

# **PRESENTATION ON AIRCRAFT ORIENTATION**



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# AIRCRAFT

- ✘ An aircraft is a vehicle that is able to fly by gaining support from the air. It counters the force of gravity by using either static lift or by gaining the dynamic lift of an airfoil.
- ✘ Common examples of aircraft include airplanes, helicopters, airships, gliders, paramotors and hot air balloons.



# EVOLUTION OF AIRCRAFT

- ✘ The history of aviation extends for more than two thousands years , from the earliest form of aviation such as kites and attempts at tower jumping to supersonic and hypersonic flight by powered, heavier – than – air aircrafts .
- ✘ French reconnaissance balloon L'Intrepide of 1796, the oldest existing flying device, in the Heeresgeschichtliches Museum, vienna.



**RECONNAISSANCE BALLOON**

# BEFORE POWERED FLIGHT

- ✘ The earliest possible in-depth experiments start in the 9<sup>th</sup> century with the **Andalusian inventor Abbas ibn Firnas** designing a **simple glider** .
- ✘ some more in-depth experimentation took place in the 16<sup>th</sup> century . **Leonarda da Vinci** researched the flights of birds and designed **several flying machine** based on this .

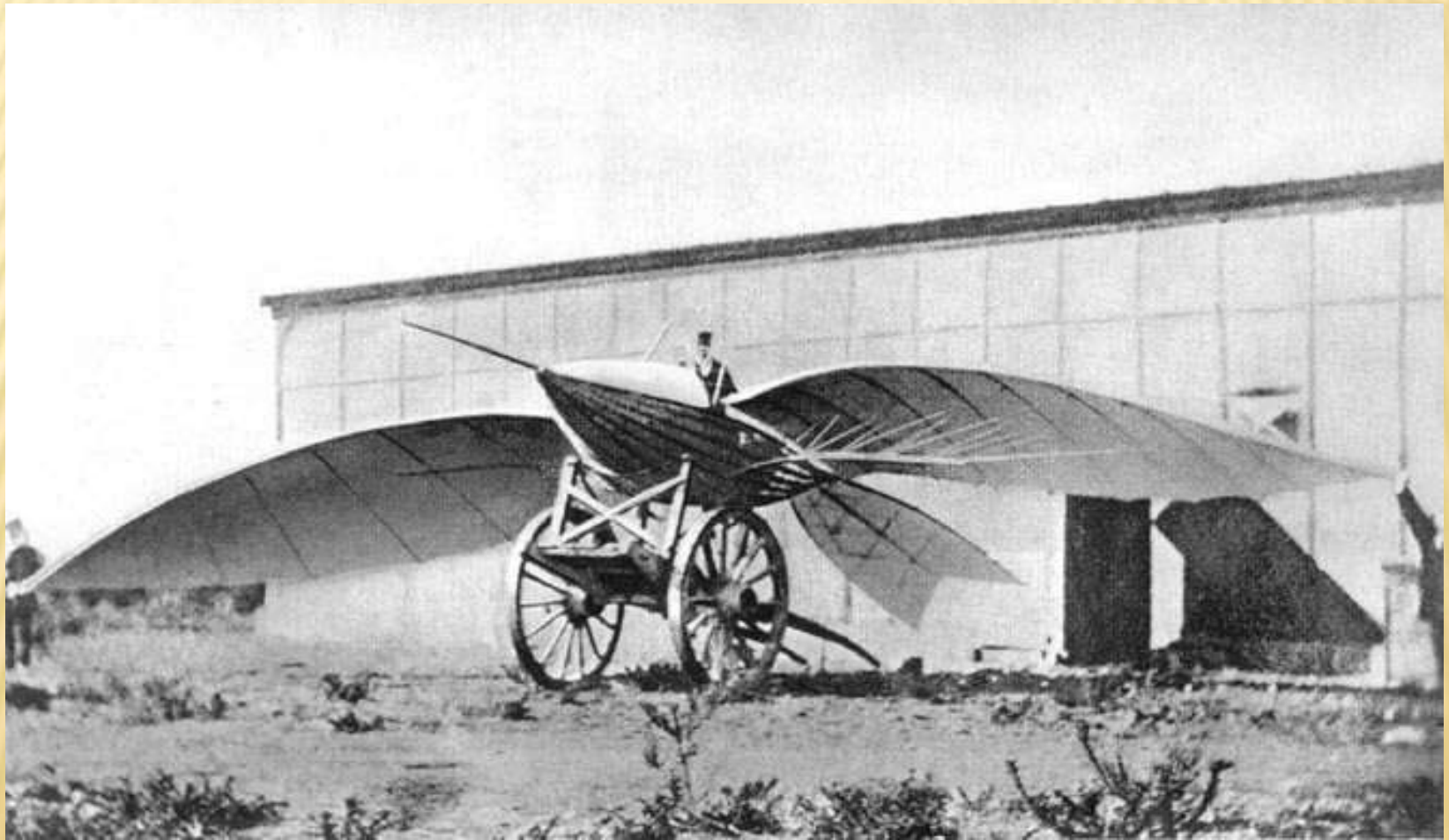
# POWERED PROPELLER AIRCRAFT

- ✦ The English engineer **George Cayley** is one of the **most important figures** in the early development of the airplane. He was the first to investigate and document the forces of flight ( weight, lift, drag, and thrust ) and develop the concept of the airplane as a fixed –wing machine with systems for lift, propulsion, and control.

# A REPLICA OF A GLIDER DESIGNED BY GEORGE CAYLEY.

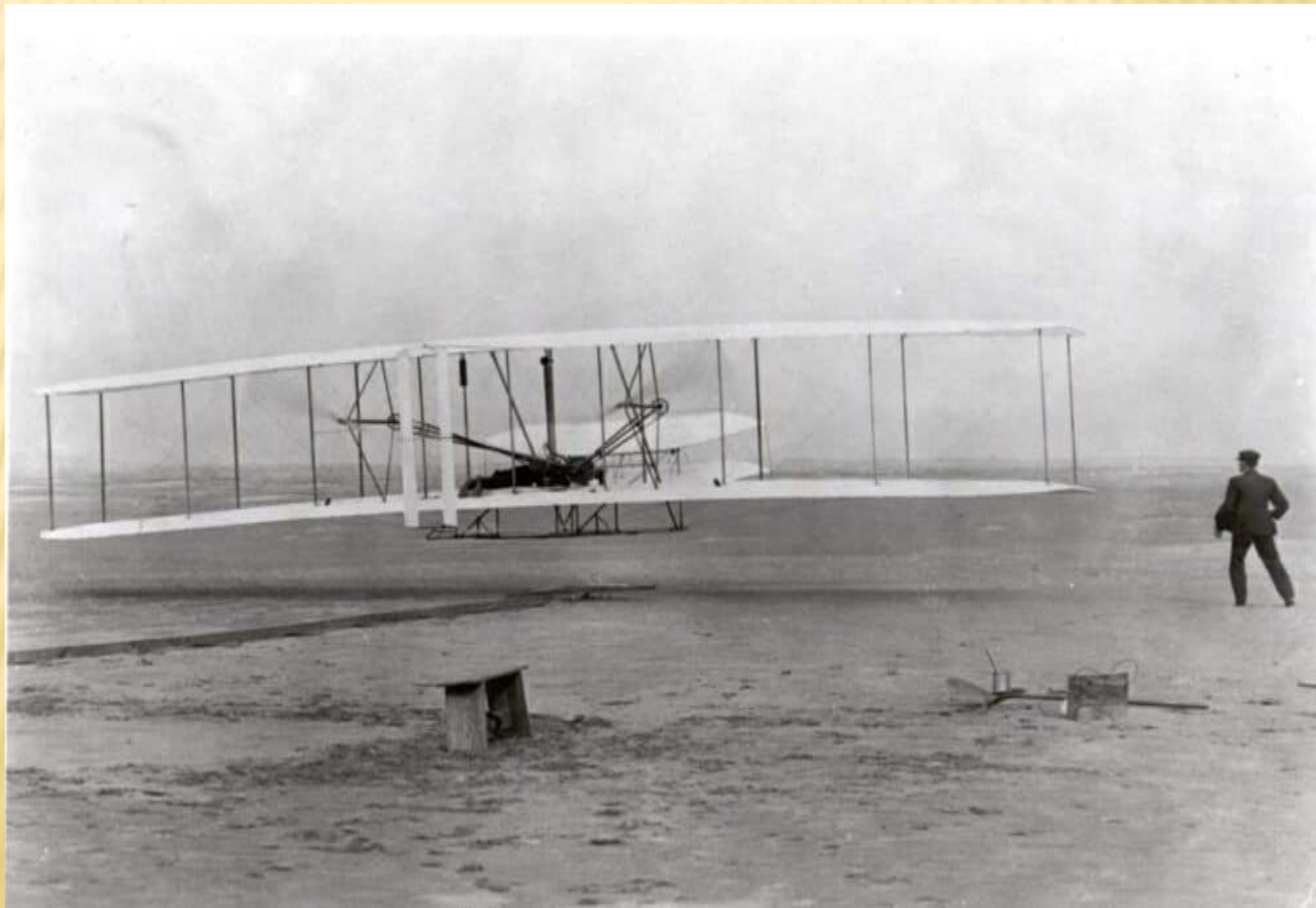


# JEAN-MARIE LE BRIS ACHIEVED FLIGHT WITH A GLIDER PULLED BY HORSE.





# THE WRIGHT BROTHERS FIRST FLIGHT IN 1903



**BY 1908, THE WRIGHT BROTHERS THIRD AIRCRAFT COULD FLY TWO PEOPLE.**



# MILITARY AIRCRAFT FROM 1914

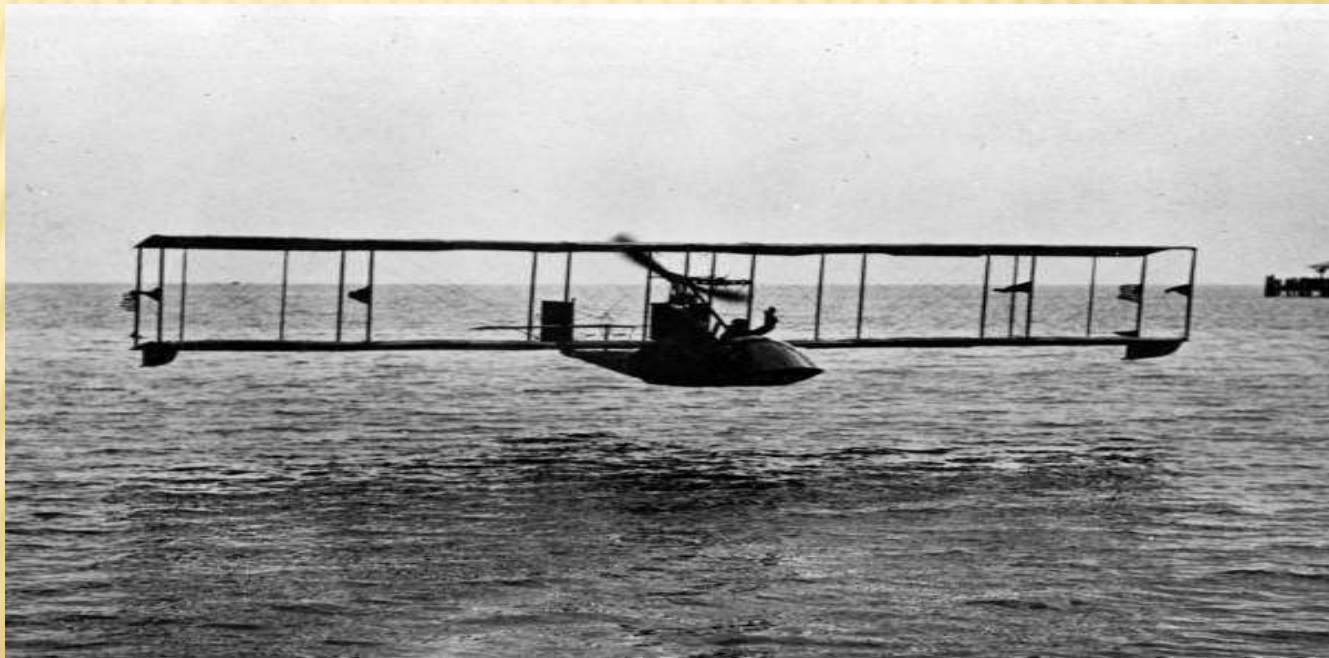
- ✘ The outbreak of World War I in 1914 led to many companies and governments expediting aircraft design for military purpose. **Italy** was one of the first countries to operate military reconnaissance aircraft .

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# DEVELOPING COMMERCIAL POSSIBILITIES

- ✘ The **first passenger service started in 1914**. This 20 minute flight was a significant milestone , forming the start of commercial aviation .



**THE FIRST TRANSATLANTIC FLIGHT TOOK PLACE IN 1919, WITH BRITISH AVIATORS JOHN ALCOCK AND ARTHUR WHITTEN-BROWN FLYING A MODIFIED VICKERS MILITARY AIRCRAFT.**



# THE START OF THE JET AGE-1952

- ✘ The first passenger jet aircraft though, was the de Havilland Comet , entering service in 1952.



# THE BOEING 707



# AVIATION AS AN INDUSTRY

- ✘ Market size
- ✘ Investment
- ✘ Government initiative
- ✘ Achievements





# AVIATION AS INDUSTRY

- ✘ The aviation industry is the business sector dedicated to manufacturing and operating all types of aircraft . Air traffic controllers, when they are awake, are concerned with aviation safety .
- ✘ Aviation provides the only rapid world wide network, which makes it essential for global business.

# FUTURE OF AVIATION

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- ✘ Artificial Intelligence
- ✘ Big data
- ✘ Automation
- ✘ Workforce and skills
- ✘ Biometrics
- ✘ In flight connectivity

# OPPORTUNITIES IN AVIATION-HUMAN FACTORS

- ✘ Aircraft manufacturing
- ✘ Aircraft and system maintenance
- ✘ Airline and Airport Operations .
- ✘ Pilot careers .

✕ THANK YOU

