

通晓科技英语

文选

南京大学外文系公共英语教研室编



7

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第七辑

南京大学外文系公共英语教研室编

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Long-lived Animals

Did you know that only a few animals live longer than human beings? Tortoises and turtles are probably the longest-lived animals. Tortoises have been known to live to 152 years and turtles to 129 years.

The killer whale is thought to be the longest-lived mammal. One killer whale is supposed to have lived to an age of 90.^① Elephants are probably the longest-lived land mammals. An elephant kept in an Australian zoo^② is known to have reached the age of 69.

A chimpanzee in an American zoo is known to have lived to an age of at least 50, while a monkey in an English zoo is known to have been at least 47 when he died.

Some birds live almost as long as human beings. A cockatoo is reported to have lived to 72 and a parrot to 70. An eagle-owl is known to have reached the age of 68.

Among domesticated animals, the top age for a horse is 50. Few dogs live beyond the age of 20, but at least one is known to have reached the age of 27. The top age of cats is a little higher. Several appear to have passed the 30 mark, and one or two may have lived to 36 or even 37. One domestic goose is thought to have reached the ripe old age of 80.

词 汇

long-lived ['lɒŋ-'lɪvd] *a.* 长寿的
human being ['hju:mən bi:ɪŋ]
n. 人

tortoise ['tɔ:təs] *n.* 龟
turtle ['tɜ:tl] *n.* 海龟
whale [hweɪl] *n.* 鲸

killer whale 逆戟鲸
mammal ['mæməl] *n.* 哺乳动物
Australian [ɒs'treɪljən] *a.* 澳大利亚的
chimpanzee [ˌtʃɪmpən'zi:] *n.* 黑猩猩
cockatoo [ˌkɒkə'tu:] *n.* 白鸚
parrot ['pærət] *n.* 鸚鵡
eagleowl ['i:gləʊl] *n.* 鸺鹠

domesticated [də'mestikeɪtɪd]
a. 驯化的(动植物)
top [tɒp] *a.* 顶的,最高的
mark [mɑ:k] *n.* 指标,分数
domestic [də'mestɪk] *a.* 养在家里的
domestic animal 家畜
goose [gu:s] (复数 **geese** [gi:s])
n. 鹅

短 语

(to) be known to 据人们所知
(to) live to (an age of) 活到(……岁)
(to) be thought to 据认为

(to) be supposed to 据推测
at least 至少
as long as 如……一样长
(to) be reported to 据说

注 释

- ① **to have lived to an age of 90:** 这是动词不定式的完成式,作主语补足语,说明主语 **One killer whale.**
- ② **kept in an Australian zoo:** 这是过去分词短语作后置定语,修饰 **elephant.**

参考译文

长 寿 动 物

你可曾知道只有几种动物比人类长寿吗? 龟和海龟大概是最长寿的动物了。龟已知能活 152 年,海龟则是 129 年。

逆戟鲸被认为是最长寿的哺乳动物。有一头逆戟鲸据推测已活了 90 年。象可能是最长寿的陆地哺乳动物。一头饲养在澳大利亚动物园里的大象已活了 69 年。

美国动物园里有一头黑猩猩起码活了 50 年，而英国动物园里的一只猴子寿终时至少已有 47 岁。

有些鸟类几乎与人类一样长寿。据报道，一只白鸚度过了 72 个春秋，而一只鸚鵡已过了 70 大寿。有一只鸚鵡是 68 岁。

在驯化的动物中，马的最长寿命为 50 年。狗则很少活过 20 年，但至少有一只已活了 27 年。猫比狗略为长寿，有些似乎已闯过 30 大关，而其中一、二只可能活了 36 甚至 37 年。有一头家鹅据认为达到 80 高龄。

(拓 碧译注)

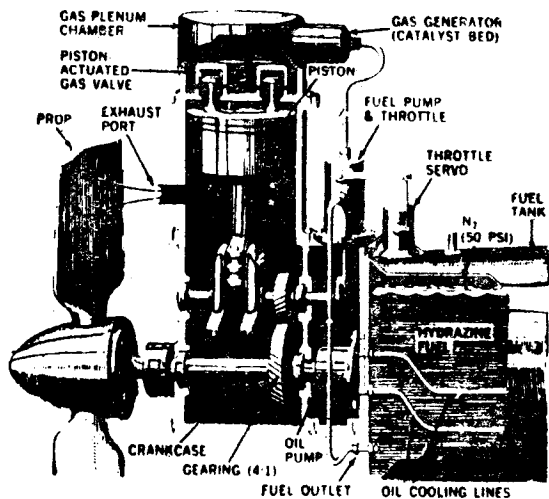
How the Hydrazine Engine Works?

Hydrazine, a compound of hydrogen and nitrogen, is a colorless, oily liquid that is very poisonous and also highly corrosive. It leaves fumes in the air that smell foul, like ammonia. But its ability to furnish heat energy for power without using oxygen makes it an ideal fuel for the Mini Sniffer^①.

The operation of the hydrazine engine is simple. The fuel is stored in a very thin aluminum tank where it is slightly pressurized (to 50 psi) with nitrogen. (Without the pressurization the lightweight tank would collapse when the fuel was used up and the Mini descended to low altitudes.) The hydrazine feeds into the fuel pump and is pressurized to about 850 psi. Then it goes to the throttle valve, where part of the fuel is bypassed back to the pump suction^②. The rest goes to the gas generator. Here a catalyst, primarily iridium (a rare metal similar to platinum), causes the liquid hydrazine to change to a hot gas at 1700°F. The gas is

delivered through a tube into the plenum where it is stored (still at 850 psi). As the piston goes over top dead center, the valves are opened, venting the gas into the cylinder③. As the piston starts down, the valves are closed, the plenum begins to repressurize, and the volume of gas in the cylinder expands to push the piston.

The oil-filled cooling line is routed through the fuel tank. This not only helps dissipate the engine heat but also warms the hydrazine so that it does not freeze in the cold temperatures at high altitude.



词 汇

hydrazine ['haɪdrəzi:n] *n.* 肼;
联氨 ($\text{NH}_2 \cdot \text{NH}_2$)
nitrogen ['naɪtrɪdʒən] *n.* 氮
colorless = colourless ['kʌlələs]

a. 无色的
oily ['ɔɪli] *a.* 油质(状)的
Mini Sniffer ['mini 'snɪfə] 微型
飞机

poisonous ['pɔɪznəs] *a.* 有毒的
 corrosive [kə'rouzɪv] *a.* 腐蚀性的
 fume [fju:m] *n.* 气味(体)
 foul [faʊl] *a.* 难闻的
 ammonia [ə'məʊnjə] *n.* 氨(水)
 furnish ['fə:nɪʃ] *v.* 为……提供
 operation [ˌɒpə'reɪʃən] *n.* 操作
 pressurize ['preʃəraɪz] *v.* 对……加压力
 psi = pounds per square inch
 磅/英寸²
 pressurization [ˌpreʃəraɪ'zeɪʃən]
n. 增压
 descend [dɪ'send] *v.* 下(降)
 altitude ['æltɪtju:d] *n.* 高度
 throttle valve ['θrɒtl vælv] *n.*
 节流阀
 bypass ['baɪpɑ:s] *v.* 环绕
 suction ['sʌkʃən] *n.* 吸

generator ['dʒenəreɪtə] *n.* 发动机
 catalyst ['kætəlist] *n.* 催化剂;
 触媒剂
 primarily ['praɪməriɪli] *ad.* 主要的
 iridium [aɪ'ridiəm] *n.* 铱
 platinum ['plætɪnəm] *n.* 铂(白金)
 plenum ['pli:nəm] *n.* 充实(满)
 piston ['pɪstən] *n.* 活塞
 dead center [ded 'sentə] *n.* 顶端
 vent [vent] *v.* 排出(气)
 cylinder ['sɪlɪndə] *n.* 汽缸
 route [ru:t] *v.* 按线路迂回
 dissipate ['dɪsɪpeɪt] *v.* 使……扩散
 freeze [fri:z] *v.* 冷冻

短 语

(to) be used up 耗尽; 用完
 (to be) similar to something

与……相似

注 释

- ① But its ability ... for the Mini Sniffer. 本句是一句简单句。主语为 ability, 后跟动词不定式 to furnish ... oxygen, 作它的定语。谓语为 makes; 宾语为 it; an ideal fuel ... Mini Sniffer 为宾语补足语。
- ② Then it goes to ... the pump suction. 此句中 where ... the pump suction 为非限制性定语从句, 修饰 the throttle

valve.

- ⑧ As the piston ... the cylinder. 本句为主从复合句。主句为 the valves are opened. 句子开头的 as ... dead center 为时间状语从句。venting ... cylinder 为现在分词短语,作全句的结果状语。

参考译文

肼发动机是怎样工作的?

肼这种氮和氢的化合物(N_2H_4),是一种无色油质液体。它含有剧毒以及很强的腐蚀性。和氨水一样,肼在空气中散发出一种难闻的气味。然而,它不用氧气就能为发动机提供热能,这使它成为微型飞机的一种理想的燃油。

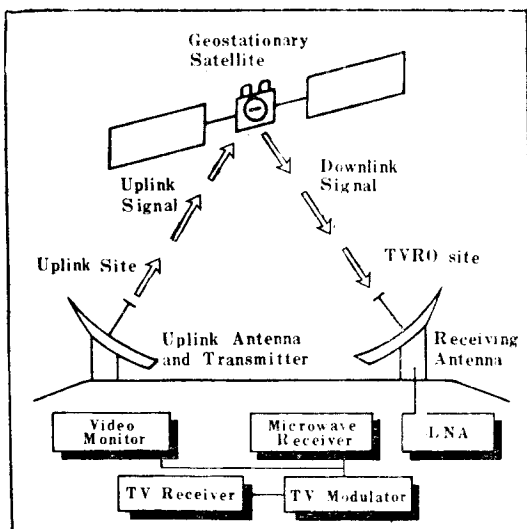
肼发动机的操作简单。将这种燃油储存在一只很薄的铝箱中,用氮气对其稍加压力至每平方英寸 50 磅。(如不增压,那末,当燃油烧光,微型飞机降到低空时,轻质铝箱就会压扁。)肼供入燃油泵后,被增压至每平方英寸约 850 磅,然后进入节流阀。这时,其中一部分燃油回到空吸泵,其它进入气体发动机。此时,发动机里的催化剂(以一种与铂相似的稀有金属铱为主),便导致了液态肼的变化,使其成为 $1700^{\circ}F$ 的高热气体。这种气体通过管道被输送进高压气室,并储存在那儿,(压力仍为每平方英寸 850 磅)。当活塞行进到上死点时,阀门打开,将气体排入气缸。当活塞开始下行时,阀门关闭,高压气室再次开始增压,气缸里的气体体积膨胀,再次推动活塞。

灌肼冷却线路经过油箱。这不仅有助于发动机的散热,而且还能保持肼的温度,使其在高空的寒冷气温下也不至于凝固。

(钱兴荣译注)

Tuning in Satellite TV

Like a microwave relay station, the geostationary satellite accepts TV signals from ground-based stations. These uplink sites use giant parabolic antennas — as large as 18.5 meters (60ft.) in diameter — and as much as six KW of transmitter power. Transmitted in the 5.9-to-6.4-gigahertz (5900 to 6400 megahertz) frequency band, each uplink transmission is addressed to a specific channel, or transponder, aboard the satellite. There the signals are translated to a new downlink frequency in the 3.7 to 4.2 GHz band. A downlink amplifier boosts the weakened signal up to five watts of peak power and beams it downward via a small parabolic antenna. Because of the satellite's high vantage point above the equator, its line-of-sight signal can be received almost anywhere in North America (see map). The downlink signal can be picked up at any television-receive-only (TVRO) site, commercial or private. A parabolic antenna as small as three meters (10ft.) in diameter can pick up the downlink signals, which are then boosted by the LNA, a signal preamplifier mounted at the antenna.① Carried inside (by lowloss coaxial cable) to a microwave receiver, the signal is converted to one that can be viewed directly on a TV monitor. Or the signal can be channeled through a modulator for further processing so it can be picked up by a conventional TV tuner.



词 汇

tune [tju:n] *v.* 接收

satellite ['sætəlaɪt] *n.* 卫星

microwave ['maɪkrəweɪv] *n.* &
a. 微波(的)

relay ['reɪlɪ] *n.* 中继站

geostationary [dʒiəʊ'steɪʃənə-
ri] *a.* 与地球的相对位置保持
固定不动的

geostationary satellite 同步
卫星

ground-based ['graʊnd'beɪst] *a.*
地面的

uplink ['ʌplɪnk] *n.* 上行线路

giant ['dʒaɪənt] *a.* 巨(大,型)的

parabolic [pærə'bɒlɪk] *a.* 抛物
线(性)的

antenna [æn'tenə] *n.* 天线

diameter [daɪ'æmɪtə] *n.* 直径

KW = kilowatt ['ki:ləʊwɒt] *n.*
千瓦, 瓩

transmitter [trænz'mɪtə] *n.* 发
射机

transmit [trænz'mɪt] (transmit-
ted; transmitting) *v.* 传播, 发
射

gigahertz ['gɪgəhɜ:tʒ] *n.* 千兆赫

megahertz ['megəhɜ:tʒ] *n.* 兆赫
(兹)

band [bænd] *n.* 波段
address [ə'dres] *v.* 给, 送交
channel [tʃænl] *n. & v.* 波道;
 分波道
transponder [trænz'pɒndə] *n.*
 发射机
aboard [ə'bɔ:d] *prep.* 在(卫星)
 上
translate [træns'leɪt] *v.* 转换
downlink ['daunlɪŋk] *n.* 下行线
 路
amplifier ['æmplɪfaɪə] *n.* 放大
 器
boost [bu:st] *v.* 增压, 放大
watt [wɒt] *n.* 瓦特
peak [pi:k] *n.* 最高(负荷)
beam [bi:m] *v.* 发射(无线电信
 号)
downward ['daunwəd] *a. & ad.*
 向下(的)
via ['vaɪə] *prep.* (经)由, 通过
vantage ['vɑ:ntɪdʒ] *n.* 优势
equator [i'kweɪtə] *n.* 赤道
line-of-sight ['laɪn əf 'saɪt] *n.*
 视线

television-receive-only ['telɪvi-
 zən rɪ'si:v 'əʊnli] *a.* 单接收
 电视的
commercial [kə'mɜ:ʃəl] *a.* 商业
 (用)的
private ['praɪvɪt] *a.* 民用的
LNA = *low-noise amplifier* 低
 噪声放大器
preamplifier [pri:'æmplɪfaɪə] *n.*
 前置放大器
mount [maʊnt] *v.* 安装
low-loss ['ləʊləs] *a.* 低损耗的
coaxial [kəu'æksɪəl] 或 *coaxal*
 [kəu'æksəl] *a.* 同轴的
cable ['keɪbl] *n.* 电缆
receiver [rɪ'si:və] *n.* 接收机
monitor ['mɒnɪtə] *n.* 监视器
modulator ['mɒdjuleɪtə] *n.* 调
 节器
processing ['prəʊsesɪŋ] *n.* 处
 理, 变换
conventional [kən'venʃənl] *a.* 普
 通的
tuner ['tju:nə] *n.* 调谐器

短 语

(to) *tune in* 收看

(to) *pick up* 接收(到)

注 释

- ① A parabolic antenna ... at the antenna. 此句中的 *which* are then boosted by the LNA 为非限制性定语从句, 修饰前面的 the

downlink signals. a signal preamplifier 为 the LNA 的同位语; mounted at the antenna 为过去分词短语作后置定语, 修饰 preamplifier.

参考译文

卫星电视的接收

同步卫星和微波中继站一样,也是从地面站接收电视信号的。这些上行线路地面站使用巨大的抛物面天线(直径大至 18.5 米,合 60 英尺),发射机功率达到六千瓦。每一上行线路都以 5.9—6.4 千兆赫(5900—6400 兆赫)的频率波段,将信号发射到卫星上一种特殊波道,或转发机中去。这些信号在那里被变成 3.7—4.2 千兆赫的下行线路频率。下行线路放大器将削弱了的信号增大到五瓦特的最大功率,并通过一小型抛物面天线发射下来。由于卫星高处在赤道上空,它的视线信号几乎在北美到处都能收到(见图)。任何单接收电视的接收站,无论是商业用的还是民用的,都能收到这种下行线路信号。直径小至 3 米(10 英尺)那样的抛物面天线就能接收到下行线路信号;然后用安装在天线上的前置信号放大器(低噪声放大器 LNA),将这些下行线路信号放大。信号通过低损耗同轴电缆输入微波接收机后,被转换成一种能从电视监视器中直接看到的信号。或者,也能通过调制器将信号传输出去进一步处理,以便能被普通的电视调谐设备所接收。

(欣 荣译注)

From the Earth: Greetings

Radio astronomy has greatly increased our understanding

of the universe. Radio telescopes have one big advantage over conventional telescopes in that they can operate in all weather conditions and can pick up signals coming from very distant stars. These signals are produced by colliding stars or nuclear reactions in outer space. The most powerful signals that have been received have been emitted by what seem to be truly colossal stars which scientists have named "quasars".^① A better understanding of these phenomena may completely alter our conception of the nature of the universe. The radio telescope in England was for many years the largest in the world. A new telescope, over twice the size, was recently built in West Virginia.

Astronomers no longer regard as fanciful the idea that they may one day pick up signals which have been sent by intelligent beings on other worlds.^② This possibility gives rise to interesting speculations. Highly advanced civilizations may have existed on other planets long before intelligent forms of life evolved on the earth. Conversely, intelligent beings which are just beginning to develop on remote worlds may be ready to pick up our signals in thousands of years' time, or when life on earth has become extinct. Such speculations no longer belong to the realm of science fiction, for astronomers are now exploring the chances of communicating with living creatures (if they exist) on distant planets. This undertaking which has been named Project Ozma was begun in 1960, but it may take a great many years before results are obtained.

Aware of the fact that it would be impossible to wait thousands of millions of years to receive an answer from a distant planet, scientists engaged in Project Ozma are concentrating their attention on stars which are relatively close. The Green Bank telescope in West Virginia has been specially designed to distinguish between random signals and signals which might be in code. Even if con-

tact were eventually established, astronomers would not be able to rely on language to communicate with other beings. They would use mathematics as this is the only truly universal language.③ Numbers have the same value anywhere. For this reason, intelligent creatures in any part of the universe would be able to understand a simple arithmetic sequence. They would be able to reply to our signals using similar methods. The next step would be to try to develop means for sending television pictures. A single picture would tell us more than thousands of words. In an age when anything seems to be possible, it would be narrow-minded in the extreme to ridicule these attempts to find out if there is life in other parts of the universe.④

词 汇

radio astronomy 射电天文学

universe ['ju:nivə:s] *n.* 宇宙

telescope ['teliskəup] *n.* 望远镜

radio telescope 射电望远镜

conventional [kən'venʃən] *a.* 常

规的,普通的

operate ['ɒpəreit] *v.* 操作,运转

pick [pik] *v.* 挑选,选择

collide [kə'laɪd] *v.* 碰撞

emit [i'mit] *v.* 放射,散发

colossal [kə'lɒsl] *a.* 庞大的,巨大的

quasar ['kweɪzɑ:] *n.* 类星体

phenomena [fi'nɒmɪnə] (复) *n.* 现象

alter ['ɔ:lteɪ] *v.* 改变,变动

conception [kən'sepʃən] *n.* 概

念,想法

West Virginia ['west və'dʒɪnjə]

n. (美)弗吉尼亚州西部

fanciful ['fænsɪfʊl] *a.* 奇异的,空想的

intelligent [in'telɪdʒənt] *a.* 聪明的,理智的

being ['bi:ɪŋ] *n.* 人,生物

speculation [ˌspekju'leɪʃən] *n.* 推测

civilization [ˌsɪvɪlaɪ'zeɪʃən] *n.* 文明世界,文化

evolve [i'vɒlv] *v.* 进化,演化

conversely [kən'vɜ:sli] *ad.* 相反地

extinct [ɪks'tɪŋkt] *a.* 绝种的,灭绝的

realm [reɪlm] *n.* 领域, 范围
 fiction ['fɪkʃən] *n.* 虚构, 小说
 science fiction 科学幻想小说
 explore [ɪks'plɔː] *v.* 探索
 communicate [kə'mjuːneɪt] *v.*
 通信, 通话
 creature ['kri:tʃə] *n.* 生物, 人
 undertaking [ˌʌndə'teɪkɪŋ] *n.* 事
 业, 企业, 任务
 project ['prɒdʒekt] *n.* 计划, 工
 程
 distinguish [dɪ'stɪŋɡwɪʃ] *v.* 区
 别, 识别

random ['rændəm] *a.* 任意的,
 无规则的
 code [kəʊd] *n.* 电码
 mathematics [ˌmæθi'mætiks] *n.*
 数学
 arithmetic [ə'riθmətik] *n.* 算术,
 计算
 sequence ['siːkwəns] *n.* 序列
 television [ˌteliˌvɪʒən] *n.* 电视
 narrow-minded [ˌnærəʊ 'maɪn-
 dɪd] *a.* 目光短浅的, 气量狭窄
 的
 ridicule [ˌrɪdɪkjuːl] *v.* 嘲笑

短 语

(to) have an advantage over 胜
 于, 优于
 in that 既然; 因为
 (to) give rise to 引起, 使发生
 (to) communicate with 和……
 通信, 与……通话

(to) be engaged in 从事于
 (to) concentrate attention on 将
 注意力集中于
 a great many 许许多多
 in the extreme 极端, 非常

注 释

- ① The most powerful signals that ... which scientists have named "quasars". The most powerful signals 是主语, have been emitted 是谓语动词, that have been received 为关系代词 that 引导的定语从句, 修饰 signals; what seem ... quasars 为连接代词 what 引导的名词从句, 作介词 by 的宾语, which scientists ... quasars 为定语从句, 修饰 stars.
- ② Astronomers no longer regard as ... on other worlds. the idea ... worlds 为宾语, 其中 that they ... on other worlds 是 the idea 的同位语从句. as fanciful 为宾语补足语, 因宾语太长,