

1. Read the article and answer the following questions.

1. What feature is going to make the Boeing 777X stand out from the crowd?
2. What is the reason behind designing the abovementioned structural novelty?
3. What lesson was learned by Boeing in the process of putting the 787 Dreamliner in 2007?
4. What are the main differences between the 777-300ER and the 777X?
5. Why is the assembly process of the 777X considered to be completely new?
6. "Here, it's fine work," said Clark. "It's highly skilled, like working on a watch." What do these two statements refer to?
7. What is the main difference between the 777X and Airbus A350-1000?

2. Match the words in bold in the text with their definitions.

1. almost ready - _____
2. having a lot of different parts and small details that fit together - _____
3. thin and narrow - _____
4. bent so that it becomes smaller or flatter and can be stored or carried more easily - _____
5. small problems that a company, product, system, etc. has at the beginning - _____
6. the process of testing the ability, quality or performance of somebody/something - _____
7. at the planned time - _____
8. to officially make a new product available - _____
9. in the process of putting together the parts of something such as a vehicle or piece of furniture - _____
10. something that you allow or do, or allow somebody to have, in order to end an argument or to make a situation less difficult - _____
11. (of two surfaces) completely level with each other - _____
12. a hard fight in which people try to obtain or achieve something - _____
13. next to or near something - _____
14. to make changes to something in order to improve it or make it more suitable - _____

3. Use some of the words from ex. 2 to complete the gaps in the following sentences. Sometimes you need to change the form of the word.

1. The new model is to be _____ in July.
2. NASA had to go back and painstakingly _____ their Apollo capsule from scratch.
3. The production process didn't begin _____.
4. The company agreed to employ me for a _____ period.
5. The firm will be forced to make _____ if it wants to avoid a strike.
6. I want the light fittings to be _____ with the ceiling.
7. He is engaged in _____ with his rival to get control of the company.
8. There is a row of houses immediately _____ to the factory.
9. Of course the more _____ the design the more numerous the processes.
10. New cars often suffer from _____.

4. Look at the text again and find examples of:

- a) 4 different ways of expressing the future (the first page of the article)
- b) 3 examples of the infinitive that is used to express an action that is an objective, a reason or a purpose (the paragraph on New Production System)
- c) 6 conjunctions (the first page of the article)

5. Talking about the future.

There is more than one possibility to express future events.

- **'FUTURE SIMPLE' (I will do)** is used when the speaker has no influence on the future event and also to express a future promise or willingness to do something. 'Will' is often shortened to 'll' and the negative form 'will not' contracted to 'won't'.
 - a) Temperatures **will** probably drop below zero tomorrow. Be careful - it'll be icy.
 - b) It **will** take us about five hours to drive from Frankfurt to Hamburg.
 - c) I'll help you with your work, if you want. It **won't** take long if we do it together.

- **'SHALL'** is used mostly in the questions shall I? shall we? We use shall I? shall we? to ask somebody's opinion (especially in offers and suggestions).
 - a) **Shall** I strip down the engine? (=do you want me to strip down the engine?)
 - b) What time **shall** we meet tomorrow? Let's meet at 9am.
 - c) I've got no money. What **shall** I do? (=what do you suggest?)

- **'FUTURE CONTINUOUS' (I will be doing)** is used is often used in English as a way to talk about something happening at a given point in the future.
 - a) Don't phone me between 9 and 10. I **will be giving** a presentation then.
 - b) What **will you be doing** tomorrow at 5pm? I need you to give me a hand with our project.
 - c) Come to my office at 11. I **will be waiting** for you.

- **'BE GOING TO'** is used to express personal plans or future intentions.
 - a) I'm **going to** visit New York at last. I'm **going to** pick up the tickets today.
 - b) Is he **going to** take the job in Berlin?
 - c) I'm **not going to** buy the car. I think I'll wait till next year.

- **'PRESENT CONTINUOUS' (I am doing)** is used for arrangements in the near future.
 - a) He **is leaving** Cracow tomorrow to take an A340 course in Toulouse.
 - b) We **are playing** tennis this afternoon. **Are you coming** to watch?
 - c) They **are meeting** on Wednesday to discuss the problem.

- **'PRESENT SIMPLE' (I do)** is often used in connection with schedules (plane, train etc.) or other travel arrangements.
 - a) Our plane **arrives** at 06:30 the next morning.
 - b) When **does** the ferry **depart** from Dover?
 - c) The next train to Cologne **leaves** this afternoon at 15:10.

- **'MAY'** is used to indicate that an action or event could occur (happen). Could is also used. In a technical context, this applies more to natural phenomena, unplanned technical incidents, failures, etc.
 - a) In dense cloud, ice **may** form on the wings.
 - b) If there is a lot of traffic on arrival, the aircraft **may** have to hold before landing.
 - c) If the washer is perished (worn, old), the union **may** leak.
 - d) Hot oil **could** cause injury.

- 'BE ABOUT TO + inf.' / 'BE ON THE POINT OF + -ing form' are used to refer to the near future

- a) Look! The bus **is about to leave!**
- b) The company **is on the point of closing down.**

1. Put the verb into the correct form. Sometimes two or more options are possible. If this is the case justify your choice.

- 2. I feel a bit hungry. I think _____ (I/have) something to eat.
- 3. Why are you putting on your coat? _____ (you/go) somewhere?
- 4. What time _____ (I/phone) you this evening? About 7.30?
- 5. Look! That plane is flying towards the airport. _____ (it/land).
- 6. We must do something, before _____ (it/be) too late.
- 7. The bus doesn't always come on time. _____ (we/have) to wait a few minutes.
- 8. Do you think _____ (you/still/do) the same job in ten years' time?
- 9. I'm not ready yet. _____ (I/tell) you when _____ (I/be) ready. I promise _____ (I/not/be) very long.
- 10. What are your plans for tonight? Well, _____ (I/meet) Steve at 8 o'clock.
- 11. Our flight _____ (be) delayed. The weather conditions have deteriorated.
- 12. The line mechanics in Milan _____ (check) the plane before _____ (it/leave) for Madrid.
- 13. _____ (I/fly) to the US next year.
- 14. I haven't decided yet where to spend my holidays. _____ (I/go) to Ireland.
- 15. Are you still watching that movie? What time _____ (it/end) end?
- 16. _____ (I/have) a party next Saturday. Can you come?

2. Fill in the blanks with appropriate verbs in a suitable FUTURE form.

- 1. After arrival in Singapore, I _____ my luggage, _____ at the information desk where to rent a car and then we _____ some money at one of the banks in the arrival hall.
- 2. I have bought a new hard disc for my computer which I _____ tomorrow afternoon.
- 3. Why are you taking down all the pictures? - I _____ the room next weekend.
- 4. That mechanic _____ the new parts. Right now, he is taking the necessary tools out of his tool box.
- 5. He is moving out of his flat in Watford because he _____ to Redhill. It's much closer to Gatwick Airport and it _____ him ten minutes by car only to be at his place of work.
- 6. I've never tried smoking and I'm not _____ now.
- 7. What are you doing with those tools? - I _____ a tire.
- 8. _____ you _____ me 500 Euros? - No, sorry, I don't have that much money.
- 9. The first flight _____ London Heathrow for Paris at 06:10. This is pretty early. _____ we _____ the second flight? It _____ London Heathrow at 06:50 and _____ in Paris at 08:05.

10. What time _____ you _____ home today? _____ you _____ me a lift to the train station on your way home?
11. I am just _____ you the same thing.
12. The temperature is slightly minus 0 degrees. I think it _____ - look at the sky. I hope the streets _____ too slippery.
13. This year, we _____ in one of the most important airline training symposiums in Birmingham. I guess we _____ lots of interesting people there. We _____ any problems in understanding the people because our English is perfect and we _____ able to talk to everybody fluently.
14. My car is at a garage. There is a problem with the starter. I _____ probably _____ the bus to work.
15. Boeing is on _____ its brand-new 777X.

6. THE INFINITIVE

“**TO**” + **the basic form** of the verb is used in technical language to express an action that is an objective, a reason or a purpose.

The lever is used **to extend** the flaps.

There is a knob **to set** the altitude.

To open the circuit, pull the circuit breaker.

Purpose = objective, target, function, aim, utilization. There are different ways to express purpose:

1. THE PURPOSE OF THE IS TO
 - a) *The purpose of the test bench is to test the equipment.*
 - b) *The purpose of this mechanism is to shut the control valve.*
 - c) *The purpose of the drain valves is to drain water.*
2. THE IS USED / DESIGNED / MADE TO
 - a) The test bench *is used to* test the equipment.
 - b) This mechanism *is designed to* shut the control valve.
 - c) The drain valves *are made to* drain water.
3. THE IS USED / DESIGNED / MADE FOR + “ING”
 - a) The test bench *is used for testing* the equipment.
 - b) This mechanism *is designed for shutting* the control valve.
 - c) The drain valves *are made for draining* water.

Here are some other common ways to express PURPOSE or FUNCTION:

PROVIDE + noun

The oil system **provides lubrication** for the bearings.

The APU **provides electrical power** for ground operation.

ACT AS, SERVE AS + noun

The spill valve in the fuel pump **acts as a safety valve**.

The APU **serves as a supplemental power source** when required in certain flight phases.

ENABLE, PERMIT, ALLOW + noun

The throttle levers **enable engine control**.

The temperature sensor **allows temperature monitoring**.

1. Look at the following systems or components and key words given in brackets. Provide some description of their purpose or function. You may have to change the form of the words in brackets.

- a) VSI (provide, rate, information) _____
- b) WARNING LIGHTS (design, visual indication, failure) _____
- c) PITOT TUBE (made, dynamic air pressure) _____
- d) CIRCUIT BREAKERS (design, protect, electrical) _____
- e) ESCAPE SLIDE (use, evacuate, emergency) _____
- f) THROTTLE LEVERS (use, increase/decrease, engine) _____
- g) GPU (provide, power, ground) _____
- h) RUDDER PEDALS (purpose, control, aircraft, yaw axis) _____
- i) SPOILER (purpose, reduce, wing, coordinate) _____
- j) BATTERIES (enable, supply, electrical, emergency) _____

2. Complete the sentences with the words given below.

PURPOSE / TO / USED / PROVIDES / FOR / ACTS / ENABLES / ARE

- 1. The accelerometer is made _____ measuring acceleration forces. FOR
- 2. The accelerometer is designed _____ measure acceleration forces. TO
- 3. The accelerometer is _____ to measure acceleration forces. USED
- 4. The _____ of the accelerometer is to measure acceleration forces. PURPOSE
- 5. The accelerometer _____ as an acceleration forces measuring device. ACTS
- 6. The accelerometer _____ acceleration forces measuring. PROVIDES
- 7. The accelerometer _____ accelerometer forces to be measured. ENABLES
- 8. Acceleration forces _____ measured by the accelerometer. ARE

3. Work in pairs. Use some of the key words and make 5 sentences describing some other instrument or device.

7. CONJUNCTIONS

Conjunctions are connecting words. They connect the ideas in a sentence. They define the logical relation between the ideas.

Examples:

CONJUNCTION	FUNCTION
and	addition, complementary
but	difference, comparison, incompatibility
so	consequence, result
as	reason, explanation
in order to	objective, purpose
if	condition
when	time

1. Fill in the blanks with appropriate conjunctions from the above table to make logical sentences.

1. The part is removed _____ it has 5,000 cycles.
2. The part is removed _____ it must be replaced.
3. The part is removed _____ repair it.
4. The part is removed _____ repaired in the workshop.
5. The part is removed _____ it is faulty.
6. The part is removed _____ it is serviceable.
7. The part is removed _____ it is unserviceable.

2. Complete sentences 1-15 with the following conjunctions:

AND / BUT / SO / SO AS TO / IF / DUE TO / ALTHOUGH / WHEREAS

1. The aircraft network uses AC _____ DC power.
2. The F27 is a turboprop _____ the A300 is a turbofan.
3. The anti-shimmy is used _____ reduce nose-wheel vibration.
4. The standby system is used _____ the main system fails.
5. There is a pressure drop _____ pump failure.
6. Both the low _____ high levels are pre-adjusted.
7. Main wheel brakes can be applied at touchdown _____ the nose gear shock absorber is not compressed.
8. The blower fan is inoperative _____ the equipment may overheat.
9. The amplifier is designed _____ give the flight crew priority over the hostess.
10. Check the line for faults _____ the antenna does not tune.
11. The card is faulty. _____ it must be replaced.
12. VHF transceiver 1 is mounted on rack 3 _____ VHF transceiver 2 is mounted on rack 5.
13. Voltage reading is not an absolute indication of battery condition. _____ it is recommended to have the batteries reconditioned if values are low.
14. The flight is delayed _____ bad weather.
15. Indication is automatic, _____ control is manual.