

Selective Reading  
Course for Meteorology

# 气象科技英语阅读

© 周幼华 主编

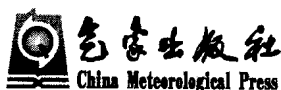
南京信息工程大学 2010 年教材基金立项资助项目

# 气象科技英语阅读

Selective Reading Course for Meteorology

主编 周幼华

编者 刘杰海 吴建兰 方 艳



## 内容简介

《气象科技英语阅读》主要选编气象类、环境类有关天气、气候、海洋、人文气象等科技英语教学和研究的阅读文献。文章体裁有论述文、说明文、描写文等;教材的编写主要根据气象科技英语文体、人文气象和语言特点,依据气象科技英语阅读的策略和方法,注重气象科技英语、人文气象英语语篇的阅读和理解。所选文章篇幅适当、难易有梯度、题材多样。内容注重气候现象与天气变化、气象与农业、环境与食品、人类与自然、人文气象英语以及相关的气象、环境、海洋等富有科技英语特点的文章。文章力求通俗易懂,富有知识性、多样性和实用性。本教材可供英语专业本科生、大气科学、环境科学等专业本科生、研究生使用,也可供对气象科技英语、人文气象英语感兴趣的读者使用。

### 图书在版编目(CIP)数据

气象科技英语阅读 / 周幼华等主编. —北京: 气象出版社, 2012. 5

ISBN 978-7-5029-5489-5

I. ①气… II. ①周… III. ①气象学—英语—阅读教学 IV. ①H319.4

中国版本图书馆 CIP 数据核字(2012)第 094108 号

## Selective Reading Course for Meteorology

### 气象科技英语阅读

周幼华 主编

---

出版发行: 气象出版社

地 址: 北京市海淀区中关村南大街 46 号

总 编 室: 010-68407112

网 址: <http://www.cmp.cma.gov.cn>

责任编辑: 隋珂珂

责任校对: 石 仁

封面设计: 博雅思企划

印 刷: 北京京科印刷有限公司

开 本: 720 mm × 960 mm 1/16

字 数: 355 千字

版 次: 2012 年 7 月第 1 版

邮政编码: 100081

发 行 部: 010-68409198

E-mail: [qxchs@cma.gov.cn](mailto:qxchs@cma.gov.cn)

终 审: 章澄昌

责任技编: 吴庭芳

印 张: 16

印 次: 2012 年 7 月第 1 次印刷

定 价: 26.00 元

---

本书如存在文字不清、印刷错误、脱页等,请与本社发行部联系调换

# 前 言

《气象科技英语阅读》是南京信息工程大学语言文化学院“气象科技英语”系列教材之二,是继《气象科技英语翻译》之后又一部关于气象科技英语类教材。本教材主要选编气象类、环境类有关天气、气候、海洋、人文气象等科技英语教学和研究的阅读文献。教材的编写主要根据气象科技英语文体、人文气象和语言特点,依据气象科技英语阅读的策略和方法,注重气象科技英语、人文气象英语语篇的阅读和理解。文章力求通俗易懂,富有知识性、多样性和实用性。

为了使本校文科学生,尤其是英语专业本科生能尽快实现“三个主动”,即主动融入、主动接轨、主动服务气象的理念,融入本校以气象学科为特色的教学环境,使学生能够阅读一些相关气象科技英语知识文献,编者在选编了气象科技英语的同时,也选编了部分人文气象英语的文章,使学生能够了解人类社会活动和生活与气象、环境、海洋等之间的密切联系,从而能给文科学生在今后进一步学习气象英语中,不仅能够更加理解气象科技英语知识,还能够理解气象现象与人类社会的紧密关系。

《气象科技英语阅读》选择与当今气象科技、环境问题、人文与气象等题材丰富新颖的文章,体裁有论述文、说明文、描写文等。所选文章篇幅适当、难易有梯度、内容多样,共有 28 篇,分为 14 个单元,每个单元分为课文 I 和课文 II 两个部分。课文 I 内容注重气候现象与天气变化、气象与农业、环境与食品、人类与自然、人文气象英语等;课文 II 选编与课文 I 内容相关的气象、环境、海洋等富有科技英语特点的文章。本教材可供英语

专业本科生、大气科学、环境科学等专业本科生、研究生使用,也可供对气象科技英语、人文气象英语感兴趣的读者使用。通过本教程的学习,可以使学习者熟悉气象科技英语词汇及气象科技英语知识、人文气象知识特点等,也可增加他们气象科技英语知识,拓展他们的阅读视野,为将来进一步学习气象科技英语打下良好的基础。

本教材遵循实用性和可操作性原则,选用新颖的气象科技英语文献,教材的主要特色是:

(1)衔接性:为使文科类学生从人文英语走向科技英语有一个良好的过渡,教材选编了人文气象英语和气象科技英语相结合的若干文章,从而在人文气象英语和气象科技英语文章之间有一个良好的衔接性,如选编了包括环境问题专家、诺贝尔奖获得者、前美国副总统戈尔(Al Gore)的文章,就是一篇人文与科技相结合的典范。

(2)针对性:选编气象科技英语的一些常识性阅读材料,能反映当今气象科技英语教学和研究的最新成果的阅读文章,然后根据文章的难易度、长短篇,以及不同的题材加以分类编写,从课前预习到文章重点词汇、再到文章内容、课后练习安排(包括文章中气象科技知识、语言现象的处理)等,都力争做到结构富有条理。教学对象包括英语专业本科生、大气类学科、环境类学科本科生、研究生等。

(3)实用性:本教材对气象科技英语的阅读理解、篇章结构、英文中译等各方面有数量不等的不同练习,这些练习可以在课堂上进行互动讨论,也可以在课后以学习小组形式进行思考和交流。这样,通过课内外努力学习和钻研,既可以帮助大气科学类学生提高英语文献阅读理解和检索能力,又可以使英语专业主动融入大气科学学科,让学生更多了解气象学等大气科学的知识,因此,在选择阅读材料时,同时兼顾到英语语言材料的难度和实用。

本教材的编写具体分工如下:周幼华老师担任主编,负责编写的组织协调、统稿和定稿工作,并编写第1、2、3、7单元和部分单元的课文Ⅱ部

分;刘杰海老师负责编写第4、5、6、8单元;吴建兰老师负责编写第9、10、14单元;方艳老师负责编写第11、12、13单元。在课堂教学时,可根据课时安排情况灵活选用所选单元。为便于课后的学习,本教材出版后还将编写配套教辅讲义,包括单词的词性、释义、课后英译汉练习参考译文等,并逐步加以完善。

本教材的编写为南京信息工程大学2010年教材基金立项资助项目。教材的编写、出版得到了南京信息工程大学教材基金和气象出版社的大力支持;在编写过程中,得到了大气科学学院教授寿绍文老师、缪启龙老师、陈海山老师等的鼓励和支持,他们对本教材的编写也提出了一些宝贵的意见,特此一并深表致谢!

本教材在编写过程中,我们参考了不少气象科技英语类原文的书籍和教材,并从中选用了各种材料作为课文;参考或选用资料的书籍和教材,我们在书后尽可能都附录了参考书目,特此向各书的编著者以及选文作者致以衷心的感谢。

由于编者多为从事英语专业教学人员,虽然对气象类英语文献有一定了解,但对于气象科技等专业知识还有待进一步学习,再加上出版时间较紧,因此,本教材还会有不足之处,恳请有关专家在阅读此教材后能提出宝贵的意见,也欢迎广大教师、学生、读者提出批评意见,以便再版时进一步完善。

编者

2011年10月

\_\_\_\_\_

• 1 •

|                    |  |       |
|--------------------|--|-------|
| Text II            | Layers of the Atmosphere & Energy in the Atmosphere                          | (101) |
| <b>Unit Seven</b>  |  | (109) |
| Text I             | The Dust-Blanketed Land  | (109) |
| Text II            | Predicting the Weather   | (117) |
| <b>Unit Eight</b>  |  | (123) |
| Text I             | Slower Living for a Rooted Future  | (123) |
| Text II            | Guilt-free Sushi   | (129) |
| <b>Unit Nine</b>   |  | (135) |
| Text I             | The Catlin Arctic Survey: A Melting Ocean                                    | (135) |
| Text II            | Food That Travels Well   | (142) |
| <b>Unit Ten</b>    |  | (148) |
| Text I             | How Can Humanity Avoid or Reverse the Dangers<br>Posed by a Warming Climate? | (148) |
| Text II            | Cloud-talk Decoded: Physics and Lasers Read<br>Honeycomb Cloud Pattern       | (159) |
| <b>Unit Eleven</b> |  | (163) |
| Text I             | The Road to Effective Mitigation of Green House<br>Effect                    | (163) |
| Text II            | The Greenhouse Effect  | (176) |
| <b>Unit Twelve</b> |  | (183) |
| Text I             | Impact on Agriculture, Food Supply and Human<br>Health                       | (183) |
| Text II            | Weather Hazards in Agriculture   | (197) |





# UNIT ONE

## TEXT I The Santa Ana

Joan Didion

### Pre-reading Questions

1. Have you ever witnessed a typhoon, a flood, or a drought? Or you may have read or heard about a case of such a natural phenomenon.
2. How is man likely to behave when he comes face to face with the forces of nature? And how is man affected by the forces of nature?

There is something uneasy in the Los Angeles air this afternoon, some unnatural stillness, some tension. What it means is that tonight a Santa Ana will begin to blow, a hot wind from the northeast whining down through the Cajon and San Gorgonio Passes, blowing up sandstorms out along Route 66, drying the hills and the nerves to the flash point. For a few days now we will see smoke back in the canyons, and hear sirens in the night. I have neither heard nor read that a Santa Ana is due, but I know it, and almost everyone I have seen today knows it too. We know it because we feel it. The baby frets. The maid sulks. I rekindle a waning argument with the telephone company, then cut my losses and lie down, given over to whatever it is in the air. To live with the Santa Ana is to accept, consciously or unconsciously, a deeply mechanistic view of human behavior.

I recall being told, when I first moved to Los Angeles and was living on an isolated beach, that the Indians would throw themselves into the sea when the bad wind blew. I could see why. The Pacific turned ominously glossy during a Santa Ana period, and one woke in the night troubled not only by the peacocks screaming in the olive trees but by the eerie absence of surf. The heat was surreal. The sky had a yellow cast, the kind of light sometimes called “earthquake weather”. My only neighbor would not come out of her house for days, and there were no lights at night, and her husband roamed the place with a machete. One day he would tell me that he had heard a trespasser, the next a rattlesnake.

“On nights like that”, Raymond Chandler once wrote about the Santa Ana, “every booze party ends in a fight. Meek little wives feel the edge of the carving knife and study their husbands’ necks. Anything can happen.” That was the kind of wind it was. I did not know then that there was any basis for the effect it had on all of us, but it turns out to be another of those cases in which science bears out folk wisdom. The Santa Ana, which is named for one of the canyons it rushes through, is a *foehn* wind, like the *foehn* of Austria and Switzerland and the *hamsin* of Israel. There are a number of persistent malevolent winds, perhaps the best known of which are the mistral of France and the Mediterranean sirocco, but a *foehn* wind has distinct characteristics: it occurs on the leeward slope of a mountain range and, although the air begins as a cold mass, it is warmed as it comes down the mountain and appears finally as a hot dry wind. Whenever and wherever *foehn* blows, doctors hear about headaches and nausea and allergies, about “nervousness”, about “depression”. In Los Angeles some teachers do not attempt to conduct formal classes during a Santa Ana, because the children become unmanageable. In Switzerland the suicide rate goes up during the *foehn*, and in the courts of some Swiss cantons the wind is considered a mitigating circumstance for crime. Surgeons are said to watch the wind,

because blood does not clot normally during a *foehn*. A few years ago an Israeli physicist discovered that not only during such winds, but for the ten or twelve hours which precede them, the air carries an unusually high ratio of positive to negative ions. No one seems to know exactly why that should be; some talk about friction and others suggest solar disturbances. In any case the positive ions are there, and what an excess of positive ions does, in the simplest terms, is make people unhappy. One cannot get much more mechanistic than that.

Easterners commonly complain that there is no “weather” at all in Southern California, that the days and the seasons slip by relentlessly, numbingly bland. That is quite misleading. In fact the climate is characterized by infrequent but violent extremes; two periods of torrential subtropical rains which continue for weeks and wash out the hills and send subdivisions sliding toward the sea; about twenty scattered days a year of the Santa Ana, which, with its incendiary dryness, invariably means fire. At the first prediction of a Santa Ana, the Forest Service flies men and equipment from northern California into the southern forests and the Los Angeles Fire Department cancels its ordinary non-firefighting routines. The Santa Ana caused Malibu to burn as it did in 1956, and Bel Air in 1961, and Santa Barbara in 1964. In the winter of 1966—1967 eleven men were killed fighting a Santa Ana fire that spread through the San Gabriel Mountains.

Just to watch the front-page news out of Los Angeles during a Santa Ana is to get very close to what it is about the place. The longest single Santa Ana period in recent years was in 1958, and it lasted not the usual three or four days but fourteen days, from November 21 until December 4. On the first day 25000 acres of the San Gabriel Mountains were burning, with gusts reaching 100 miles an hour. In town, the wind reached Force 12, or hurricane force, on the Beaufort Scale; oil derricks were toppled and

people ordered off the downtown streets to avoid injury from flying objects. On November 22 the fire in the San Gabriels was out of control. On November 24 six people were killed in automobile accidents, and by the end of the week the Los Angeles *Times* was keeping a box score of traffic deaths. On November 26 a prominent Pasadena attorney, depressed about money, shot and killed his wife, their two sons and himself. On November 27 a South Gate divorcée, twenty-two, was murdered and thrown from a moving car. On November 30 the San Gabriel fire was still out of control, and the wind in town was blowing eighty miles an hour. On the first day of December four people died violently, and on the third the wind began to break.

It is hard for people who have not lived in Los Angeles to realize how radically the Santa Ana figures in the local imagination. The city burning is Los Angeles's deepest image of itself. Nathaniel West perceived that, in *The Day of the Locust*, and at the time of the 1965 Watts riots what struck the imagination most indelibly were the fires. For days one could drive the Harbor Freeway and see the city on fire, just as we had always known it would be in the end. Los Angeles weather is the weather of catastrophe, of apocalypse, and, just as the reliably long and bitter winters of New England determine the way life is lived there, so the violence and the unpredictability of the Santa Ana affect the entire quality of life in Los Angeles, accentuate its impermanence, its unreliability. The wind shows us how close to the edge we are.

## ► Glossary

- |                |               |
|----------------|---------------|
| 1. flash point | 2. sulk       |
| 3. mechanistic | 4. surreal    |
| 5. torrential  | 6. incendiary |

7. oil derricks
8. leeward slope
9. bear out
10. mitigating circumstance

· Notes ·

The Author—*Joan Didion* (1934—), U. S. novelist, essayist, journalist, and film scenarist, received her B. A. degree from the University of California at Berkeley in 1956. She is a native of California. Her principal works are the novels *Run River* (1963), *Play It As It Lays* (1970) and a collection of essays entitled *Slouching Towards Bethlehem* (1968), in which the present text appears. In this essay, Didion describes some of the tension of life in Los Angeles, California, U. S. A.

1. the Cajon /kəˈhəʊn/ (Pass) — a mountain pass in Southern California, to the northeast of Los Angeles. Its elevation is 4260 feet (ca. 1400 meters).
2. (the) San Gorgonio Pass— a mountain pass in Southern California, to the east of Los Angeles. Its elevation is 2616 feet (ca. 800 meters).
3. Route 66— one of the state highways in California near Los Angeles
4. hear sirens in the night— From the context, the “sirens” refer to those used on fire engines.
5. cut my losses— give up trying (in order to avoid negative results)
6. a...mechanistic view of human behavior — explaining human behavior as being determined by forces of nature or natural phenomena
7. Raymond Chandler (1888—1959), U. S. novelist and screenwriter, famous for his tough crime novels
8. a *foehn* /fəʊn; feɪn/ wind — a warm, dry wind that blows down the side

of a mountain. *Foehns* occur frequently in the Alps of Europe, where they usually blow from a southerly direction. In the winter, the *foehn* is easily recognizable, because it brings fair, warm weather.

9. *hamsin*— a variant spelling of *Khamsin* /kæm 'si: n/, hot dust-laden winds originating in the Sahara desert
10. *mistral*— a cold wind which blows occasionally from the north, especially in winter, and brings unusually cold weather to Mediterranean France
11. *sirocco* — a strong southerly wind that blows from the Sahara desert and affects principally the countries surrounding the central part of the Mediterranean Sea
12. *Swiss cantons*— territorial divisions in Switzerland. In Switzerland, there are twenty-two cantons and six demi-cantons. They are the basic units of the Swiss Confederation.
13. *Malibu* — a small city in southern California to the west of Los Angeles
14. *Bel Air*— western residential section of Los Angeles
15. *Santa Barbara* — a resort city in southern California, 160 km. northwest of Los Angeles
16. *the San Gabriel Mountains*— mountain ranges in southern California, to the northeast of Los Angeles
17. *Force 12... on the Beaufort Scale (蒲福风级)* — The Beaufort scale is a scale in which the force of the wind is indicated by numbers from 0 to 12. It was devised (ca. 1805) by Admiral Sir Francis Beaufort of the British navy. Force 12 wind is violent and destructive; its velocity is 73 - 82 miles (117 - 131km.) per hour. The term for Force 12 wind used in U. S. National Weather Service forecast is hurricane.

18. people ordered off the downtown streets — People were ordered to stay away from the downtown streets.
19. Pasadena— a city in southern California, ca. 16 km. northeast of Los Angeles. It is a residential, industrial, and educational center lying in the foothills of the San Gabriel Mountains.
20. South Gate — an industrial city in southern California just south of Los Angeles
21. Nathanael West (1902—1940) , U. S. novelist, was employed from the mid-1930s in Hollywood as a motion-picture scriptwriter. He was killed in an automobile accident near El Centro, California.
22. the Harbor Freeway— one of the freeways or expressways in Los Angeles. A freeway is a very wide road built for fast travel. It is called a motorway in Britain.
23. New England— a term first used by the early settlers from England which refers to the extreme northeastern section of the USA. The area now encompasses the state of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.
24. how close to the edge we are— “Edge” here means the point at which something dreadful and menacing may start to happen; or the “breaking point”.

### ● Text Comprehension

- I. Which of the following states the author's purpose in writing the essay?
  - A. To describe the various effects Santa Ana produces on the life quality of the Southern Californians.
  - B. To explain to the readers what Santa Ana is and how it affects the life of the



Southern Californians.

- C. To present the view with Santa Ana as an example that the way life is lived in a certain region is to a great extent determined by the natural conditions there.

**II. Judge whether the following statements are true or false.**

1. According to the author, even when a Santa Ana is approaching, it begins to have a bad effect on the behavior of the people.
2. Southern Californians do not need to be told by the weatherman when a Santa Ana is coming because it usually blows for twenty days around the same time every year.
3. Santa Ana is originally the name of a goddess in Roman mythology.
4. Apart from Southern California, Didion has made mention of a number of countries and regions in Europe and Africa that have also suffered from the malevolent effects of hot, dry winds like the Santa Ana.
5. It can be inferred from the essay that the greatest physical damage Santa Ana can do to Los Angeles is the fires it causes.
6. Normally a Santa Ana lasts three to four days but it can also last ten days longer.
7. In some regions of the world, even the law has had to take into consideration the negative effects of a wind like the Santa Ana on people's behavior.

**◆ Questions for Discussion**

1. Throughout the passage, Didion has given two definitions of the Santa Ana. Where can you find them?