



Amirkabir
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Unmanned Aerial Vehicles




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Tips to be Covered

- ✈ Introduction & Brief History of UAVs
- ✈ Classification of UAVs
- ✈ UAV components
- ✈ Applications of UAVs
- ✈ Benefits & Disadvantages of UAVs
- ✈ Regulations
- ✈ Developments
- ✈ The future of UAVs

introduction

-  They commonly known as a **drone**
-  Operating with various degrees of autonomy
-  They originated mostly in military applications









Brief History of UAVs

- ✈ UAV innovations started in the early 1900s
- ✈ “Aerial Target” was one of the first UAV
- ✈ UAV’s development for risky military operations
- ✈ Their usages is expands in other things
- ✈ In 2013 at least 50 countries used UAVs




Classification of UAVs

-  Target and decoy
-  Reconnaissance
-  Combat
-  Logistics
-  Research and development
-  Civil and Commercial UAVs

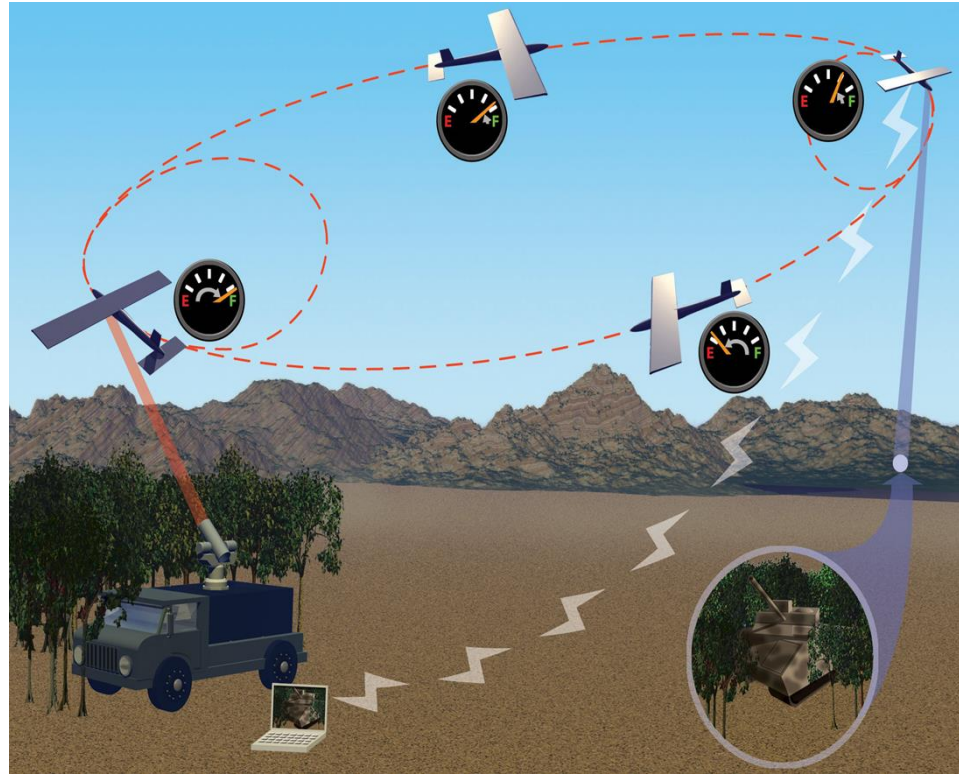


UAV components








-  Body
-  Power supply and platform
-  Computing
-  Sensors
-  Software
-  Flight controls
-  Communications



Sub-System of UAVs



Applications of UAVs

-  Search and rescue
-  Disaster relief
-  Commercial and motion picture filmmaking
-  Mapping
-  Inspection
-  Commercial aerial surveillance & Sports
-  Armed attacks





Applications of UAVs

Search and rescue





Applications of UAVs

Mapping





Applications of UAVs

Inspection





Applications of UAVs

Science



Applications of UAVs

Disaster relief





Applications of UAVs

Commercial and motion picture filmmaking & security





Applications of UAVs

Sports





Applications of UAVs

Armed attacks



Benefits of UAVs

- ✈ Safety
- ✈ Entering to environments that are dangerous to human life
- ✈ Stay in the air in complete darkness or in fog
- ✈ Be programmed to complete the mission autonomously



Disadvantages of UAVs

- ✈ Limited Abilities
- ✈ UAV system can get hacked
- ✈ Cannot refuel during flights



Regulations

✈️ Some Regulations in: Ireland, Canada, USA, ...

I UNITED STATES OF AMERICA XI
DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

IV NAME
JOHN Q PUBLIC XX

V ADDRESS XX
XXX
XXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXX

VI NATIONALITY USA **SEX** HEIGHT **WEIGHT** **HAIR** **EYES**
IVa D.O.B. 18 AUG 1977 M 75 230 BROWN BROWN

IX HAS BEEN FOUND TO BE PROPERLY QUALIFIED TO EXERCISE THE PRIVILEGES OF
II FLIGHT ENGINEER

III CERTIFICATE NUMBER XXXXXXXXXXXXX

X DATE OF ISSUE 16 MAY 2002

XIV *Maria C. Baker*
VIII ADMINISTRATOR

CARD 1 of 2



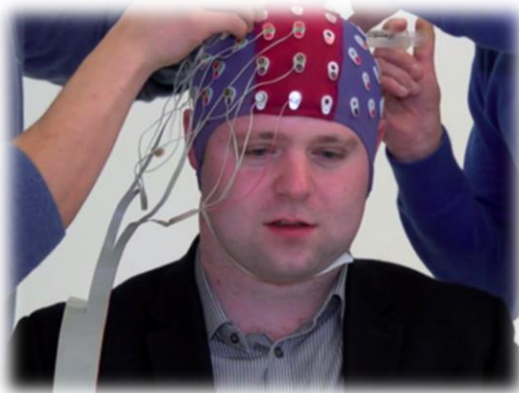
Ways to take down offending drones

- ✈️ Training eagles to attack offending drones
- ✈️ Anti-drone guns



Developments

- ✈️ Animal imitation – Ethology
- ✈️ Control from wearable devices



Conclusion

- ✈ The future of UAVs
 - ✈ Cargo and supplies transportation
 - ✈ Interplanetary exploration
 - ✈ Personal carrier
 - ✈ Civilian transportation
- ✈ Summary



No	Word	Meaning
1	Autonomy	The ability or opportunity to make your own decisions without being controlled by anyone else.
2	Operation	The way the parts of a machine or system work together, or the process of making a machine or system work.
3	Power supply	A device that provides power to electric machines, generators, etc.
4	Application	The practical purpose for which a machine, idea etc can be used, or a situation when this is used.
5	Flight controls	The activity of directing the movement of aircraft.
6	Communications	Means of sending or receiving information, such as telephone lines or computers.
7	Inspection	A careful examination of something to find out more about it or to check for anything wrong.
8	Facilitate	Cut off, Cut, Disconnect, Interrupt
9	Data	The quantities, characters, or symbols on which operations are performed by a computer, which may be stored and transmitted in the form of electrical signals and recorded on magnetic, optical, or mechanical recording media.
10	Turbine	A machine for producing continuous power in which a wheel or rotor, typically fitted with vanes, is made to revolve by a fast-moving flow of water, steam, gas, air, or other fluid.
11	Power lines	A cable carrying electrical power, especially one supported by pylons or poles.
12	Sensor	A device which detects or measures a physical property and records, indicates, or otherwise responds to it.
13	Microcontrollers	A control device which incorporates a microprocessor.
14	Simulate	Produce a computer model of.
15	Onboard computers	The computer which provides processing capability.

Question?





Thank You!