

# 1

UNIT

# Railway Transportation

WARMING UP

INTENSIVE READING A

INTENSIVE READING B



## Learning Objectives

After learning this unit, you'll be able to:

- give an overview of railway transportation
- understand the main of tasks of the train crew
- describe the requirements of and restrictions on delivering cargoes in one batch
- learn Zhan Tianyou's great contributions to China's railway construction

### PRACTICAL READING

### READING INTO CHINA

## Warming Up

Task 1 Match the pictures with the related terms.



- A Freight management      B Technical maintenance  
C Passenger service      D Marshaling yard

Task 2 Listen to the passage and fill in the blanks.



- 1 A railway station is the place allowing the 1) \_\_\_\_\_ and unloading of goods, or the 2) \_\_\_\_\_ and alighting of passengers.
- 2 Most stations now mainly serve one purpose and can be categorized into either 3) \_\_\_\_\_ or 4) \_\_\_\_\_.
- 3 Passenger stations generally include 5) \_\_\_\_\_, railway station squares and 6) \_\_\_\_\_.
- 4 Freight stations are normally located in places such as 7) \_\_\_\_\_, forest zones, and 8) \_\_\_\_\_.



# Railway Transportation —An Overview

- <sup>1</sup> Railway transportation is a means of transportation that transfers passengers and goods on **wheeled** vehicles running on rails. Every aspect in the process of railway transportation, such as planning, organizing, and directing, falls within the work **scope** of railway operation, which can be classified into three different areas: passenger service, freight transportation, and train operation.
- <sup>2</sup> The basic task of railway passenger service is satisfying passengers' travel demands and providing them with a safe journey during which they won't have to worry about anything. This task cannot be **accomplished** without the support of data, which includes the train's transportation capability, riding rate, and passenger traffic density. Through analyzing the data **objectively**, an accurate passenger traffic plan can be laid down, thus making railway passenger service more efficient and scientific.
- <sup>3</sup> To **smoothly** transport the **cargo** to its **destination**, the working procedures of each station on the way should be **interlinked**. Normally, at the departure station, cargo **consigning**, expense **calculating**, form filling, and train loading are jobs required to be done. Work at **stopovers** mainly consists of the handover **inspection**, transfer **arrangement**, re-consignment and rearrangement of the cargo. When the train arrives at the terminal station, workers shall start to confirm **receipt** as well as to unload, store, and deliver the goods.



- 4 Train operation **utilizes** various items of technical equipment and **coordinates** the whole railway system to aid passenger service and freight transportation. It is thus considered to be the **core** part of railway transportation. In China, train operation **encompasses** many tasks, such as **shunting**, planning, flow controlling, and operation diagram drawing.
- 5 Therefore, passenger service, freight transportation, and train operation is essential for the safety and success of railway operation. In recent years, China has put great emphasis on improving technology and training railway workers to make railway transportation more intelligent, convenient, and comfortable.

## Vocabulary

### Words

- wheeled /wi:ld/ *adj.* 有轮子的  
scope /skəʊp/ *n.* 范围  
accomplish /ə'kʌmplɪʃ/ *v.* 完成, 实现  
objectively /əb'dʒektɪvli/ *adv.* 客观地  
smoothly /'smu:ðli/ *adv.* 顺利地, 平稳地  
cargo /'kɑ:rgəʊ/ *n.* (一批) 货物  
destination /,destə'neɪʃən/ *n.* 目的地, 终点  
interlink /,ɪntər'lɪŋk/ *v.* (使) 连接  
consign /kən'saɪn/ *v.* 运送, 托运  
calculate /'kælkjəleɪt/ *v.* 计算, 核算  
stopover /'stɔ:p,əʊvər/ *n.* 中途停留  
inspection /ɪn'spektʃən/ *n.* 检查, 视察  
arrangement /ə'reɪndʒmənt/ *n.* 安排, 筹划, 准备  
receipt /rɪ'si:t/ *n.* 收据, 收条  
utilize /'ju:təlaɪz/ *v.* 利用, 使用  
coordinate /kəʊ'ɔ:rdəneɪt/ *v.* 协调, 协同  
core /kɔ:ɹ/ *adj.* 核心的, 最主要的  
encompass /ɪn'kʌmpəs/ *v.* 包括, 包含  
shunting /'ʃʌntɪŋ/ *n.* 调动机车, 扳道岔

### Phrases

- lay sth down 制定……, 颁布……  
consist of sth 由……组成  
arrive at 到达  
put emphasis on 重视

### Technical terms

- train operation 行车组织  
transportation capability 运输能力  
riding rate 乘车率  
passenger traffic density 客运密度  
handover inspection 交接检验

# Intensive Reading A

## Vocabulary and Structure

**Task 1** Fill in the blanks with the proper words.

wheeled

coordinate

accomplish

destination

calculate

shunting

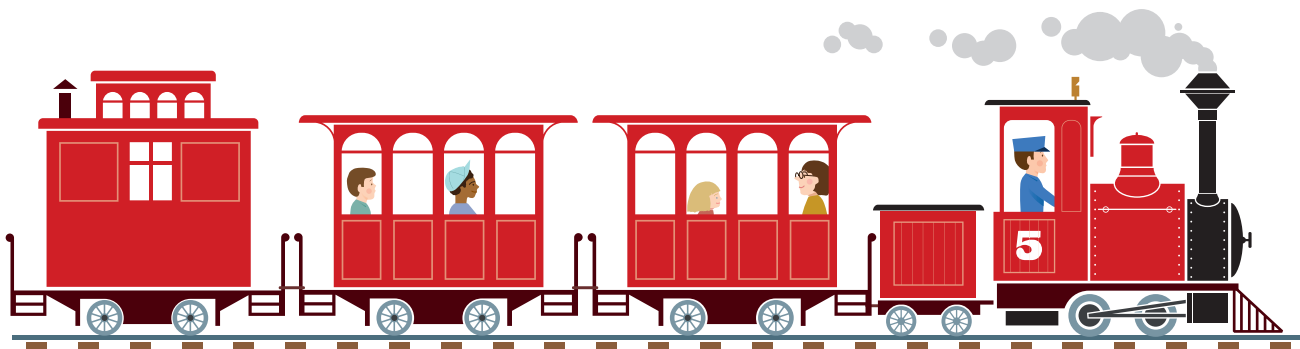
interlink

core

- 1 After the necessary \_\_\_\_\_, the train returned eastwards around midday.
- 2 A wanderer who is determined to reach the \_\_\_\_\_ does not fear the rain.
- 3 You must \_\_\_\_\_ the movements of your arms and legs when swimming.
- 4 Such moves will \_\_\_\_\_ the economies of the two countries.
- 5 The city center is off limits to \_\_\_\_\_ vehicles.
- 6 You'll need to \_\_\_\_\_ how much time the assignment will take.
- 7 The group plans to concentrate on three \_\_\_\_\_ businesses.
- 8 You should \_\_\_\_\_ the task within the allotted time.

**Task 2** Choose the best answer to complete each sentence.

- 1 What exactly do you hope to \_\_\_\_\_ this year?  
A. accompany      B. accommodate      C. accomplish
- 2 The goods have been \_\_\_\_\_ to you by air.  
A. consigned      B. resigned      C. designed
- 3 They have to \_\_\_\_\_ the probability of failure.  
A. stimulate      B. regulate      C. calculate
- 4 He has had time to cool down and look at what happened more \_\_\_\_\_.  
A. subjectively      B. objectively      C. respectively
- 5 They accepted unquestioningly the rules he had laid \_\_\_\_\_.  
A. under      B. down      C. on



## Reading Comprehension

**Task 3** Tick (✓) the expressions that belong to the same categories, then write a heading summarizing the categories.

**Example:** shunting, transportation capability, passenger traffic density, riding rate  
*data supporting passenger service*

- 1 passenger service, riding rate, freight transportation, train operation  
\_\_\_\_\_
- 2 form filling, train loading, expense calculating, flow controlling, cargo consigning  
\_\_\_\_\_
- 3 cargo re-consignment, handover inspection, passenger service, cargo rearrangement, transfer arrangement  
\_\_\_\_\_
- 4 planning, flow controlling, shunting, goods delivering, operation diagram drawing  
\_\_\_\_\_

**Task 4** Answer the following questions.

- 1 What is the definition of railway transportation?  
\_\_\_\_\_
- 2 What is the basic task of railway passenger service?  
\_\_\_\_\_
- 3 How can the cargo be smoothly transported to its destination?  
\_\_\_\_\_
- 4 What is the core part of railway transportation?  
\_\_\_\_\_
- 5 What is essential for the safety and success of railway transportation?  
\_\_\_\_\_

## Mini-project

**Task 5** Search the Internet for railway transportation. Talk with a partner about how the development of railway transportation has influenced your life.



## Intensive Reading B



# Train Crew

<sup>1</sup> If you have traveled by train, you may have enjoyed the service provided by the crew on board. Wearing uniforms and providing **professional** service, service **staff** members aim to help passengers arrive at their destinations safely, conveniently and comfortably. As the service on trains includes a wide range of factors, it is necessary to learn the **composition** of the crew involved in this area. The crew contains three **subgroups**:

<sup>2</sup> (1) Passenger transportation crew

The passenger transportation crew consists of

**attendants, broadcasters, catering staff, etc.** Their duties include, but are not limited to, ensuring order and safety, keeping the place clean and tidy, tending to the needs of passengers, correctly operating equipment, checking tickets, and broadcasting.

<sup>3</sup> (2) Vehicle crew

In charge of the inspection and **maintenance** of the equipment on trains, the vehicle crew is led by the leaders of the rolling stock **depot**. The staff members regularly check the running parts of the vehicles when they arrive at the station, and

**patrol** at any time when the train is in operation, so they can deal with faults in a timely manner.

4 (3) Public security crew

These staff members do what the job title **implies**, that is, they maintain public security on trains. Specifically speaking, they assist in maintaining public order on board, **mediating** passenger **disputes**, and **prohibiting** passengers from carrying dangerous items on board. They do other security-related work too.

5 Although the three subgroups are employees of different types, they are under the unified leadership of the **conductor** while on the same train, working jointly to provide service to passengers.

6 As for the organization of the train crew, factors such as train types, running distance, and **reasonable** use of labor are taken into account. According to the specific situation, the assigning crew system or the crew pooling system is adopted.

7 In the assigning crew system, the crew is appointed to be responsible for a **designated** operation section and train number. On the contrary, in the crew pooling system, in order to achieve the **compact** organization of train routing and shifts, different groups of crew take turns to work, and no crew is assigned to serve on a designated train. This system is applied when there is a large volume of passengers, and the train types and **marshaling** are basically the same. Both systems have their advantages and disadvantages, and which one to adopt depends on the actual needs of the routing plan.

## Vocabulary

### Words

**professional** /prə'feʃənəl/ *adj.* 专业的, 职业的

**staff** /stæf/ *n.* 员工, 全体职员

**composition** /kəm'pəʊzɪʃən/ *n.* 组成, 构成

**subgroup** /'sʌbgɹu:p/ *n.* 小分组, 小团体

**attendant** /ə'tendənt/ *n.* 服务员

**broadcaster** /'brɔ:dkæstər/ *n.* 广播员

**catering** /'keɪtərɪŋ/ *n.* 餐饮服务

**maintenance** /'meɪntənəns/ *n.* 维护, 养护

**depot** /'di:pou/ *n.* 站, 段

**patrol** /pə'trəʊl/ *v.* 巡逻, 巡查

**imply** /ɪm'plai/ *v.* 意味着, 暗示

**mediate** /'mi:diət/ *v.* 调停, 调解

**dispute** /'dɪspju:t/ *n.* 纠纷, 争端

**prohibit** /prəʊ'hɪbɪt/ *v.* 阻止, 禁止

**conductor** /kən'dʌktər/ *n.* 列车长

**reasonable** /'ri:zənəbəl/ *adj.* 合情理的

**designated** /'deziɡneɪtɪd/ *adj.* 指派的

**compact** /kəm'pækt/ *adj.* 紧密的, 密集的

**marshaling** /mɑ:ɹʃəlɪŋ/ *n.* 编组, 调车

### Phrases

**aim to do** 力求做

**tend to sth** 照料某物

**in charge of** 负责

**deal with** 处理

**on the contrary** 正相反

**take turns** 轮流, 依次

**depend on** 取决于

### Technical Terms

**rolling stock depot** 车辆段

**assigning crew system** 包乘制

**crew pooling system** 轮乘制



# Intensive Reading B

## Vocabulary and Structure

**Task 1** Choose the meaning of the words according to the text.

- 1 professional—professional service
  - A. relating to a job that needs special education and training
  - B. someone who earns money by doing a job, sport, or activity that many other people do just for fun
- 2 patrol—patrol at any time
  - A. a group of police, soldiers, vehicles, planes, etc. sent out to search a particular area
  - B. to go around the different parts of an area at regular times to check that there is no trouble or danger
- 3 dispute—mediating passenger disputes
  - A. a serious argument or disagreement
  - B. to try to get control of something or win something
- 4 conductor—the unified leadership of the conductor while on the same train
  - A. someone who stands in front of a group of musicians or singers and directs their playing or singing
  - B. someone who is in charge of a train
- 5 compact—the compact organization of train routing and shifts
  - A. packed or put together firmly and closely
  - B. a small flat container with a mirror, containing powder for a woman's face

**Task 2** Correct the following sentences. Each sentence has only one mistake.

**Example:** Some minerals have complex chemical compensations.

*compositions*

- 1 He took a course to learn about train maintain.
- 2 He is a technician in the marshal yard.
- 3 The local government is on charge of repairing roads.
- 4 They were held together to deal upon emergency.
- 5 The students make turns to answer the questions.

## Reading Comprehension

**Task 3** Put the job descriptions in the corresponding boxes.

A check the running parts

B patrol at any time

C ensure order and safety

D check tickets

E prohibit dangerous items

F mediate disputes

G keep the train clean and tidy

H tend to passengers' needs

Passenger transportation crew

Vehicle crew

Public security crew

**Task 4** Decide whether the following statements are true (T) or false (F).

- \_\_\_ 1 Passenger transportation crew, vehicle crew and public security crew are the three subgroups of train crew.
- \_\_\_ 2 The vehicle crew only needs to check the equipment once when the train is in operation.
- \_\_\_ 3 The conductor is the leader of the three subgroups on a train.
- \_\_\_ 4 No train crew is assigned to serve on a designated train in the crew pooling system.
- \_\_\_ 5 Both the assigning crew system and the crew pooling system will be applied when the train types are basically the same.

## Translation

**Task 5** Translate the following English sentences into Chinese.

- 1 Specifically speaking, they assist in maintaining public order on board, mediating passenger disputes, and prohibiting passengers from carrying dangerous items on board.

\_\_\_\_\_

\_\_\_\_\_

- 2 Although the three subgroups are employees of different types, they are under the unified leadership of the conductor while on the same train, working jointly to provide service to passengers.

\_\_\_\_\_

\_\_\_\_\_

## Batches of Cargoes

The batch is the unit through which the railway freight rate is calculated. A batch of cargoes refers to cargoes with the same transportation requirements, sharing one consignment note and one freight invoice. A batch of cargoes is transported with the same consignor, consignee, departure station, receiving station, and loading and unloading site.

In terms of types of loads, a batch of cargoes can be defined as follows:

- A car of full-carload cargoes is regarded as one batch;
- Cargoes loaded by multi-flatcar loads, loaded by stacking the head of one cargo onto the rear of the other, or loaded by using intermediate flatcars are called one batch;
- Less-than-carload cargoes listed in one consignment note are considered as being one batch;
- Cargoes delivered in container transportation with one consignment note are seen as being one batch.

### 1 Requirements for cargo delivery in one batch

Cargoes in the same batch should be packed in containers of the same specifications and the gross weight should not exceed the freight car's

permissible carrying capacity. The freight forwarder's containers and the consignor's containers should be marked clearly and kept at a distance.

### 2 Restrictions on cargo delivery in one batch

Cargoes with various properties have different transportation requirements. To ensure freight safety, the following cargoes are prohibited from being delivered in one batch:

- Perishable cargoes and non-perishable cargoes;
- Dangerous cargoes and non-dangerous cargoes (except as otherwise noted);
- Cargoes that cannot be mixed due to their respective properties, such as liquid cargoes and cargoes with strong odors, or that should be kept dry;
- Value-insured cargoes and non-value-insured cargoes;
- Insured cargoes and non-insured cargoes;
- Cargoes with different transportation conditions and requirements, such as quarantine certificates, customs supervision, and specific temperatures.

However, under special circumstances, the above cargoes can be delivered in one batch with the permission of the national or local railway administration.

## Extended Exercise

**Task 1** Put the letters in the correct order to spell the words.

**Example:** BLE PER SSI MI

PERMISSIBLE

1 PA TY CI CA

2 QUA TI RAN NE

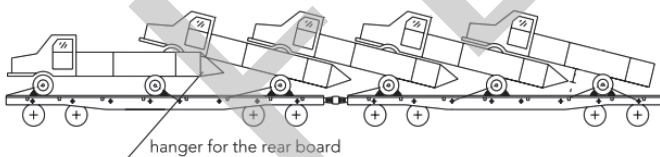
3 RI SHA PE BLE

4 CA SPE FI CI TION

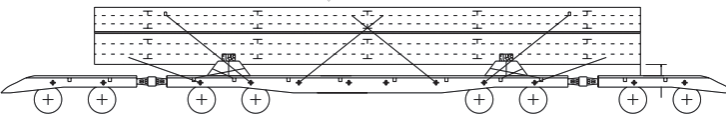
5 IN ME DI TER ATE

**Task 2** The following pictures are batches of cargoes of different types. Match the pictures with the proper types according to the given information.

1



2



3



## Vocabulary

batch /bætʃ/ *n.* 一批, 一组

stack /stæk/ *v.* 摞起, 整齐地堆起

rear /rɪr/ *n.* 后部, 后面

intermediate /ˌɪntər'mi:diət/ *adj.* 中间的, 中等的

pack /pæk/ *v.* (把……) 装箱

specification /ˌspesɪfɪ'keɪʃən/ *n.* 规格, 具体说明

permissible /pər'mɪsəbəl/ *adj.* 允许的, 许可的

capacity /kə'pæsəti/ *n.* 容量, 容积

forwarder /'fɔ:rwərdər/ *n.* 转运公司

perishable /'perɪʃəbəl/ *adj.* 易腐烂的, 易变质的

odor /'əʊdə/ *n.* 气味, 臭味

quarantine /'kwɔ:rəntɪn/ *n.* 检疫, 隔离

refer to 指的是, 涉及

consignment note 发货单

freight invoice 货票

gross weight 毛重

A loaded by multi-flatcar loads

B loaded by stacking the head of one cargo onto the rear of the other

C loaded by using intermediate flatcars

# Zhan Tianyou— Father of China's Railway



- <sup>1</sup> Zhan Tianyou, born in 1861 in Guangzhou, was a pioneering Chinese railway engineer. He is known as the “Father of China’s Railway” due to his contributions to designing and building 14 railways during his career.
- <sup>2</sup> In 1872, he was chosen to be sent to the United States as part of the Chinese Educational Mission. After receiving his Ph.D. in Civil Engineering at Yale University, he returned to China and became a railway engineer.
- <sup>3</sup> In 1904, the Qing government decided to build a railway that would link the capital of Beijing to the important trade city of Zhangjiakou in the north. As this railway would be of strategic significance to the Qing government, a decision was made that the railway would be built without foreign assistance. No foreign capital was to be used and no foreign engineers were to be hired. Zhan was appointed as chief engineer of the railway.
- <sup>4</sup> In the beginning, there was some doubt that China would be able to construct a railway in the rugged Yanshan Mountain north of Beijing all by itself. But Zhan proved that he was an able engineer. Together with his colleagues, he completed the work two months ahead of schedule and under budget. They overcame a series of problems such as terrain and a shortage of train power by building a zigzag railway that climbed upward, using two locomotives instead of one.
- <sup>5</sup> The famous Beijing-Zhangjiakou Railway, which has been upgraded into a high-speed one, served as a crucial line for the 2022 Beijing Winter Olympics, which was co-hosted by Beijing and Zhangjiakou. Today China is known for its rapid development of high-speed railways, which cover over 95 percent of cities with a population of more than one million. When we exclaim at the convenience brought to us by our railway network, we should not forget where it all began.