

AIRPORTS – AMAZING CITIES

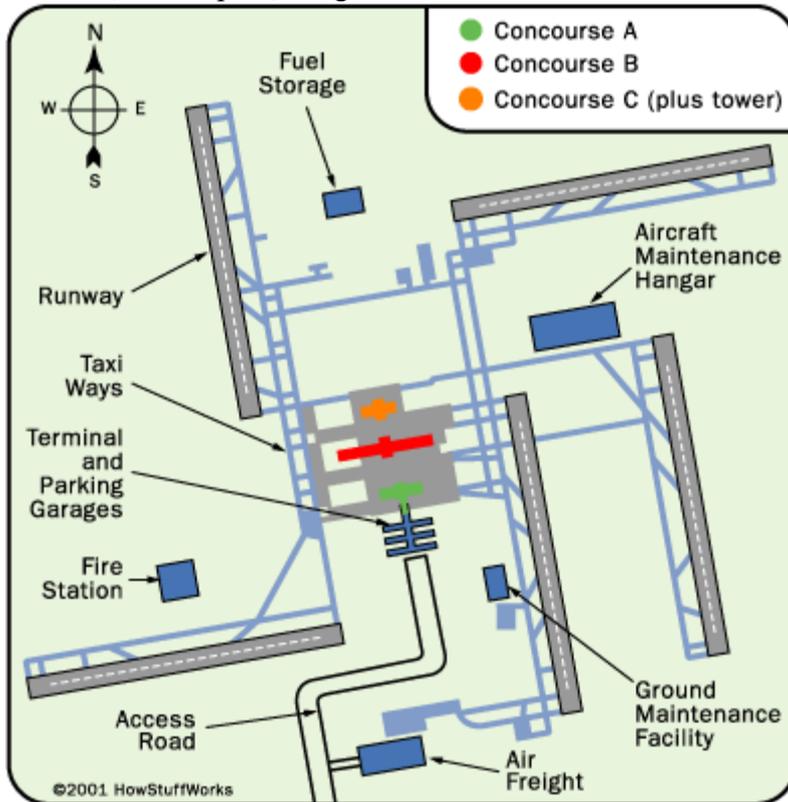
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Airports are amazing "mini-cities," providing services to all sorts of people and companies.

It's a typical airport layout, based on the layout of Denver International Airport. Airports have facilities to meet all of needs of pilots and other crew members. They have runways, terminals, fuel depots, hangars and others.



You can see that airports are huge businesses. For example, you saw that a big airport can have over a hundred acres of floor space in the terminals, millions of cubic yards of concrete in the runways and hundreds of people staffing the facilities. Denver's airport cost about \$5-billion to build and operating costs are \$160-million per year.

Commercial airports are publicly owned and generally financed through municipal bonds.

Airports typically own all of their facilities and make money by leasing them to airlines, air-freight companies and retail shops and services, as well as by charging for services like fuel and parking and taxes on airline tickets.

The revenues pay off the municipal debt and cover the operating costs. Airports often require other sources of funding as well, such as airport bonds and government grants. But most airports are self-sustaining businesses once they become operational.

About 90 percent of employees at airports work for private companies, such as airlines, contractors and concessions. Most of the remaining 10 percent work directly for the airport is administrators, terminal- and grounds-maintenance personnel and safety crews.

Air traffic controllers are employees of the federal government. Airports have their own departments of finance, personnel, administration and public relations, much like any city or municipality.

An airport can't exist in isolation. It depends on a massive surface-transportation system so that people can get to and from the airport, park and get from place to place within the airport structure itself.

Airports provide services, in which passengers need, in their concourses and terminals, the heart of any airport. Planes parked at the gates of terminals for passenger boarding and deplaning. Routine airplane maintenance, such as washing, de-icing and refueling, is done by airline personnel while the plane is parked at the gate.

Runways are amazing - a typical one is about 2 miles long, as wide as a 16-lane highway and about 3 feet thick!

Airplanes almost always have to refuel between flights. On this picture there are oil refineries. They take crude oil and turn it to products such as gasoline, jet fuel and plastics.

How airport security works. Terrorism has been a problem for airlines and air travelers since the 1970s. The first line of defense in airport security is the most obvious: fences, barriers and walls. One of the most important security measures at an airport is confirming the identity of travelers.

All public access to an airport is channeled through the terminal, where every person must walk through a metal detector and all items must go through an X-ray machine. Since different materials absorb X-rays at different levels, the image on the monitor lets the machine operator see distinct items inside your bag.

In addition to passenger baggage, most planes carry enormous amounts of cargo. All of this cargo has to be checked before it is loaded. One old-fashioned method of bomb detection still works as well or better than most hi-tech systems - the use of trained dogs, called K-9.

Air traffic controllers must coordinate the movements of thousands of aircraft, keep them at safe distances from each other, and direct them during takeoff and landing from airports, direct them around bad weather.

On this picture there is a typical profile of flight and in every part of flight the controllers monitor this plane and give instructions to the pilot.

There are two main and very beautiful achievements of people in aviation industry.

The first one is the biggest airport in the world. It's a Beijing Capital International Airport in China. It's bigger than 170 football fields.

The second one is the biggest aircraft in the world Airbus A380. This two-decked liner is capable of transferring about 555 passengers in standard configuration on distance till 15 000 kilometers.