厂，加上部件和测量装置。

中国与世界其它地区相比差距极大，它希望直接跨跃到使用最新技术阶段。因为中国电话线路极少，它就不必象西方那样需要花很多钱搞式样翻新。光导纤维可以在城区内直接铺设，卫星基网络将能在比发达国家短得多的距离内工作。多元网络可在发达的农村地区安装，而不必再架设价值昂贵的新电话线路。

日本迄今在中国电信信技术进口中占有75% 的份额，总值达11亿美元。美国公司现在只是眼巴巴地盯着中国市场。

在过去两年中，中国购置了国际电话公司的比利时子公司、日本的富士通和日电公司、法国的艾尔克特·汤姆逊公司以及瑞典的L.M.艾利克逊公司的程控交换系统。英国有线和无线公司同意进行旨在长江三角洲地区共同投资的可行性研究，此外，英国又参与了一项在北京建立一座价值2000万美元的电信开发中心。

西方的电信公司对最近公布的解除向中国出售大宗电信设备所加的限制无疑感到高兴。北约国家和日本出口具有潜在军事用途的先进技术是受设在巴黎的一个组织—巴黎统筹委员会控制的。

集成数字系统的主要厂家尤为感到高兴。中国与日本和南朝鲜一起被认为是这种系统的重要国外市场。每一家都在这一系统中投资了巨大份额。

中国尚有待决定需要购买哪一家的技术。其中大部分决定将在今后5年内作出，因此计划建立的设施和新的线路之更好部分将只能在1990年之后出现。美国主要的电信公司希望提供管理系统咨询—教给中国人如何规划、操作、管理和维修电信系统。

尽管对中国市场有多么乐观，可是，如一个官员所说的那样，这些规划尚没有一项得到"落实"。中国的决策受到部门之间的扯皮或中央和地方政府之间的争执的妨碍。

并非所有关键性的决定都由邮电部来作，其它部亦可选择与该部不同的技术和供应厂家。

2 Pains and Needles

A few years ago, a violinist began to feel pain and numbness in her right arm. It wasn't long before the pain became too much for her to handle[1]. She could not even grip her bow to play the violin.

X-rays showed that seven discs (small, round bones) in her neck and back were badly damaged. Doctors tried everything they knew to help her. Nothing seemed to work. So, in order to stop the pain, her family doctor suggested she try something called acupuncture.[2]

Acupuncture (AK-you-punk-cher — the Latin roots acus for needles and punctura for pricking) is the placing of hair-thin needles into the skins at special points of the body to ease pain and treat ailnents.[3] Sound scary? Well, after the violinist had several sessions of acupuncture, she was free of pain for three years (but the discs in her neck and back were still damaged).

Acupuncture is the Western word for part of an ancient Oriental medical practice called Chung-i. According to a 5,000-year-old Chinese theory, every aspect of life is affected by natural forces. The theory says that disease is caused by imbalances in the flow of ch'i — the life energy force that travels through a series of "meridians" that crisscros the body.[4]

Some scientists compare this to the "electrical energy" that