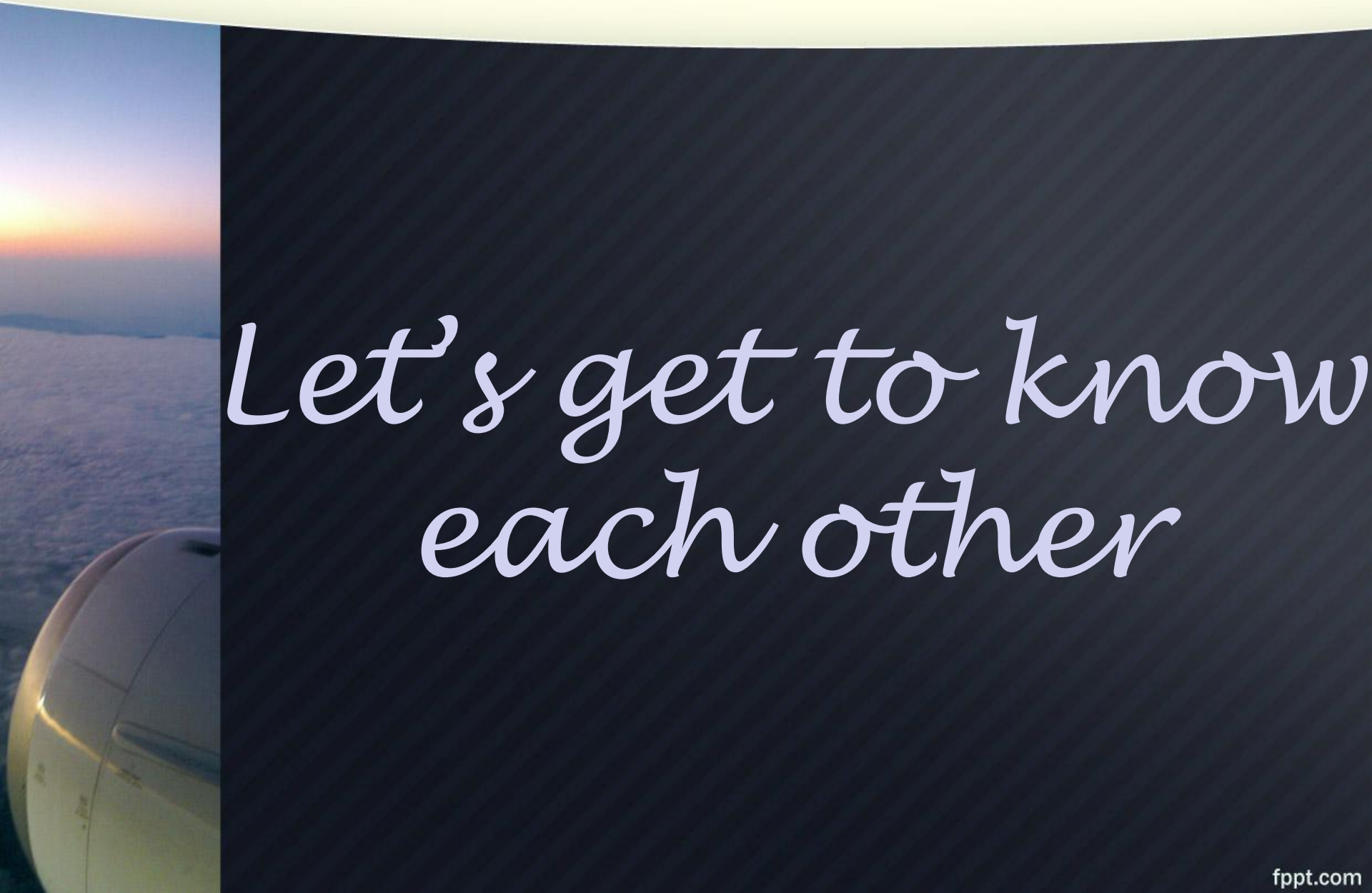
Welcome all



Your Profile

Let’s take a pre-test

Welcome to the class

Lecturers

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Rules and Regulations

- Respect to yourself and to each other
- Being HONEST at all times/things you do
- All students MUST attend the class more than 80% (3 times missing without properly reason, please contact at One-Stop Service to Withdraw)
- All students MUST apply to the uniform standard rules and regulations at all times in University (Except online course)
- No Food or Drink in the classroom (Except online course)

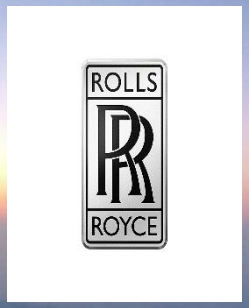
Assessment

- Morality and Ethics (Attendance/Honesty/Punctuality/Conscience/etc.) 10%
- Individual Presentation 20%
- Group Presentation (15+5) 20%
- Mid-term Examination 20%
- Final Examination 30%

Total 100%

**Remark: Assignments rely on the situations*

Introduction



- What is Aviation Industry?
- It is the firms engaged in …
- Research, Development, and Manufacture

- Aerospace system, manned or unmanned aircraft, missiles, space-launch vehicle, spacecraft

- Boeing Company, General Electric Company, Rolls-Royce

1. AIRCRAFT MANUFACTURERS

Produce

- Commercial planes with 2, 3, 4 engines

- Small planes called 'General aviation planes' with 1,2 jet engines or propeller .Small planes or light planes use for flight instruction, spraying field crops, serve small communities to larger airports called 'Commuter plane'

- Military planes, which include bombers, fighters

AIRCRAFT MANUFACTURERS

2. AIRPORT OPERATIONS

- Ground Facilities such as reservation, check in, gate, etc.
- Including Runway and Navigation Aids
- Air Traffic Control (ATC)

AIRPORT OPERATIONS

3. AVIATION SUPPORT INDUSTRIES

Provide services and supplies to airlines or airports

- Company supply fuel for airplanes
- Furnish Maintenance, or Repair services
- Food suppliers
- Airport support involve ground transportation
- Freight forwarder
- Specialized professional ie. flight insurance, weather information

AVIATION SUPPORT INDUSTRIES

AVIATION SUPPORT INDUSTRIES

4. SERVICE PROVIDERS OR TRAVEL AGENTS

- Important contributor
- Authorized to sell and issue tickets in and affordable price
- Supporting hospitality service such as hotel, car rental, tourism agent, or cruise operator
- Things needed when arrive at destination

ICAO

INTERNATIONAL CIVIL AVIATION ORGANIZATION

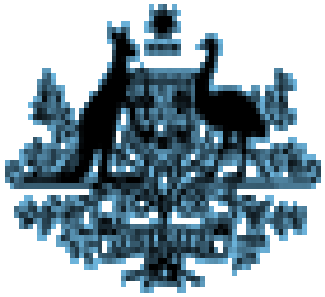
A United Nations Specialized Agency

- Created in1944, by signing Chicago Convention with 191 members
- UN specialized
- HQ at Montreal, Canada
- To develop international Standards and Recommended Practices (SARPs)

IATA

- 1919, International Air Traffic Association
- WWII ceased
- 1945 recreated as The International Air Transport Association
- Promote safe, regular, and economical air transport

CASA



Australian Government

Civil Aviation Safety Authority

- Civil Aviation Safety Authority
- Responsible for regulation of civil aviation of Australia

EASA

- The European Aviation Safety Agency
- EU agency

CAAT

สำนักงานการบินพลเรือนแห่งประเทศไทย
The Civil Aviation Authority of Thailand

- Aviation started to role in Thailand during the reign of King Rama 6
- The Ministry of Defense set the 'Aviation Division'
- The office of Air Transport elevated to Department of Commercial Aviation
- Oct 3rd 2545 changed to 'Department of Air Transport'
- Nov 24th 2552 changed to 'Department of Civil Aviation'
- Oct 1st, 2558 changed to 'The Civil Aviation Authority of Thailand'

Break 10 minutes

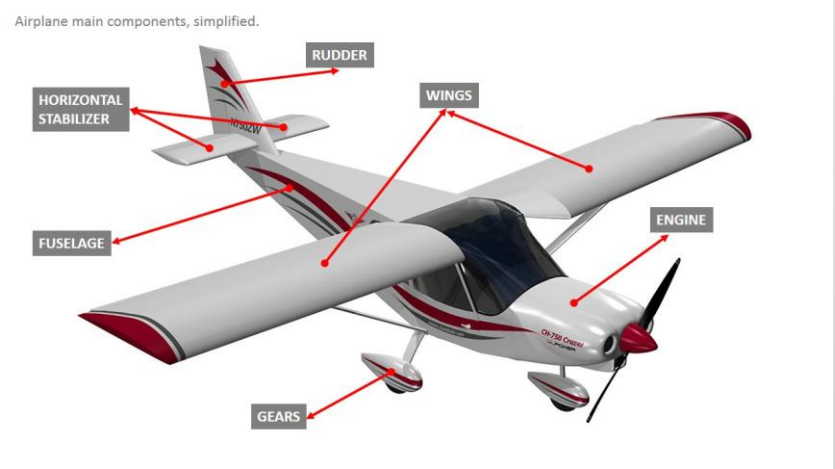
What is the ‘Airplane’?

- **Airplane is a Powered, fixed-wing aircraft which propelled forward by thrust from a jet engine or propeller**

https://youtu.be/Vqg2uDYOyTA

Basic Parts of Airplane

- Wings
- Fuselage or Body
- Empennage or Tail assembly
- Landing Gear
- Engines



Airplane Parts and Function

Horizontal Stabilizer
Control Pitch

Vertical Stabilizer
Control Yaw

Rudder
Change Yaw

Winglet
Decrease Drag

Elevator
Change Pitch

Wing
Generate Lift

Flaps
Increase Lift and Drag

Turbine Engine
Generate Thrust

Aileron
Change Roll

Cockpit
Command and Control

Slats
Increase Lift

Spoiler
Change Lift, Drag and Roll

Fuselage
Hold Things Together – Carry Payload

- **Flaps** are deployed downward on takeoff and landing to increase the amount of lift produced by the wing.
- **Slats** are another type of lift producing surface, installed on the leading edge, which are also used at takeoff and landing.
- The **spoilers**, located on top of the wing, are used to reduce the amount of lift created by the wing once the aircraft has landed.

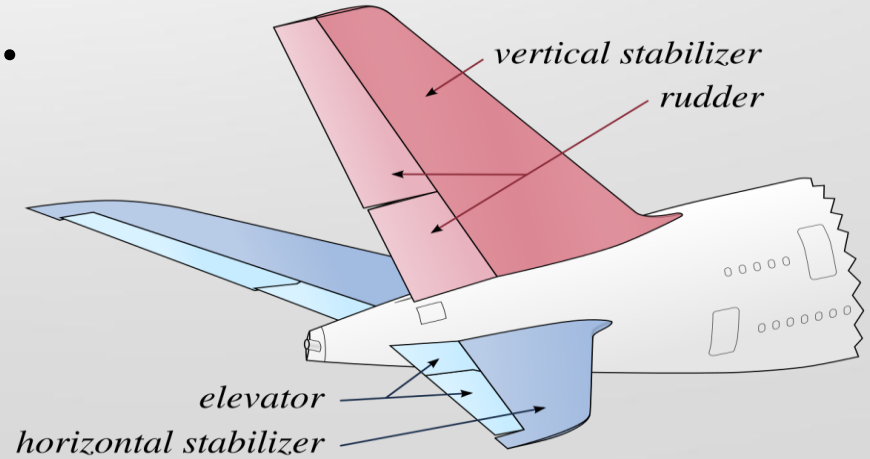
Fuselage or Body

- Extends from the nose to the tail and have a tube shape and are covered with a lightweight skin consisting of aluminum or a composite material on newer aircraft.
- Has flight deck, passenger cabin, and cargo compartment
- The fuel carried in the wings also fuselage

Tail

- The tail assembly, or empennage, is the rear part of the airplane
- Control surfaces on the empennage help to control and manoeuver the aircraft
- The tail has a fixed horizontal and vertical stabilizer.
- The **stabilizers** provide stability for the aircraft, to keep it flying straight.

- The vertical stabilizer keeps the nose of the plane from swinging side to side
- horizontal stabilizer prevents an up-and-down motion of the nose.
- At the rear, **the hinged part of the vertical stabilizer is called the rudder** used to deflect the tail to the left and right .
- **The hinged part of the horizontal stabilizer is called the elevator** and is used to deflect the tail up and down.



Landing Gear

- Or undercarriage, consists of the wheels and supports the weight of the plane on the ground.

- Landing gear maybe fixed or retractable. A fixed landing gear create drag, which can slow down the speed of the plane, so most high-speed planes are designed with retractable landing gear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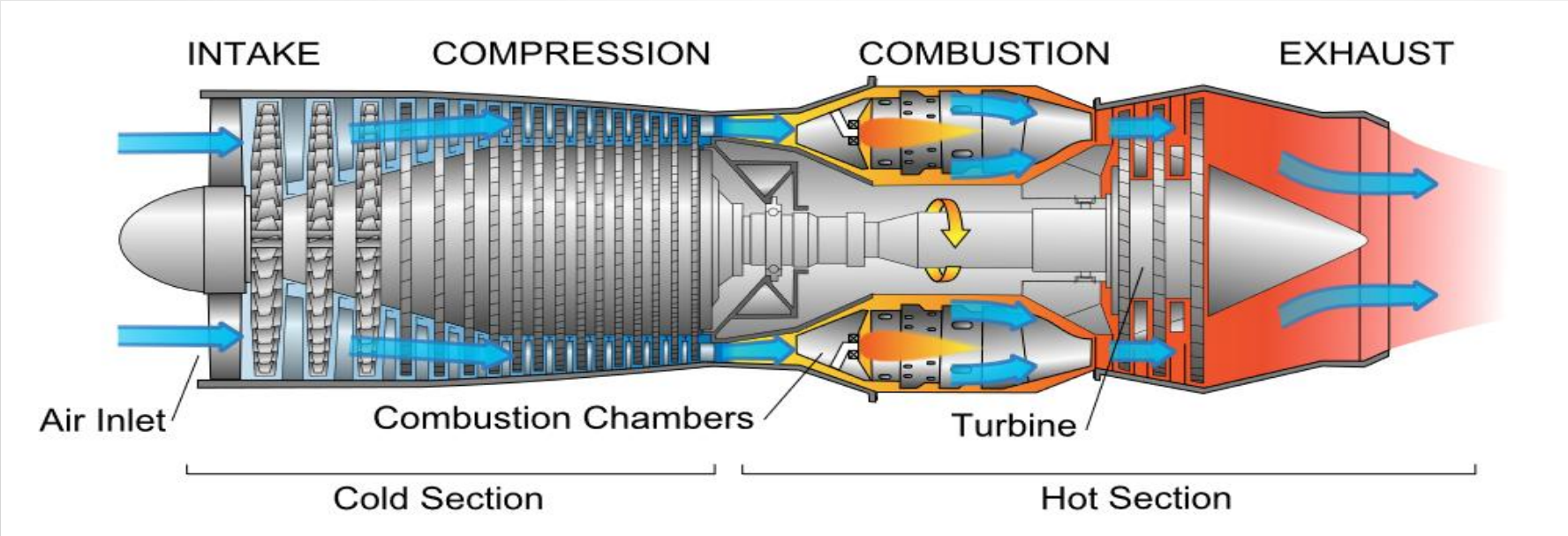
Engine (s)

- Produce the power that makes the plane fly.
- Jet engines enable large airplanes to fly long distances at high speeds
- Air is compressed, then burned with jet fuel in a combustion chamber, forming high velocity exhaust
- Turbine spinning run different parts of engine

Engine (s)


INTAKE
COMPRESSION
COMBUSTION
EXHAUST
Air Inlet
Combustion Chambers
Turbine
Cold Section
Hot Section

4 Forces to Fly

- **Gravity** :the natural force that pull an airplane to the earth when in flight.

- **Lift;** is the mechanical force that pushes a plane upward, against the gravitational pull. The movement of a plane's wing through the air creates lift.

- **Drag** ; is the force of air opposing the forward movement of the airplane.

- **Thrust;** is the force that opposes drag and moves the plane forward. The plane's engines or propeller create this thrust.

Changing Altitude and Direction

- **Climbing** :From Take off to Cruise level. Increase amount of Lift and increase the power for Thrust

- **Cruising** : Steady level of flying. All four forces are equal

- **Descending** : From Cruise level to Landing Decrease the power, reducing the Thrust and Lift, increasing Drag and Weight

Break 10 minutes

At the Airport

vocabulary

airline


airport


arrivals


baggage


baggage claim

boarding pass


cart

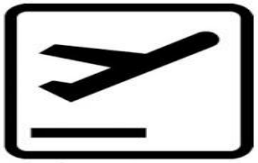

check-in counter


cockpit


control tower


crew


customs


departures

duty free


emergency exit


flight attendant

gate

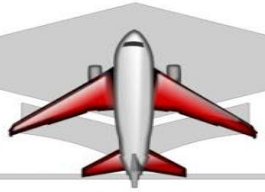

jet engine


life vest


passenger

passport


pilot


Plane
(aircraft/airplane
/ aeroplane)


seat


seat belt

What is airport?

Airport is the “ground-based” infrastructure necessary for airlines to operate.

The airlines are the airports’ most important customers.

Airports provide the services that the airlines require to operate safely and securely.

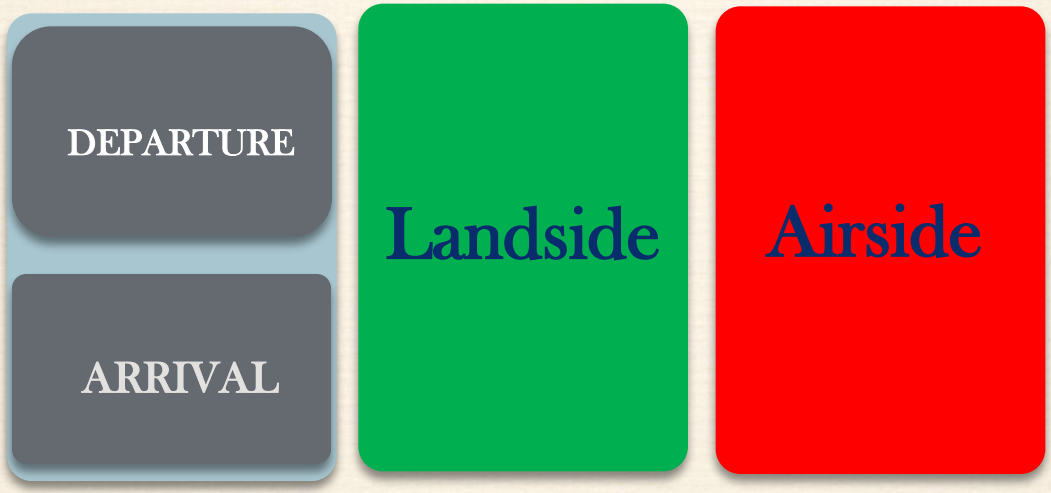
There are approximately 4,000 airports worldwide, including over 1,000 international airports.

Layout of Airport

- Every Airport has ‘Landside’, ‘Airside’, ‘Terminal’ structure

AIRPORT provides facilities to assist passengers to board and disembark from the aircraft.

The airport terminal may be divided vertically and horizontally in to 4 areas.



Airline Alliance

An airline alliance is an aviation industry arrangement between two or more airlines agreeing to cooperate on a substantial level. Alliances may provide marketing branding to facilitate travelers making inter-airline codeshare connections within countries. This branding may involve unified aircraft liveries of member aircraft

There are 3 airline alliances

1. Star Alliance
2. One world
3. Sky team

APPROACHING LIGHTS

SAFETY IN THE AIR

1. Crew Responsibilities

1.1 Flight-deck Crew / Cockpit Crew

Captain performs pre-flight checks within the flight deck, receives the necessary ATC clearance and programs the on-board navigation systems.

Copilot or First officer checks cockpit, engines, airframe, landing gear

1.2 Cabin Crew,

The Pre-flight inspection inspection includes all safety and emergency equipment located in the cabin (such as evacuation slides, fire fighting and first aid equipment).

SAFETY IN THE AIR

Aircraft Emergency Equipment

Absolute Aviation
Aviation English


Fire Extinguisher


Smoke Hood


Crash Axe


First Aid Kit


Oxygen Bottle


Life Vest


Flashlight


Megaphone


Radio Beacon


Escape Slide


Medical Kit


Restraint Kit

For daily aviation news, English tips and advice like our facebook page
www.facebook.com/absoluteaviation

2. Culture of Safety

Use The Aviation Safety Reporting System (ASRS) for air safety within the industry.

Pilots and other crew members report errors to improve air safety

3. Navigation Safety Aids

3.1 Airport Lighting

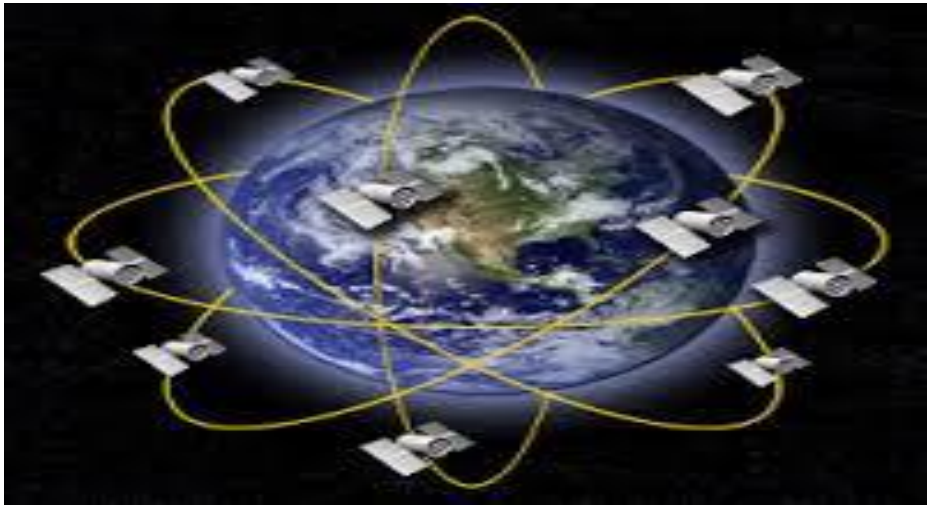
Assists pilots who are landing in poor weather or after dark

3.2 Instrument Landing Systems (ILS)

A landing navigation system that is used only within a short distance from the airport to enables aircraft to land ,incase the pilots are unable to see the runway. It does this by way of transmitted radio signals.

3.3 Global Positioning System (GPS)– using satellite

Allow airlines to navigate using satellites with little or no ground-based navigation.



AIR SAFETY ISSUES

1. Natural Hazards and weather conditions

1.1 Bird strike

AIR SAFETY ISSUES

1.2 Lightning

1.3 Ice and Snow ; on the runway or on the wings

1.4 Sand and Dust

1.5 Volcanic Dust Particles

2. Component and System Failures

Such as Fire on board especially the toxic smoke generated by burning materials

3. Human Factors

They may disregard the rules, of fail to comply with by mistakes, fatigue, confusion, or inattention. There can cause crucial errors to be made in aircraft operations, maintenance and servicing, leading to potential safety problems.

SECURITY

Aviation safety is to ensure airplanes are free from factors that may lead to injury or loss.

Governments, airport authorities and airlines has to implement an effective security controls and procedures to ensure the safety of passengers, crew, ground personnel and the general public at airport and in-flight.

The End

Q & A

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