

Welcome all

*Let's get to know
each other*

Your Profile

SCAN ME





Break 10 minutes



Introduction to Aviation Industry

ABI1201
Semester 1/2025

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%
- In-class quizzes 10%
- Individual Presentation 10%
- Group Presentation (15+5) 20%
- Mid-term Examination 20%
- Final Examination 30%

Total 100%

**Remark: Assignments rely on the situations*



Break 10 minutes



Introduction to Aviation Industry

ABI1201
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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

Aircraft Manufacturers

- Boeing / Airbus
- Produce commercial planes with 2, 3, 4 engines
- Also produce small planes called 'General aviation planes' with 1, 2 engines
- Source: Simple Flying, Aircraft Wiki, The Boeing Company



Aircraft Manufacturers


- Small planes with jet engines, by propeller driven
- Small planes or light planes use for flight instruction, spraying field crops
- Small planes can called 'Commuter plane' serve small communities to larger airports
- Source: www.Dreamstime.com



Airport Operations

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

Aviation Support Industries

- Wide range of 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

Service Providers or Travel Agents

- Important contributor
- Authorized to sell and issue tickets
- The roles are making customer feel stress free and memorable
- Affordable price
- Supporting hospitality service such as hotel, car rental, tourism agent, or cruise operator
- Things needed when arrive at destination

Types of Airline service

Scheduled Flights

- Predetermined routes according to timetable
- Use 'Wide' or 'Narrow' body aircraft
- Major Airlines, Low Cost Carriers, Regional Airlines

Non-scheduled Flights

- Not operate under a planned timetable
- Air Charter service



Break 10 minutes

Airline History

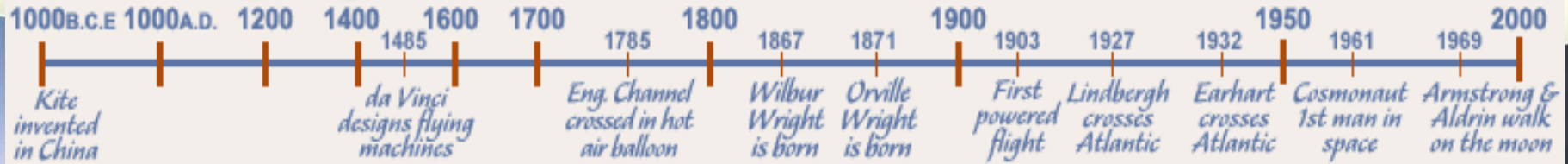
- What is 'History'?



- The study of the past events or the whole series of the past events connected to someone or something

Timeline of Flight

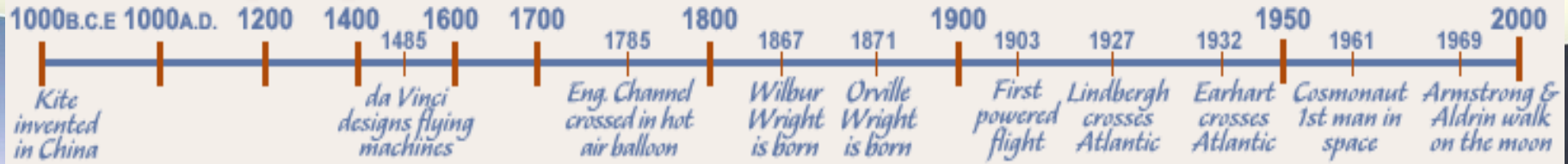
select a year from the timeline below, to view events:



- **400-1000 BCE**, Kite invented in China
- It was used in religious ceremonies
- Usually for fun, some sophisticated kites used for weather conditions
- Humans tried to fly like birds
- Made the wings with feathers and light weight wood
- Failed, because human muscles are not like a bird

Timeline of Flight

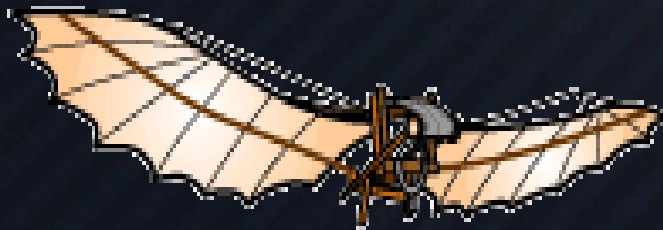
select a year from the timeline below, to view events:



- Greek engineer, Hero of Alexandria, worked with air pressure and steam to create source of power
- Aeolipile – jet of steam to create rotary motion
- 1485, Leonardo Da Vinci, had over 100 drawings
- Illustrated the wings and tails of bird
- Ornithopter



Hero of Alexandria
Aeolipile

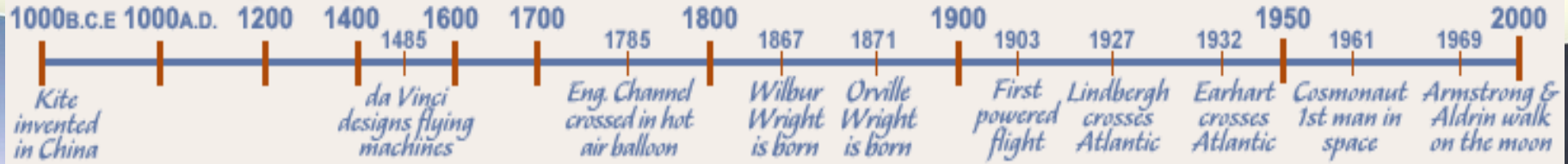


Leonardo Da Vinci
Ornithopter

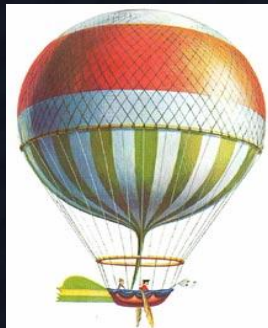


Timeline of Flight

select a year from the timeline below, to view events:



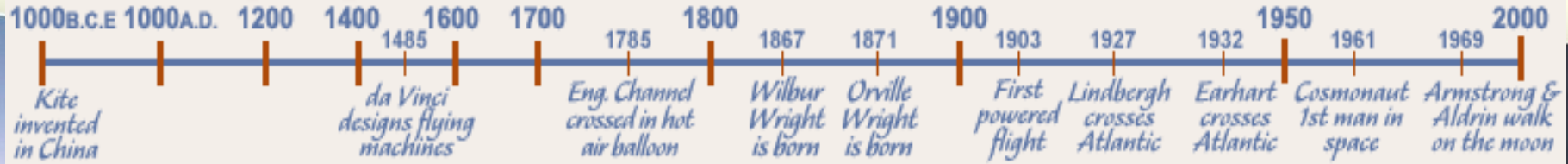
- **1783**, Joseph and Jacques Montgolfier invented Hot Air Balloon
 - Smoke for the fire to blow the silk bag
 - Hot air allowed balloon lighter than air
 - 1st passengers were sheep, rooster, and duck
 - 6,000 feet, more than one mile



- **1785**, Jean-Pierre Blanchard and John Jeffries cross the English Channel by balloon

Timeline of Flight

select a year from the timeline below, to view events:

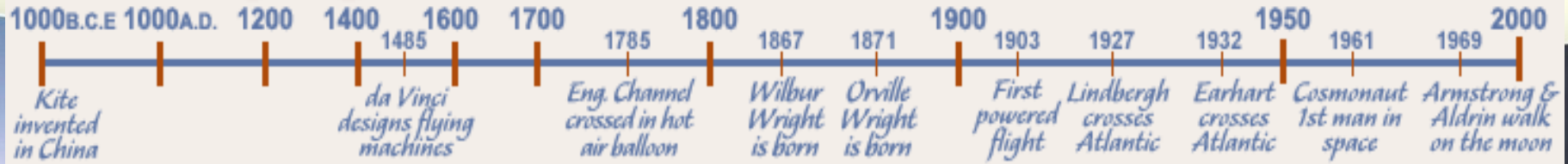


- **1799-1850's** – Sir George Cayley – Gliders – the father of aerodynamic, demonstrate lift and drag
- Used the movement of the body to control
- **1891**, Otto Lilienthal, German engineer
- Wrote a book about aerodynamics, was used by the Wright brothers as the basis of their designs
- He was killed when he lost control of the strong wind and crashed

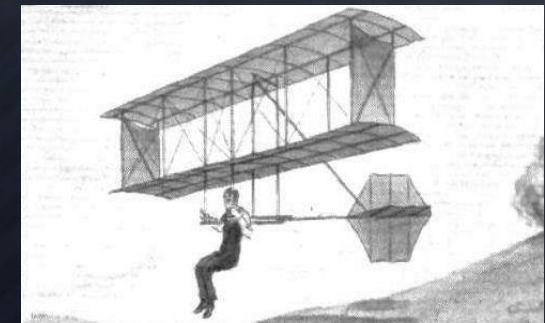


Timeline of Flight

select a year from the timeline below, to view events:

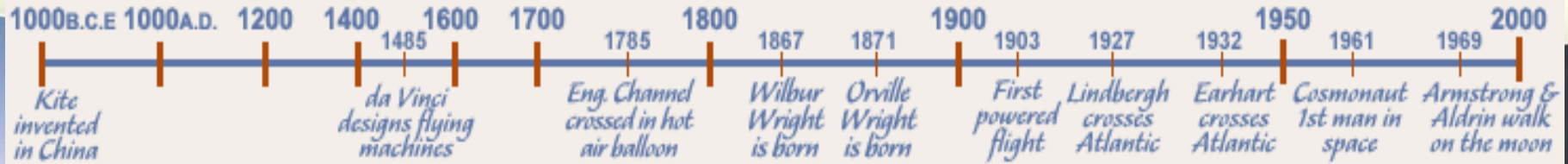


- **1891**, Samuel Langley, physicist and astronomer
- Power needed to help man fly
- Using Whirling arms and steam motors
- Aerodrome
- **1894**, Octave Chanute, engineer inspired by Otto Lilienthal
- The Herring-Chanute biplane
- Biplane is two pairs of wings

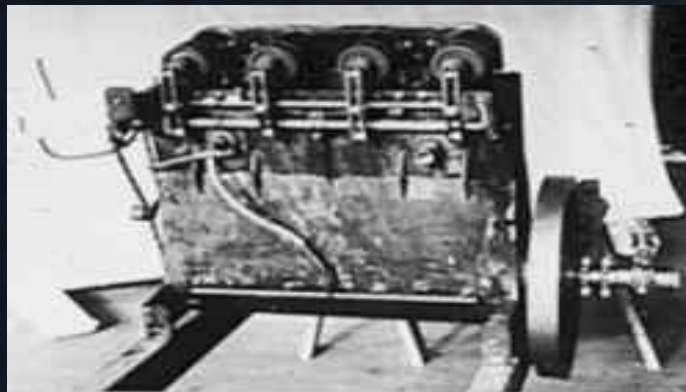


Timeline of Flight

select a year from the timeline below, to view events:

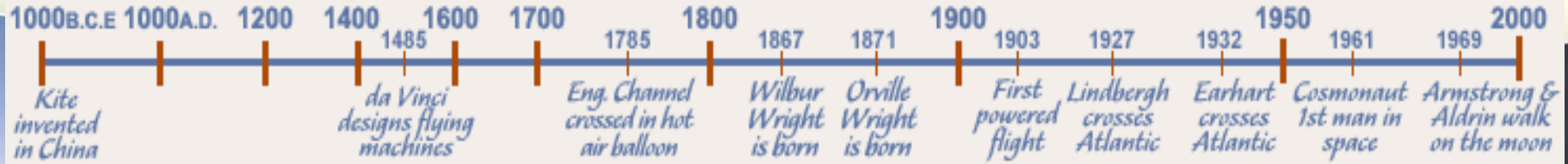


- **1903**, The Wright Brothers, Orville and Wilbur Wright started with Balloon and Kites
- Learned how the wind would help
- Test with the shape of gliders (Cayley)
- Then they create the propulsion system that created the lift



Timeline of Flight

select a year from the timeline below, to view events:



- **1903**, the first flight lasted 12 seconds, 123 feet
- The longest one was piloted by Wilbur, 59 seconds, 892 feet
- First commercial flight
- **1904**, the first manned flight last more than 5 mins

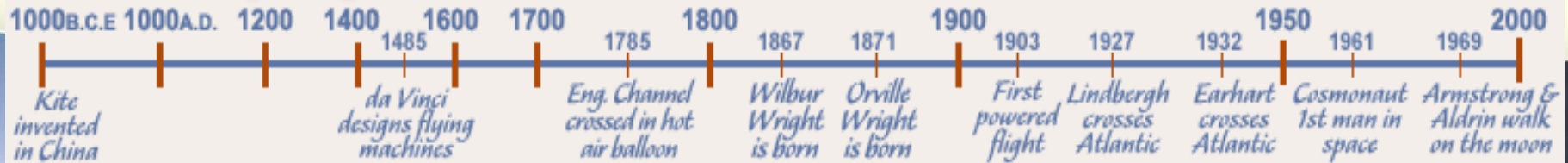
By Wilbur
Wright



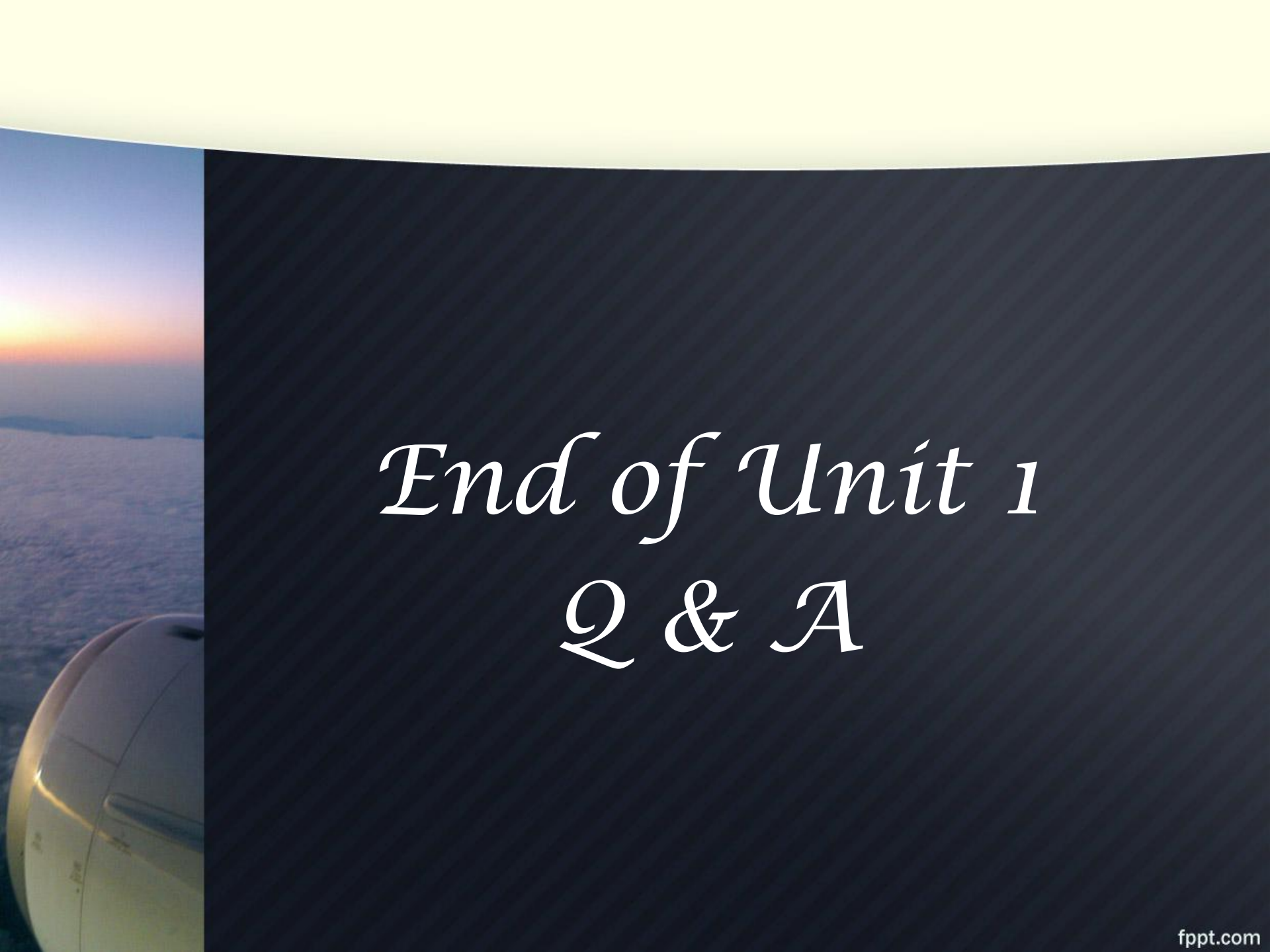
- **1911**, Vin Fiz, the first airplane cross the United States, took 84 days, stopping 70 times

Timeline of Flight

select a year from the timeline below, to view events:



- First Armed Airplane
- Patent Suit, US Court decided between Wright and Glenn Curtiss (Ailerons) that it is different thing
- **1927** – Charles A. Lindbergh completes first nonstop trans-Atlantic flight
- **1930** – Frank Whittle, British inventor, invents the Jet engine.
- **1932** – Amelia Earhart is the first woman to fly a nonstop trans-Atlantic flight.
- **1933** – A modern airliner, Boeing 247 flies for the first time.
- **1969** – U.S. astronauts Neil A. Armstrong and Edwin E. Aldrin, Jr., are the first to walk on the moon.



End of Unit 1
Q & A

Individual Assignment #1

- Latest Airline News
(10 points = English usage 4, Presentation skill + creativity 3, Timing 3)
- Present the update related news about aviation (not more than 6 months backward), and report as a news reporter with 3 vocabularies related to airlines, no duplicate news by **video clip 1 minute**. Submitting on the website platform by 30 SEP 2025
- You must refer the news source: for example from, ***source: www.ubcnews.com on 21 AUG 2025***

Individual Assignment #2

- Watch the On Demand Video and summarize (10 points = English usage 5, Writing skill 5)
- Watch the video QR on TQF3 and summarizing each video on your own understanding at least 200 words for each video, on the A4, one page per video, with Times New Roman font 14pts, total 5 pages. Submitting on the website platform by 30 SEP 2025

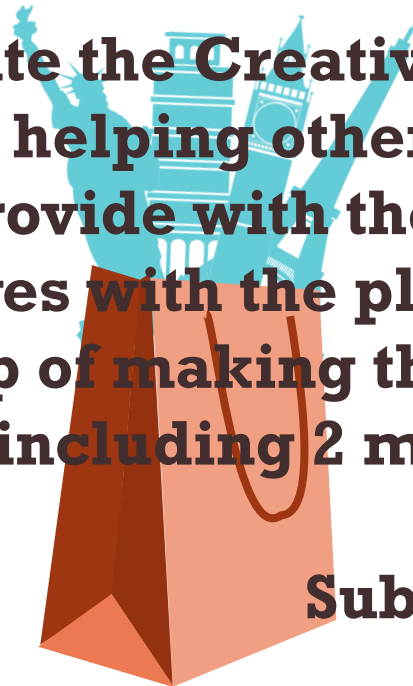
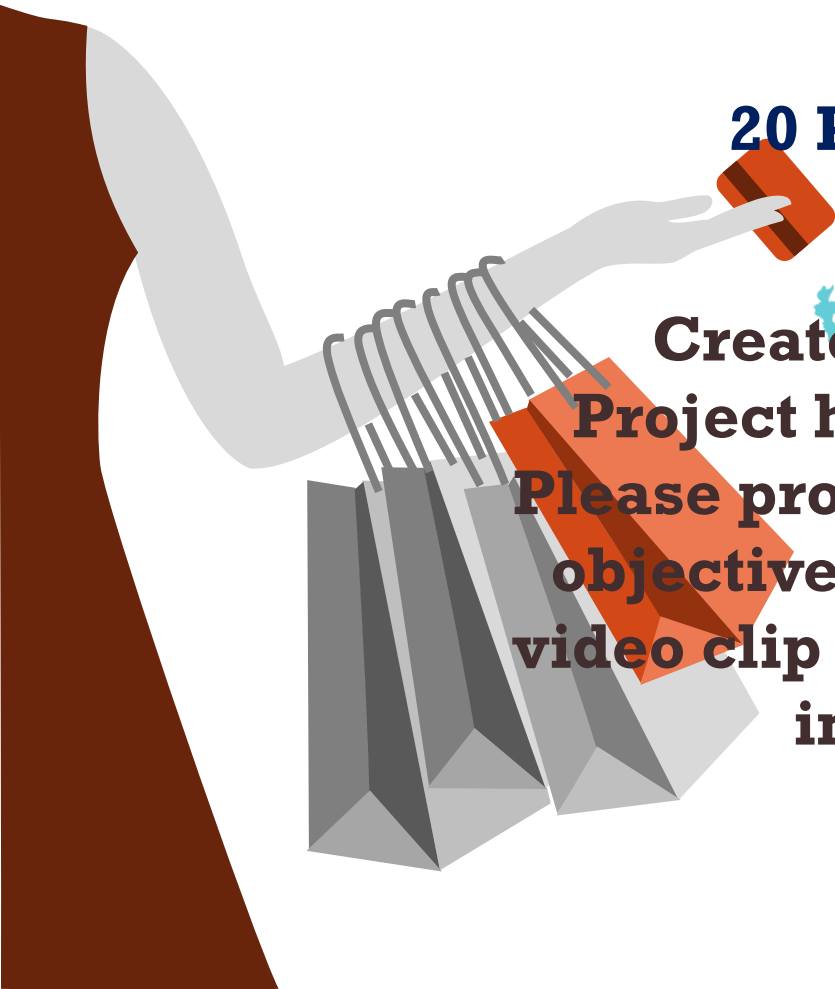
Group Assignment #3 (20)

**Airlines Cares Presentation
20 Points – English 10/Creativity 10**

Create the Creativity Your own Airline Project helping other people and society Please provide with the Airlines name and objectives with the plan of Airlines Cares video clip of making the Project 3 minutes including 2 minutes of Backstage

Submission by 30SEP25

**Title: All Student ID-Name in order
Ex: 6812344xxxx-Theppaluk**



References

- http://www.bl.uk/learning/resources/timeline/images/history_carousel4.jpg
- <http://www.fiddlersgreen.net/aircraft/Balloon-Blanchard/IMAGES/blanchard-balloon-illustration.jpg>
- http://www.wright-brothers.org/History_Wing/History_of_the_Airplane/Doers_and_Dreamers/Doers_and_Dreamers_images/Herring/Herring_Lilienthal_glider_1894.jpg
- <http://flyingmachines.ru/Images7/Flight/1913/705-1.jpg>
- http://www.wright-brothers.org/Information_Desk/Just_the_Facts/Airplanes/Wright_Airplane_images/Model%20EX/Model_EX_Vin_Fiz.jpg
- Powerpoint slide show from Fftp.com



Day Break
60 minutes



Unit 2

Evolution of Airline Industry

**LET'S PRACTICE
ENGLISH CONVERSATION**





WORLD MAP



EVOLUTION OF COMMERCIAL AIRLINES

- Early beginnings Pre-World War I
- **1900's** first flight began taken by Orville Wright
- **1910's** beginnings freight and cargo service
- **1914** WW I began in Europe, Focused on military requirements



IMPACT OF WORLD WAR I

- **1919** first non-stop transatlantic flight
- **IATA – International Air Traffic Association**, was founded to establish the first set of common technical standards for the industry
- Original IATA ceased during World War II
- **1945** recreated IATA as the **International Air Transport Association**



1920'S

- **Scheduled commercial air services were introduced in Africa, Australia, Japan, Mexico and South American countries.**
- **There was expansion of air routes across Europe.**
- **Mostly they are private owned**
- **Great Britain was the first major country to establish a government-owned airline, Imperial Airways, in 1924**



1930'S

- **With the growing amount of air traffic, it was becoming more important for international airlines to cooperate. The IATA (1919) was able to provide the framework for this collaboration.**
- **European governments continued to form large national airlines such as Air France**
- **As in 1938 world's airlines carried almost 3.5 million people**



- **Technical standard, and commercial air transport regulations were developed and implemented.**
- **This included the standardization of flight decks, prevention of fire on board aircraft and prevention of ice deposits.**



IMPACT OF WORLD WAR II

- World War II began 1939, aviation in western Europe fully stop
- During 1940s ,unaffected by the war, aviation in Central and South America continued to grow especially in Brazil, Argentina, Mexico and Colombia.
- Development of Radar



1940'S – 1960'S

- **1944**, Chicago Convention was signed by 52 states to establish rules of airspace, airplane registration and safety, and details the rights of the signatories in relation to air travel. It also established ICAO.
- **April 1945**, IATA was formed in Havana, Cuba, with 57 members 31 nations
- **1949** Complete 'Annexes' in Chicago Convention , governs the conduct of inter- national civil aviation.



THE JET AGE

- The airplane became as a popular means of transportation.
- **1950's** jet aircraft developed to carry up to 200 pax
- Tourist class was introduced in North Atlantic affecting both fares and seating arrangements



- **Tourist class fare are 20-25 % lower than the standard First Class fares**
- **Following the successful launch of tourist class fares, many airlines then launched of another new class of service , economy which is 20% lower than tourist class**



GROWTH AND SET BACK 1960'S

- **The passenger airline industry experienced further global growth.**
- **Scheduled cargo made impressive gains.**
- **Tourists, mainly from North America and Europe, travelled to Africa,**
- **The Pacific and Asia as jet aircraft improved speed, safety and comfort of air travel.**



1970'S

- **The world's scheduled airlines experienced a slower due to heavy capital investments, fuel costs and global inflation.**
- **Hijacking throughout the world because political unrest in certain parts of the world resulting in stricter policies at airports.**
- **Most major airlines now had replaced propeller-driven planes with jet transport**



1970'S

- Pan Am, first to offer B747 carry more than 400 pax



1970'S

- **1976**, France and Great Britain began passenger service with supersonic transport, Concorde



1980'S – 1990'S

- Slowly for airline industry at the beginning but ended with revenue growth.
- Early 1980's international deregulation started 'open skies agreement'
- 1987 – 1989 more than one billion pax travelling. That result in issues of congestion in the air and on the ground.
- Trend of Airline privatization and foreign ownership continued into the 1990's.



RECENT CHALLENGES : 2000 AND BEYOND

Airline industry has faced several serious challenges;

- Airlines become targets of terrorism related to international political tensions
- SARS – Severe Acute Respiratory Syndrome in 2003
- Avian Flu (Bird Flue)
- Reducing travel
- SARs-CoV-2 in 2019



But the experts predict growth of airlines in next decades because of

- **Economic growth**
- **Increasing disposable income**
- **Continued deregulation**
- **Development of low-cost airlines**
- **Tourism economic recovering**





Break 10 minutes

REGULATORY

Why do we need standardization?

- To introduce the level of consistency across borders of air operations
- To ensure safe and secure practice
- To avoid chaos



CHICAGO CONVENTION

- Chicago Convention in International Civil Aviation
- **November 1, 1944** with 54 nations at Chicago
- Establish legal structure of framework for civil air services



KEY ANNEXES

- **Annex 1 Licensing : Flight crews, ATC, Maintenance**
- **Annex 2 Rules of the air : rules about conduct of visual and instrument flight**
- **Annex 6 Operation of aircraft : similar operations throughout the world**
- **Annex 8 Airworthiness of aircraft : requirements for certificates and inspection of aircraft**



ICAO



INTERNATIONAL CIVIL AVIATION ORGANIZATION
A United Nations Specialized Agency

- Created in 1944, by signing Chicago Convention with 191 members
- UN specialized
- HQ at Montreal, Canada
- To develop international Standards and Recommended Practices (SARPs)



STANDARDS AND RECOMMENDED PRACTICES (SARPS)

- Cover all technical and operation ; such as safety, personnel licensing, operation of the aircraft, aerodromes, air traffic service, accident investigation, and the environment
- Standard specific with physical characteristic
- A recommended practice with physical characteristic



IATA



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



THE ROLE OF GOVERNMENTS

Is to work toward standardization of aviation laws around the world.

There are guidelines that must be followed when flying into a foreign country in the following areas:

- Air Traffic Control
- Ground Services
- Sanitation
- Environmental requirements
- The rights of passengers ;Theft, loss, accidents

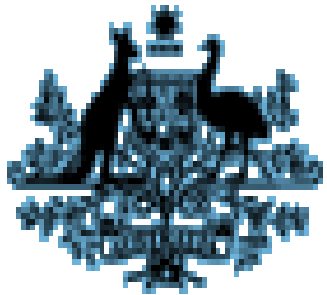


THE ROLE OF GOVERNMENTS

- **Department of Transportation of each country**
- **FAA – Federal Aviation Administration**
- **EASA – European Aviation Safety Agency**
- **Some regions have commission and councils, AFCAC, ACAC**
- **Regional airlines organizations AACO – The Arab Air Carriers Organization**



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



- 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'



Q & A



REFERENCES

- <https://worldvolcanoes.wikispaces.com/file/view/RSeWorld.gif/109248717/RSeWorld.gif>
- <http://www.panam.com/media/wysiwyg/legacy-header.png>
- <http://static.panoramio.com/photos/large/2752719.jpg>
- <http://hdwallpaperslist.com/wp-content/uploads/2013/05/Concorde-HD-Wallpapers-1-1.jpg>
- <http://doctorbulldog.files.wordpress.com/2008/05/bird-flu.jpg>
- <http://www.icao.int/Pages/default.aspx>
- <http://join.nexioncanada.com/im/IATA-logo.png>

