
 北京劳动保障职业学院国家骨干校建设资助项目

# 城市设施安全技术

## 专业英语



贾文涛 主编  赵俊岭 王强 李珍 参编



 机械工业出版社  
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本书充分考虑到城市设施安全技术专业的基本业务,同时兼顾高职高专学生英语基础相对比较薄弱的特点,突出实用性,提高学生的专业英语阅读能力和拓宽学生的专业词汇量。本书由8个单元组成,每个单元分为两篇阅读文章。第一篇文章为重点,后面跟有相关练习题;第二篇可作为课后阅读,是对第一篇的扩充。

本书以实用为目的,可作为高职高专城市设施安全技术专业、城市监察与管理专业及相关专业的教材,也可作为专业人员的自学用书。

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# — 前 言 —

本书是一本实用型的高职高专英语教材。本书在选材上不求覆盖整个专业面，但充分考虑到城市设施安全技术专业的基本业务，同时兼顾高职高专学生英语基础相对比较薄弱的特点，突出实用性，提高学生的专业英语阅读能力和拓宽学生的专业词汇量。书中的英语规范、流畅，用语地道，其难度适合学生的实际学习情况，有利于学生结合专业课程的学习来提高英语的运用能力。

整个教材由8个单元组成，每个单元分为两篇阅读文章。第一篇文章为重点，后面跟有相关练习题；第二篇可作为课后阅读，是对第一篇的扩充。

本书以实用为目的，可作为高职高专城市设施安全技术专业、城市监察与管理专业及相关专业的教材，也可作为专业人员的自学用书。

本书由北京劳动保障职业学院贾文涛担任主编。北京劳动保障职业学院赵俊岭、王强，北京信息科技大学外国语学院李珍参加编写了部分内容。

由于所收集资料的限制，再加上编者水平有限，书中难免存在一些遗漏和不当之处，敬请读者和各位同仁批评指正。

编 者

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# Unit 1

## Passage 1

### Pipeline Basics

**What are pipelines? Where are they? And why do people need them in the first place? Those are good and basic questions.**



The energy transportation network of the United States consists of over 2.5 million miles of pipelines. That's enough to circle the earth about 100 times. These pipelines are operated by approximately 3,000 companies, large and small.

Based on data generated from annual reports to PHMSA from pipeline operators, the network includes approximately:

- 175,000 miles of onshore and offshore hazardous liquid pipeline;
- 321,000 miles of onshore and offshore gas transmission and gathering pipelines;
- 2,066,000 miles of gas distribution mains and service pipelines;
- 114 active LNG Plants connected to their gas transmission and distribution systems; and
- Propane distribution system pipelines.

Although pipelines exist in all fifty states in the United States, most of Americans are unaware that this vast network even exists. This is due to the strong safety record of pipelines and the fact that most of them are located underground. Installing pipelines underground protects them from damage and helps protect the communities as well.

## Where Are They?

Most hazardous liquid and gas pipelines are buried underground. To ensure Americans' safety and avoid damaging underground lines, Americans must call their state one-call center before digging.



Most hazardous liquid and gas transmission pipelines are located underground in rights-of-way (ROW). A ROW consists of consecutive property easements acquired by, or granted to, the pipeline company. The ROW provides sufficient space to perform pipeline maintenance and inspections, as well as a clear zone where encroachments can be monitored and prevented.

To find out if a transmission pipeline is located near a person, the person can visit the National Pipeline Mapping System (NPMS) of the United States and search by his/her county or zip code.

Pipeline operators are required to post brightly-colored markers along their ROW to indicate the presence of—but not necessarily the exact location of—their underground pipelines. Markers come in a variety of shapes and sizes. They contain information about the nearby pipeline as well as emergency contact information for the company that operates it.

Gas distribution systems consist of distribution main lines and service lines. Distribution main lines are generally installed in underground utility easements alongside streets and highways. Distribution service lines run from the distribution main line into homes or businesses. Distribution main and service lines are not generally indicated by above-ground markers. To ensure safety and avoid damaging underground lines, anyone planning to dig or excavate is required by law to contact their state One-Call center 48 to 72 hours before digging.

## Why Do People Need Them?

Pipelines play a vital role in people's daily lives. Cooking and cleaning, the daily commute, air travel and the heating of homes and businesses are all made possible by the readily available fuels delivered through pipelines.



These routine activities really add up, in terms of energy use. Natural gas provides for fully 24% of America's total energy consumption, and petroleum provides for another 39%.

Because such huge volumes of hazardous liquids and gas must be transported, the only feasible way to do so is through pipelines. Pipelines do not crowd the Americans' highways and waterways as trucks and barges would, nor do they contribute to traffic congestion or highway accidents.

Pipelines, in short, are practical and safe.

## New Words and Expressions

**pipeline** [ˈpaɪpˌlaɪn]

*n.* 管道; 输油管; 传递途径

**energy** [ˈenədʒi]

*n.* [物] 能量; 精力; 活力; 精神

**transportation** [ˌtrænsˈpɔːtɪfən, trænʒ-, trɑːn-]

*n.* 运输; 运输系统; 运输工具; 流放

**circle** [ˈsɜːkl]

*n.* 循环, 周期; 圆; 圈子; 圆形物

*vi.* 盘旋, 旋转; 环行

*vt.* 画圆圈; 环绕……移动

**operate** [ˈɒpəreɪt]

*vi.* 运转; 动手术; 起作用

*vt.* 操作; 经营; 引起; 对……开刀

**generate** [ˈdʒenəreɪt]

*vt.* 使形成; 发生; 生殖

**annual** [ˈænjʊəl]

*adj.* 年度的; 每年的

*n.* 年刊, 年鉴; 一年生植物

**approximately** [ə'prɒksɪmɪtli]

*adv.* 大约, 近似地; 近于

**onshore** ['ɒnʃɔ:]

*adv.* 在陆上; 向着海岸

*adj.* 陆上的; 向着海岸的

**offshore** ['ɒfʃɔ:]

*adj.* 离岸的; [海洋] 近海的; 吹向海面的

*adv.* 向海面, 向海

**transmission** [trænz'mɪʃən, træns-, trɑ:n-]

*n.* 传动装置, [机] 变速器; 传递; 传送; 播送

**distribution** [ˌdɪstrɪ'bju:ʃən]

*n.* 分布; 分配

**LNG (Liquefied Natural Gas)**

*abbr.* 液化天然气

**hazardous** ['hæzədəs]

*adj.* 有危险的; 冒险的; 碰运气的

**propane** ['prɒpeɪn]

*n.* [有化] 丙烷

**unaware** [ˌʌnə'weɪə]

*adj.* 不知道的, 无意的; 未察觉到的

*adv.* 意外地; 不知不觉地

**install** [ɪn'stɔ:l]

*vt.* 安装; 任命; 安顿

**damage** ['dæmɪdʒ]

*n.* 损害; 损毁

*vi.* 损害; 损毁; 赔偿金

*vt.* 损害, 毁坏

**community** [kə'mju:nɪti]

*n.* 社区; [生态] 群落; 共同体; 团体

**consecutive** [kən'sekjʊtɪv]

*adj.* 连贯的; 连续不断的

**petroleum** [pi'trəʊliəm, pə-]

*n.* 石油

**ensure** [in'sʊə]

*vt.* 保证, 确保; 使安全

**property** ['prɒpəti]

*n.* 性质, 性能; 财产; 所有权

**easement** ['i:zmənt]

*n.* 地役权; 缓和; 减轻

**acquire** [ə'kwaɪə]

*vt.* 获得; 取得; 学到; 捕获

**sufficient** [sə'fɪʃənt]

*adj.* 足够的; 充分的

**maintenance** ['meɪntənəns]

*n.* 维护, 维修; 保持; 生活费用

**inspection** [ɪn'spekʃən]

*n.* 视察, 检查

**encroachment** [ɪn'krəʊtʃmənt]

*n.* 侵入, 侵犯; 侵蚀

**county** ['kaunti]

*n.* 郡, 县

**marker** ['mɑ:kə]

*n.* 记分员; 书签; 标志物; 作记号的人

**indicate** ['ɪndɪkeɪt]

*vt.* 表明; 指出; 预示; 象征

**presence** ['prezəns]

*n.* 存在; 出席; 参加; 风度; 仪态

**location** [ləu'keɪʃən]

*n.* 位置; 地点; 外景拍摄场地

**variety** [və'raɪəti]

*n.* 多样; 种类; 杂耍

**contain** [kən'tein]

*vt.* 包含; 控制; 容纳; 牵制 (敌军)

*vi.* 含有; 自制

**emergency** [i'mə:dʒənsi]

*n.* 紧急情况; 突发事件; 非常时刻

*adj.* 紧急的; 备用的

**utility** [ju:'tiləti]

*n.* 实用; 效用; 公共设施; 功用

*adj.* 实用的; 通用的; 有多种用途的

**excavate** ['ekskə'veit]

*vt.* 挖掘; 开凿

*vi.* 发掘; 细查

**vital** ['vaitəl]

*adj.* 至关重要的; 生死攸关的; 有活力的

**commute** [kə'mju:t]

*n.* 通勤 (口语)

*vt.* 减刑; 交换; 用……交换; 使……变成

*vi.* 通勤; 代偿

**routine** [ru:'ti:n]

*n.* [计] 程序; 日常工作; 例行公事

*adj.* 日常的; 例行的

**consumption** [kən'sʌmpʃən]

*n.* 消费; 消耗; 肺癆

**volume** ['vɒljʊ:m]

*n.* 量; 体积; 卷; 音量; 大量; 册

*adj.* 大量的

*vi.* 成团卷起

**feasible** ['fi:zəbl]

*adj.* 可行的; 可能的; 可实行的

**barge** [bɑ:dʒ]

*n.* 驳船; 游艇

*vi.* 蹒跚; 闯入

*vt.* 用船运输; 蛮不讲理地闯入或打扰某事物

**contribute** [kən'tribju:t]

*vt. vi.* 贡献, 出力; 投稿; 捐献

**congestion** [kən'dʒestʃən]

*n.* 拥挤; 拥塞; 充血

**practical** ['præktikəl]

*adj.* 实际的; 实用性的

## Exercises

### I. Translate the following sentences into Chinese.

1. The energy transportation network of the United States consists of over 2.5 million miles of pipelines.

2. These pipelines are operated by approximately 3,000 companies, large and small.

3. A ROW consists of consecutive property easements acquired by, or granted to, the pipeline company.

4. The ROW provides sufficient space to perform pipeline maintenance and inspections, as well as a clear zone where encroachments can be monitored and prevented.

5. Markers come in a variety of shapes and sizes.

6. Gas distribution systems consist of distribution main lines and service lines.

7. Distribution service lines run from the distribution main line into homes or businesses.

8. Cooking and cleaning, the daily commute, air travel and the heating of homes and businesses are all made possible by the readily available fuels delivered through pipelines.

9. Because such huge volumes of hazardous liquids and gas must be transported, the only feasible way to do so is through pipelines.

10. Pipelines do not crowd the Americans' highways and waterways as trucks and barges would, nor do they contribute to traffic congestion or highway accidents.

## II. Translate the following phrases into English.

1. 地下管线 \_\_\_\_\_
2. 年度报告 \_\_\_\_\_
3. 危险液体 \_\_\_\_\_
4. 液化天然气 \_\_\_\_\_
5. 路权 \_\_\_\_\_
6. 非法入侵 \_\_\_\_\_
7. 配送总线 \_\_\_\_\_
8. 准确位置 \_\_\_\_\_
9. 总能量消耗 \_\_\_\_\_
10. 紧急联系信息 \_\_\_\_\_

## III. Fill in the following blanks using the words in the box.

diameter, discovery, cross-border, ranging, large-scale, welded steel, measured, fatality, pipelines, supply

Buried pipelines transport large quantities of a product from the source of \_\_\_\_\_ to the marketplace. Almost 70% of petroleum liquid products are transported by \_\_\_\_\_. Statistically they provide the safest form of transportation. In 1998, total \_\_\_\_\_ in the United States amounted to  $2.7 \times 10^{-5}\%$  in comparison to all other form of transportation and they are equally as good worldwide.

The first oil pipeline in North America, which \_\_\_\_\_ 175 km in length and 152 mm in diameter, was laid from Bradford to Allentown, Pennsylvania, in 1879. Since the late 1920s, virtually all oil and gas pipelines have been made of \_\_\_\_\_. Although the first cross-country pipeline that connected some major cities was laid in 1930, it was not until World War II that \_\_\_\_\_ pipelines were installed. In the 1960s, larger-diameter pipelines \_\_\_\_\_ from 813 to 1,016 mm were built. In 1967 the first long-distance, large-diameter, \_\_\_\_\_, high – pressure pipeline made of high-grade steel was built. The Iranian Gas Trunk Line I was constructed to Azerbaijan—it consisted of NPS 48/ NPS 42 pipe, grade 448 MPa (X-65). \_\_\_\_\_ of oil on Alaska's North Slope resulted in the construction of the largest northern pipeline, the Trans-Alaska Pipeline System (TAPS), with a 1,219-mm \_\_\_\_\_ and 1,287-km length. The

line was commissioned in 1979.

## Passage 2

### The Alaska Pipeline

The Alaska pipeline starts at the frozen edge of the Arctic ocean. It stretches southward across the largest and northernmost state in the United States, ending at a remote ice-free seaport village nearly 800 miles (1 mile = 1.609 km) from where it begins. It is massive in size and extremely complicated to operate.

The steel pipe crosses windswept plains and endless miles of delicate tundra that tops the frozen ground. It weaves through crook canyons, climbs sheer mountains, plunges over rocky crags, makes its way through thick forests, and passes over or under hundreds of rivers and streams. The pipe is 4 feet (1 foot = 30 cm) in diameter, and up to 2 million barrels, or 84 million gallons (1 gallon  $\approx$  4.54 litres), of crude oil can be pumped through it daily.

Resting on H-shaped steel racks called “bents” long sections of the pipelines follow a zigzag course high above the frozen earth. Other long sections drop out of sight beneath spongy or rocky ground and return to the surface later on. The pattern of the pipelines’ up-and-down route is determined by the