Chapter 10

Unmanned Aerial Vehicles

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2018

1. Introduction

- The growing importance of unmanned air vehicles, UAVs, for carrying out an increasing number of military roles has become very clear over the last decade. They also have civil applications, particularly in surveillance and monitoring tasks, although safety and legislative issues need to be resolved.
- UAVs depend totally on avionic systems in order to function and carry out their mission.
- It should be noted that a number of alternative names have been used for unmanned air vehicles such as,
- Unmanned Aircraft, UMAs,
- Unmanned Air Vehicles, UAVs,
- Remote Piloted Vehicles, RPVs,
- Uninhabited Combat Air Vehicles, UCAVs.

1. Introduction

- They are now widely used in a range of surveillance tasks from battlefield surveillance and target acquisition at fairly low altitudes of around 3,000 to 15,000 ft. or more above the terrain, to long range surveillance/reconnaissance missions carried out at very high altitude.
- Among the advantages of removing the pilot is that combat 'g' can be increased by a factor of two or more over the 9g limit imposed by a pilot, so that a UCAV is more maneuverable and the survivability increased.
- The air vehicle can be made smaller and more 'stealthy'.

1. Introduction

- Small portable surveillance UAVs, comparable in size and weight to radio controlled model aircraft, can be operated within the same restrictions as model aircraft, namely the operator must be in visual line of sight contact with the air vehicle at all times.
- Small UAVs are increasingly being used by police and traffic control authorities for traffic surveillance tasks.

2. Examples

- '*Watchkeeper*' Battlefield Surveillance System.
- MQ-9 '*Reaper*' UCAV System.
- '*Taranis*' UCAV Demonstrator.
- '*Draganflyer*' X-6 Portable Surveillance Helicopter UAV.