At top speed

Grammar

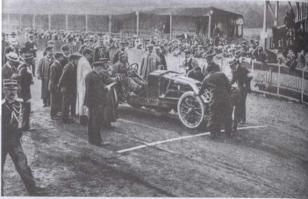
Tenses in time clauses and time adverbials

1a Read the article below and then choose the correct word or phrase.

THE HISTORY of GRAND PRIX RACING

Grand Prix racing has its roots in organised automobile racing that began in France (1) (as far back as) / as long as 1894. Organisers were keen to exploit motor racing as a showcase for their cars, and the first race, which took place (2) in / on July 22 of that year, organised by a Paris newspaper, (3) was held / had been held over the 128-km distance between Paris and Rouen. On that occasion, although Jules de Dion won the race, he (4) was not given / had not been given the prize because his car (5) has relied / relied on a mechanical stoker, a device for putting coal into a boiler.

(6) During / Meanwhile James Gordon Bennett Inr established the Gordon Bennett Cup in the USA, hoping that the creation of such an international event would encourage manufacturers to improve their cars. However, it was (7) only when / not until 1906 that the Automobile Club de France organised a Grand Prix on a circuit in Le Mans. The race (8) was won / had been won by the Hungarian-born Ferenc Szisz in a Renault.



In this (9) period / time, races were heavily nationalistic affairs, with a few countries setting up races of their own, but no formal championship holding them together. The cars all had a mechanic on board as well as a driver, and these two (10) allowed / were allowed to work on the cars (11) during / over the race. Races (12) were run / were being run over a lengthy circuit of closed public roads, rather than purpose-built tracks, and given the state of the roads (13) at / by this time, repairs were a common occurrence. Grand Prix races gradually spread through Europe and the US, and in 1924, the many national motor clubs banded together to form an association (AIACR) which was empowered to regulate Grand Prix and other forms of international racing.

Eventually Grand Prix racing (14) evolved / was evolving into formula racing, and the Formula One so popular now can be seen as its direct descendant. (15) In / To this day, each event in the Formula One World Championships is still called a Grand Prix.

b Match the two halves of the sentence.

- 1 I'll be drafting our presentation-
- 2 As soon as I've finished my essay,
- 3 He read most of the novel
- 4 When I know the answer to your question,
- 5 I'll talk to the electrician about the problem
- 6 He'll be coming straight home
- 7 By the time I'd collected all the statistics,
- 8 As soon as they'd come to an agreement,
- 9 The top player injured his wrist
- 10 I'll get some new strings for my guitar

- a while we were all travelling back on the train.
- b while you draw up the graphs we need for it.
- c I took the contract down to the legal office.
- d I'll hand it in to my tutor.
- e there wasn't time to finish the report.
- f while he was serving for the set.
- g while we're out shopping together in town.
- h when he's finished his shift at the hospital.
- i I'll tell you what it is.
- j as soon as I see him tomorrow.

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Time expressions with at, in and on

- 2 O Complete the sentences with the correct preposition.
 - 1 Maria met her future husbandin......... the early nineties.
- 2 Not everyone is willing to work overtimeweekends.
- 3 The technican is here Mondays and Fridays.
- 4 A positive attitude will bring great results the end.
- 5 | performed badly because | wasn't sleeping well might.
- 6 It's always difficult to know what to doyour first evening in a new city.
- 8the beginning of the week I was not absolutely sure I would enjoy my new job.
- 9 My company is overloaded with printing work certain times of day.
- 10 A good knowledge of several languages will help us the future.

Writing | Part 1

An essay

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1 Read the exam task below.

Your class has attended a panel discussion on what methods local authorities should use to limit the use of cars.

What methods could local authorities use to limit the use of cars?

- public transport
- education
- charges

Some opinions expressed in the discussion:

'Cars are convenient.'

'People don't realise the impact individuals make.'

'Making people pay to drive through cities is a good idea.'

Write an essay for your tutor discussing **two** of the methods in your notes. You should explain **which** method you think is more important for local authorities to consider and give reasons to support your opinion. You may, if you wish, use the opinions expressed in the discussion, but you should use your own words as far as possible.

- 2a Complete the gaps in the essay, choosing expressions from the box.
- **b** Tick the two methods mentioned in the essay and the opinion that was discussed.
- c Which method did the candidate think was the most successful and why?

accordingly an additional benefit another way of in combination in conclusion moreover nevertheless resulting in therefore there is no doubt that this means that to some extent

Nowadays an increasing number of people own and drive cars and in many cities this has become a real problem causing traffic jams and slow journeys. One obvious solution is for local authorities to spend more on public transport. (1) There is no doubt that this is the most effective method of moving people from one part of a city to another. A lot of money has been invested in buses and trams in many places and (2) this has been successful. (3), even when there is an excellent public transport system available, many people still seem to prefer their own cars and fewer people use public transport than might be expected. This, (4), might not be the best way to persuade people to leave their cars at home. (5) approaching the problem is to introduce a fee system. (6) drivers have to pay every time they go into the city and it makes them think before they get into their car. (7), they tend to make fewer journeys by car. (8), they may even try to share journeys to work with other people, (9)a reduction in the number of cars during peak times. (10) to bringing in a charge is that people may walk for some or part of their journey. (11), I think a system which charges people to drive into a city is a good first step to limiting the number of cars. (12) with this, money also needs to be invested in buses, cycle lanes and pedestrian streets to enable people to get around.

Vocabulary

Expressions with in

Complete the sentences below with an appropriate noun from the box.

accordance aid event form hope light position region

- 1 In theof an emergency, all passengers are requested to assemble on the lower deck.
- 2 In the of recent information, the government has revised its plans for educational reform.
- 3 The buyers were finally in a to go ahead with the purchase of the property.
- 4 We have amended the contract inwith your recent instructions.
- 6 A concert was arranged in of the loca children's home.
- 7 Compensation was offered in theof

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Reading and Use of English | Part 5

You are going to read an article about the life of John Paul Stapp. For questions 1-6, choose the answer (A, B, C or D) which you think fits best according to the text.

JOHN PAUL STAPP: THE SCIENCE of AVIATION

Captain John Paul Stapp, already a medical doctor, began his scientific career in the 1940s studying the negative effects of high-altitude flight, issues absolutely critical to the future of aviation. How could men survive these conditions? The problem of the bends, the deadly formation of bubbles in the bloodstream, proved the toughest, but after 65 hours in the air, Stapp found an answer. If a pilot breathed pure oxygen for 30 minutes prior to take-off, symptoms could be avoided entirely.

line 9 This was an enormous breakthrough. The sky now truly was the limit. The discovery pushed Stapp to the forefront of the Aero Med Lab and he abandoned his plans to become a pediatrician, instead deciding to dedicate his life to research. The Lab's mandate, to study medical and safety issues in aviation, was a perfect match for his talents. It was the premiere facility in the world for the new science of biomechanics.

Stapp was assigned the Lab's most important research project: human deceleration. This was the study of the human body's ability to withstand G forces, the force of gravity, when bailing out of an aircraft. In April 1947, Stapp travelled to Los Angeles to view the 'human decelerator', a rocket sled designed to run along a special track and then come to a halt with the aid of 45 sets of normal hydraulic brakes, which slowed it from 150 miles per hour to half of that speed in one fifth of a second. When it did, G forces would be produced equivalent to those experienced in an airplane crash. The sled was called



- 1 What does the writer mean when he says 'The sky now truly was the limit' (lines 9–10)?
 - A Stapp had set an unbeatable scientific record.
 - B All previous restrictions on flight had been removed.
 - C Pilots could now be trained to fly at greater altitude.
 - D A new design was needed for high-altitude planes.
- 2 What assessment of Stapp's skills does the writer make in the first paragraph?

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of a

- A He was a better scientist than his contemporaries.
- B He was able to solve scientific problems at great speed.
- C He was able to prove a theory set out by others.
- D He was ideally suited to employment at Aero Med
- 3 What was surprising about the construction of Gee Whiz?
 - A It incorporated a revolutionary new kind of brakes.
 - B It was initially designed to function without a passenger.
 - C It could tolerate exceptionally high G forces.
 - D It was not built of conventional materials.

the 'Gee Whiz'. Built out of welded tubes, it was designed to withstand 100 Gs of force, way beyond the 18 Gs that accepted theory of the time thought survivable. Early tests were conducted using a dummy, but Stapp soon insisted that conditions were right to use himself as a human guinea pig.

Exercising a modicum of caution on the first ride in December 1947, Stapp used only one rocket. The Gee Whiz barely reached 90 miles an hour, and the deceleration was only about 10 Gs. So Stapp began to increase the number of rockets, and by August 1948, he had completed 16 runs, surviving not just 18 Gs but a bone-jarring 35 Gs. Battered though he was by the tests, Stapp was reluctant to allow anyone else to ride the Gee Whiz. He feared that if certain people, especially test pilots, were used, their hotheadedness might produce a disaster. Volunteers made some runs, but whenever a new approach was developed, Stapp was his own one and only choice as test subject. There was one obvious benefit: Stapp could write extremely accurate physiological and psychological reports concerning the effects of his experiments.

Yet while the Gee Whiz allowed Stapp to answer the existing deceleration questions, new ones emerged. What could be done to help pilots ejecting from supersonic aircraft to survive? Stapp set out to find the answer on a new sled called Sonic Wind No. 1, which could travel at 750 miles

- 4 Why did Stapp usually insist on doing test runs on Gee Whiz himself?
 - A He felt his powers of observation were superior to those of other people.
 - B He was aware that some people were psychologically unsuited to the tests.
 - C He had little faith in the overall safety of the equipment.
 - D He thought it was unethical to recruit people for a dangerous task.
- 5 What was the significance of the experiments on Sonic Wind No. 1?
 - A They broke all previous speed records.
 - B They gradually improved deceleration times.
 - C They set new limits to human potential.
 - D They proved that most people would survive high speeds.
- 6 In this text, the writer implies that Stapp's main motivation was
 - A a desire to minimise loss of life.
 - B a spirit of adventure.
 - C a quest for expertise.
 - D a wish to be remembered after his death.

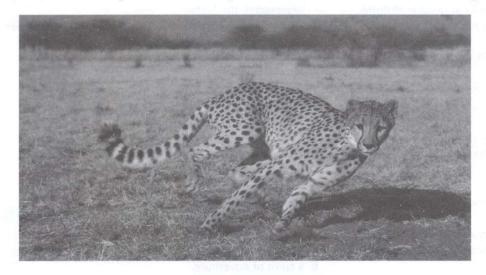
per hour, and withstand an astonishing 150 Gs. In January 1954, Stapp embarked on a series of runs leading to his 29th and final ride, which took him to above the speed of sound, protected only by a helmet and visor. And when the sled stopped, in a mere 1.4 seconds, Stapp was subjected to more Gs than anyone had ever willingly endured. He wasn't just proving that people could survive a high-speed ejection, he was establishing the parameters of human survivability to G force: new biological boundaries were being set.

That successful run on 10 December 1954 provided Colonel Stapp with an opportunity he had longed for – to promote the cause of automobile safety. Stapp had long realised that his research was just as applicable to cars as it was to airplanes. At every opportunity, Stapp urged the car industry to examine his crash data, and to design their cars with safety in mind. He lobbied hard for the installation of seat belts and improvements such as collapsing steering wheels. 'I'm leading a crusade for the prevention of needless deaths,' he told *Time* magazine in 1955.

Stapp's work in aeronautics and automobiles continued right up until his death in 1999 at age 89. He had received numerous awards and honors. But the best was the knowledge that his work had helped to save many lives, not just in aviation, but on highways around the world.

Listening | Part 2

11 You will hear a zoology student called Anna Samuels giving a presentation to other students about a trip she made to find out about cheetahs, the fastest-moving large cats in Africa. For questions 1–8, complete the sentences with a word or short phrase.



CHEETAHS

Volunteers were required to be (1)jobs that need doing.	, due to the number of different
Anna particularly appreciated being able to (2)	out of doors.
Anna mentions a (3) to explain t	he way a cheetah's feet function.
Anna's work involved using a new kind of (4)developed to track the cheetahs.	which scientists have
Anna collected detailed information about the cheetah position and speed.	ns' (5) ,
Anna found out that the speed of a cheetah is less imp (6)suddenly.	ortant than the way it can
Anna's results showed that (7)w for hunting.	vas the most popular time of day
Anna was surprised to find out that cheetahs went into	areas of (8)

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