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GUIDAO JIAOTONG YINGYU YUEDU

轨道交通 英语阅读



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前 言

随着我国国民经济的发展和城市化进程的加快,我国轨道交通得到长足发展。“十一五”期间,我国轨道交通的发展速度惊人,成绩举世瞩目,给世界提供了很多值得学习的经验。“十二五”期间将优先发展公共交通,轨道交通建设仍将保持较快发展,特别是高速列车、城市轨道将成为建设的重点,形成区际交通网络和城际快速网络。

但是,轨道交通在高速发展的同时,也带来了技术、安全、资金、规划等方面的问题甚至教训。和世界其他国家相比,究竟我们的轨道交通还存在哪些问题,我们应该采取什么样的发展战略,“十二五”期间轨道交通的发展如何,这些都是值得我们深思的问题。

本书主要选编了一些与轨道交通最新发展相关的英语科技文章,让读者了解轨道交通发展的最新成就,思考轨道交通在给我们带来便利的同时,我们应该注意的问题。本书选文新颖,题材广,全部选自近几年的轨道交通发展相关的英语读物,反映国内外轨道交通发展的最新成果;思辨性强,所选的文章既有轨道交通最新成果的介绍,也有对轨道交通的优点和不足的讨论,不仅能提高读者的英语阅读理解能力,而且有助于培养读者的辩证思维和思辨能力;难易适中,针对性强,尤其适合正在从事轨道交通专业学习和研究的人员,为他们进行轨道交通专业英语学习和研究打下基础;编排结构合理,共计14单元,包含轨道交通的定义、发展历史、最新成果、存在的问题和亟待解决的问题等,内容涵盖高铁、动车、地铁、轻轨、单轨、磁悬浮等交通工具和方式,每单元两篇文章,每篇文章包括阅读、生词、注释和练习四部分。

本书集高级英语阅读与轨道交通英语学习为一体,可以作为城市轨道交通专业学生的英语拓展阅读教材和城市轨道交通从业人员的参考读物,有益于读者提高英汉双语表达的能力和掌握轨道交通方面的最新成果,同时积极思考科技带给社会的进步和影响。

参加本书编写的主要人员有:范鹏华、吴敏睿、莫兴伟、张昕、吴正群、

杨红、张梅子、王惠等。刘柯宏、江楠等在材料收集给予了大力的协作和无私的贡献。

本书的编写材料选自各相关书籍、网站、期刊和报纸等，正如法国 16 世纪著名的人文主义思想家和散文家蒙田（Michel Eyquem de Montaigne, 1533—1592）所说，“It could be said of me that in this book I have only made up a bunch of other men’s flowers, providing of my own only the string that ties them together.” 我们所做的只是带领读者进入轨道交通的王国，用英语去思考。所以，如果说本书能够给读者带来一些收获的话，首先要感谢为我们提供这些最新材料的作者和参与此书编写和整理的人员，谨向他们对本书的贡献表示衷心的感谢。

Contents

| | |
|--|-----|
| Unit 1 | 1 |
| Section A The Global Rail Industry | 1 |
| Section B Global Competitiveness in the Rail and Transit Industry | 8 |
| Unit 2 | 15 |
| Section A Description of Urban Rail Transit Options | 15 |
| Section B Development of Urban Rail Transit Speeds up in China | 22 |
| Unit 3 | 28 |
| Section A Research Report on Chinese Urban Rail Transit Industry | 28 |
| Section B Rail Transit Myths—And Realities | 35 |
| Unit 4 | 42 |
| Section A The Origin of Light Rail Transit | 42 |
| Section B Rolling Stock | 48 |
| Unit 5 | 54 |
| Section A An Introduction to Light Rail Traffic | 54 |
| Section B Advances in Light Rail Technology | 61 |
| Unit 6 | 68 |
| Section A China's First Urban Monorail System in Chongqing | 68 |
| Section B Commuter Rail | 75 |
| Unit 7 | 83 |
| Section A Guangzhou Metro, China | 83 |
| Section B Guangzhou-Shenzhen-Hong Kong Express Rail Link | 89 |
| Unit 8 | 96 |
| Section A High Speed Rail in China | 96 |
| Section B High Speed Trains Are Changing China | 105 |

| | |
|--------------------------|---|
| Unit 9 | 112 |
| Section A | What Can We Learn from High-Speed Rail in China? 112 |
| Section B | Should the United States Develop the High-Speed Rail? 119 |
| Unit 10 | 125 |
| Section A | Speed Isn't Everything on China's New Rails 125 |
| Section B | China's High-Speed Rail Dilemma 132 |
| Unit 11 | 138 |
| Section A | High-Speed Passenger Rail Safety Strategy in the US 138 |
| Section B | Maglev Technologies in Germany and Japan 146 |
| Unit 12 | 154 |
| Section A | Maglev Trains: Flying Without Wings 154 |
| Section B | How Maglev Trains Work 160 |
| Unit 13 | 167 |
| Section A | Technology of Maglev (Transport) 167 |
| Section B | Is It Justified to Develop a New U.S. Maglev System? 174 |
| Keys to Exercises | 182 |
| Glossary | 206 |
| Terms | 226 |

Unit 1

Section A

The Global Rail Industry

Many countries in Europe and Asia have embraced effective policies and invested significant funds in their rail and transit sectors. Especially for intercity passenger rail, U.S. spending on rail and transit relative to gross domestic product (GDP) and population lags far behind that of these global competitors.

Relative to the size of its economy, China's investments dwarf those of all other countries, at \$12.50 per \$1,000 of GDP in 2008. Several European countries, including Switzerland, Austria, and the United Kingdom, are also making major commitments.

Although Germany has historically had one of the most extensive rail systems in the world, it currently spends a relatively small \$1.50 per \$1,000 of GDP. In the United States, even combining rail and all other public transit infrastructure, the figure is a comparatively tiny \$0.78. If private rail infrastructure (mostly for freight purposes) is included, the number rises to a still modest \$1.40.

Similar disparities between the United States and other countries are also evident in comparing combined capital and operations spending. For intercity purposes, China spent \$66 per capita in 2009, Germany \$156, France \$141, the United Kingdom \$112, and Italy \$87. By contrast, the United States spent only \$9, although the stimulus funds under the American Recovery and Reinvestment Act of 2009 (ARRA) temporarily raised this figure to nearly \$36. For urban transit infrastructure, Germany has spent \$52 per capita in recent years and France plans to spend \$57 in the coming decade, compared with a 2010 figure of \$40 for the United States. China spends \$28 per capita on subway infrastructure alone. For transit vehicle purchases, Germany spends \$36, or twice as much as

the United States.

Not surprisingly, differing levels of commitment and investment have led to highly diverging market volumes worldwide. Globally, the consulting firm SCI Verkehr reports that operation and capital budgets for passenger and freight rail were a combined \$590 billion in 2008. Another study by Roland Berger Strategy Consultants put the size of the global market for rail goods and related services in 2007 at \$169 billion, up from \$129 billion in 2006. Western Europe dominates the market, followed by Asia and the Pacific, although other regions lead in specific industry segments, such as services. About two-thirds of the market volume is considered “accessible”, meaning that orders are open to bids from international suppliers.

In 2009, the United States was the single largest national rail market (although heavily focused on freight, with 15 percent of the global market. It was followed by China (11 percent), Russia (8 percent), Germany (7 percent), and France and India (5 percent) each.

Rail vehicles account for close to one-third of the overall rail market volume. Of these, high-speed vehicles had a 30 percent market share, followed by freight wagons (28 percent), locomotives (26 percent), and metro and light rail vehicles (16 percent). Rail vehicles for passenger transportation purposes (as opposed to freight rail) account for about 40 percent of the global market for rolling stock.

The United States—and more broadly, the Americas—retains a big market share in freight rail but lags far behind in passenger rail compared to many countries, especially in Europe and Asia. In 2002, North and South America together accounted for 31 percent of the world’s diesel locomotives and a third of the world’s freight wagons, but for only 1.5 percent of the world’s passenger rail cars and less than 1 percent of electric locomotives.

For transit rail cars, the United States accounts for about 5 percent of the global fleet and for a correspondingly small portion of global demand for new cars. Canada and Mexico add another 2 percent, bringing the North American total to 7 percent. Japan is home to 11 percent of the global fleet, Europe 35 percent, and the rest of the world 47 percent. Annual U.S. orders for transit cars are erratic, swinging from a range of some 200–400 cars in most years to isolated peak years of about 1,200 in the early 1980s and early 2000s.

Rail and transit ridership are on the rise in many countries. With many new systems under construction or in the planning stages, orders for rail vehicles and buses are expected to show strong growth in the coming years—and these orders will translate into employment growth. Currently, some 400 light rail systems with more than 44,000 rail vehicles are in operation worldwide, another 60 systems or so are under construction, and more than 200 are in the planning stage. Europe has the highest density, with 170 systems and more than 7,900 miles of lines in operation and nearly 100 more in various stages of construction or planning.

North America has 30 systems in operation and 10 under construction. Asia and the Pacific is the region with the fastest growth. Globally, the light rail market might reach \$7.5 billion by 2015.

Much of the current excitement is directed toward the expansion of high-speed intercity rail (HSR) lines. In 2009, HSR lines totaling some 6,650 miles were operational, including close to 1,490 miles in Japan and about 1,180 miles in France—the two early pioneers. In 2008, European Union members had a combined high-speed network of close to 3,600 miles. The same year, the world's HSR fleet consisted of some 2,200 train sets. The vast majority of these (1,500) were in Western Europe, followed by Asia with 650, most of them in Japan.

These statistics will change rapidly as more countries jump into the fray. By 2015, the number of train sets in operation worldwide is expected to rise by 70 percent, to 3,725. Listed in order of their track-building ambitions between now and 2025, the front runners include China, Spain, France, Japan, Turkey, Germany, Italy, Poland, Portugal, the United States, Sweden, Morocco, Russia, Saudi Arabia, Brazil, India, Iran, Korea, Argentina, Belgium, the Netherlands, the United Kingdom, and Switzerland.

China is in the process of building the most extensive HSR system worldwide, with a total length of more than 15,000 miles. But the densest network is emerging in Spain, which has a goal of 6,200 miles by 2020. If China were to match Spain's effort relative to land size, it would have to build 118,000 miles of lines; in proportion to population, it would have to build 176,000 miles.

Likewise, if the United States were to match Spain's commitment, it would have to build 118,000 and 41,000 miles, respectively.

Economic stimulus programs in several countries are providing substantial sums for passenger rail over the next five years. U.S. stimulus funds of \$11 billion are dwarfed by \$28 billion of funds in Western Europe and a staggering \$118 billion in China. In part because of these funds, the global rail market is expected to resume its growth trajectory and may reach \$214 billion by 2016. Western Europe is projected to remain the single most important regional rail market, but Asia and the Pacific will surpass the NAFTA region to become the second largest market. For rolling stock orders, Europe is the largest regional market and is expected to retain its lead during the next several years.

Words & Expressions

| | | |
|----------------|-------------|--|
| embrace | <i>v.</i> | include in scope; include as part of something broader; have as one's sphere or territory 包括, 包含 |
| dwarf | <i>v.</i> | make appear small by comparison 相形之下, 使显得渺小, 使相形见绌 |
| disparity | <i>n.</i> | inequality or difference between two or more things 不一致, 不相称 |
| diverging | <i>adj.</i> | tending to move apart in different directions 分散的 |
| diesel | <i>adj.</i> | an internal-combustion engine that burns heavy oil 内燃机传动的, 装有柴油机的 |
| locomotive | <i>n.</i> | a wheeled vehicle consisting of a self-propelled engine that is used to draw trains along railway tracks 机车 |
| erratic | <i>adj.</i> | liable to sudden unpredictable change 不确定的, 不稳定的 |
| ridership | <i>n.</i> | the number of persons who ride a system of public transportation 某种公共交通工具上的乘客流通量, 乘客量 |
| fray | <i>n.</i> | a fight; battle 争夺 |
| staggering | <i>adj.</i> | so surprisingly impressive as to stun or overwhelm 令人吃惊的; 令人束手无策的 |
| trajectory | <i>n.</i> | the path followed by an object moving through space 轨道 |
| infrastructure | <i>n.</i> | the stock of basic facilities and capital equipment needed for the functioning of a country or area 基础设施; 基础结构; 基础建设 |

Notes

1. This passage is taken from the report "Global Competitiveness in the Rail and Transit Industry" written by Michael Renner and Gary Gardner.

2. rolling stock: collection of wheeled vehicles owned by a railroad or motor carrier. 铁道机车车辆, 集合名词, 用于称呼所有在铁路运输上的车辆。通常它包含了有动力及无动力两种, 比如铁路机车 (locomotive)、铁路车辆 (railroad car)、客车 (passenger car)。

3. SCI Verkehr: the German transport economy's leading strategic consultancy. 德国轨道交通咨询公司, 这是一家国际权威的咨询顾问公司, 专门从事铁路、物流领域的战略咨询。

3. American Recovery And Reinvestment Act (ARRA): 美国复苏与再投资法案。

Commonly referred to as the Stimulus or The Recovery Act, ARRA is an economic stimulus package enacted by the 111th United States Congress in February 2009 and signed into law on February 17, 2009, by President Barack Obama.

4. NAFTA ['næftə]: North American Free Trade Area, an agreement for free trade between the United States and Canada and Mexico. 北美自由贸易区

5. Roland Berger consultants: It is an independent partnership exclusively owned by nearly 220 partners. It is founded in 1967, one of the world's leading strategy consultancies with over 2,500 employees working in 47 offices in 35 countries worldwide. 罗兰贝格管理咨询有限公司。

Content Awareness

Part I Read and Think

I. Answer the following questions according to the text.

1. In terms of the economy size, which country ranks first in investment in rail industry?

2. What result will the growth of orders for rail vehicles and buses cause?

3. Which were the two early pioneer countries in the expansion of high-speed intercity rail lines?

4. In proportion to population, how many miles of the lines would the United States have to build in order to compete with Spain's commitment?

5. What would partly contribute to the growth of passenger rail over the next five years?

II. There are five questions and unfinished statements in this exercise. For each question or statement, there are four choices marked A, B, C, and D. Decide on the best choice.

1. Which measures are taken by countries in Europe and Asia to promote their rail and transit growth?
 - A. Policies and substantial investment.
 - B. Import relevant technologies.
 - C. Economic stimulus programs.
 - D. Pouring significant capitals.
2. In 2010, how much did the United States spend on urban transit infrastructure?
 - A. \$52 per capita
 - B. \$57 per capita
 - C. \$28 per capita
 - D. \$40 per capita
3. In history, which country has one of the most extensive rail systems in the world?
 - A. China
 - B. the U.S.
 - C. Germany
 - D. Spain
4. Recently, many countries are interested in _____.
 - A. increasing capital budgets for light rail systems
 - B. enlarging rail market volume
 - C. expanding high-speed intercity rail lines
 - D. developing economic stimulus programs
5. Partly thanks to _____, the global rail market is expected to resume its growth path.
 - A. the growth of orders for rail vehicles
 - B. the funds offered by economic stimulus programs
 - C. the rise of ridership
 - D. the increase of light rail systems

Part II Read and Translate

III. Translate the following sentences into Chinese.

1. Similar disparities between the United States and other countries are also evident in comparing combined capital and operations spending.
2. Not surprisingly, differing levels of commitment and investment have led

to highly diverging market volumes worldwide.

3. The United States—and more broadly, the Americas—retains a big market share in freight rail but lags far behind in passenger rail compared to many countries, especially in Europe and Asia.

4. With many new systems under construction or in the planning stages, orders for rail vehicles and buses are expected to show strong growth in the coming years—and these orders will translate into employment growth.

5. Western Europe is projected to remain the single most important regional rail market, but Asia and the Pacific will surpass the NAFTA region to become the second largest market.

IV. Read the following passage, and translate it into Chinese.

Light-rail transit provides jobs during both construction and operation. Construction jobs are temporary and may go to contractors outside of the local area, depending upon the bidding process and job requirements. In Los Angeles, for example, transit cars came from Japan, Italy and Germany; other components—such as rails, power supplies, ticket vending machines and signaling equipment—were also produced outside of the southern California area.

Although rail operation creates jobs in that industry, an important point is that these jobs are mostly taxpayer funded (given the large subsidies to rail transit). The salaries of rail transit workers paid for by subsidies should not count as new income to the local area—tax dollars have simply been transferred from local residents and state and national taxpayers to rail transit workers, effectively taking jobs from other industries. This is true of any public sector job. The income of rail transit workers that is spent does help the local economy, but the same would be true for the dollars of citizens if they had not been taxed. In addition, although transit workers provide a benefit by operating light rail, the value of this benefit compared with the benefit citizens would receive from lower taxes is subjective.

If private development occurs around light-rail transit stations, giving people easier access to businesses, residential housing units and other facilities, then this private development will create jobs. Unlike rail transit jobs, these jobs would certainly provide a net benefit to the local economy.

Section B**Global Competitiveness in the Rail and Transit Industry**

The United States once had a thriving intercity rail and urban transit network. By the 1950s, however, the federal government shifted its infrastructure spending decisively to highways and airports. Public transportation systems atrophied, and America's technological leadership in the manufacture of everything from subway cars to trams to high-speed trains passed to companies in Japan, France, Germany, and a few other European countries.

By the 1970s and 1980s, the domestically owned passenger rail manufacturing industry had vanished. Today, the U.S. passenger rail industry remains underdeveloped, with significant gaps in the supply chain for passenger rail equipment.

In the face of challenges such as high gasoline prices, traffic congestion, and greenhouse gas emissions, public transportation offers a range of benefits over private automobile travel. Indeed, rising urban rail and bus ridership, as well as plans for high-speed rail corridors, suggest a rekindling of U.S. interest in these alternative forms of transport. Although still far from adequate, capital funds for these projects have been on the rise for several years, and the 2009 economic stimulus bill provided an important one-time boost. Along with this renewed interest in stronger transit systems, there is an increasing emphasis on capturing the jobs required in manufacturing these vehicles as well.

Global demand for passenger and freight rail equipment, infrastructure, and related services in 2007 was \$169 billion and is projected to grow to \$214 billion by 2016. Western Europe dominates the market, followed by Asia and the Pacific. North America ranks third, due almost entirely to its large freight rail market. Rail vehicles account for close to one-third of the total rail market. Urban light rail systems and subways are expanding in many regions of the world, and there is growing investment in intercity high-speed rail lines.

This report, "Global Competitiveness in the Rail and Transit Industry", offers profiles of four countries that have retained significant manufacturing employment in the rail and transit industries: Germany, Spain, Japan, and China. It discusses their national transportation policies, including how much they

invest in their rail and transit sectors. For the United States, these experiences offer a mix of commitment and success, but also some cautionary lessons.

Key producer countries employ at least half a million people in total directly in rail vehicle manufacturing, with an unknown number of additional jobs in the supply chain. The construction of tracks, facilities, and other infrastructure; research and development and engineering; as well as the production of communications and signaling equipment provide several hundreds of thousands more jobs. And employment in operating rail and transit systems runs into many millions worldwide.

The country profiles offered in this report underline the importance of policies that create strong and steady domestic markets for rail and transit, driven by substantial and sustained capital investments. Strong domestic markets are also critical for export sales. As the U.S. Congress considers the overdue reauthorization of surface transportation legislation for the next several years, there is little question that much larger investments are needed over several decades to improve and expand U.S. rail and transit systems—and to re-create a viable U.S. rail manufacturing industry. Investments need to go hand-in-hand with policies that lay out clear goals and ensure that urban and intercity lines work together harmoniously to attract large numbers of passengers.

Germany is one of the largest rail and transit markets in the world. Its rail manufacturing industry remains a global technology leader, underpinned by strong internal demand and even larger export sales. Germany's per capita investments in rail and transit are double those of the United States. Direct and indirect jobs in rail manufacturing amount to almost 200,000; if rail construction and operations are included, the number rises to 580,000.

Spain is an up-and-coming rail power, maintaining the largest high-speed rail construction program in Europe. The government's 2004 Strategic Plan for Infrastructures and Transport (PEIT) serves as a visionary planning tool.

And the two-year Extraordinary Infrastructure Plan of April 2010 allocates 70 percent of the country's \$24 billion in transportation funds to rail. Spanish companies that provide goods and services exclusively to the rail sector employed about 116,000 people in 2008.

Japan has been a pioneer in high-speed rail development and continues to be

a global leader. Still, the country's declining population will limit domestic demand for rail services. Thus, Japanese rolling stock manufacturers are looking increasingly to the burgeoning global market; exports accounted for 38 percent of their revenues over the past decade. Some 25,000 people are employed in the production of rail equipment, parts, and signal and safety equipment in Japan, with many times more employed in component parts supply chains.

China's leadership has embraced a highly ambitious plan to expand the country's intercity rail network, possibly reaching 93,000 miles by 2020 (including 16,000 miles of high-speed lines). With mushrooming subway and light rail lines, China is expected to account for more than half of global rail equipment expenditures in coming years. Stiff local-content rules stipulate that 70–90 percent of rail equipment be manufactured domestically. Technology-transfer agreements with foreign suppliers have permitted Chinese manufacturers to reproduce vehicle designs in local factories. The country's two dominant rail manufacturing companies, CSR (China South Locomotive and Rolling Stock) and CNR (China Northern Locomotive and Rolling Stock) together employ more than 200,000 people directly.

Bombardier (Canada), Alstom (France), and Siemens (Germany) have been the leading international manufacturers of rail and transit vehicles, but they are increasingly challenged by China's CSR and CNR. Other companies such as Kawasaki (Japan), CAF and Talgo (Spain), Transmashholding (Russia), Ansaldo-Breda (Italy), and Hyundai Rotem (Korea) also play important roles internationally. U. S. Producers are focused almost exclusively on freight locomotives and wagons.

To expand its domestic rail and transit manufacturing industries, the United States needs a comprehensive strategy that links expanded investments in rail and transit with policies to support domestic manufacturers of the vehicles, equipment, and technologies demanded by this investment. Through a combination of domestic R&D, technology transfer, and learning from global industry leaders, and a process that ensures that a growing share of high value-added manufacturing activity is sourced domestically rather than from abroad, the United States can revitalize its rail and transit manufacturing industries.