CHAPTER 1.

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# Flight simulators sphare of usage and evaluation systems development technics

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# Flight simulators sphare of usage and evaluation systems development technics

## Flight simulators.

### Basic description of flight simulators.

A flight simulator is a device that artificially re-creates aircraft flight and the environment in which it flies, for pilot training, design, or other purposes. It includes replicating the equations that govern how aircraft fly, how they react to applications of flight controls, the effects of other aircraft systems, and how the aircraft reacts to external factors such as air density, turbulence, wind shear, cloud, precipitation, etc. Flight simulation is used for a variety of reasons, including flight training (mainly of pilots), the design and development of the aircraft itself, and research into aircraft characteristics and control handling qualities.[1]

Flight simulators are commonly used to maintain level of pilot training. Several different devices are utilized in modern flight training. Cockpit Procedures Trainer (CPT) are used to practice basic cockpit procedures, such as processing emergency checklists, and for cockpit familiarization. Certain aircraft systems may or may not be simulated. The aerodynamic model is usually extremely generic if present at all.[1,5]

The one of main goals of training on flight simulator is to increase highly automated skills and quality execution but non-standard solutions, which are characterized by flight activity during non-standard situations during flights, the load on intellectual pilot function while performing assigned tasks kinds of aircraft. Moreover, possibility to maintain basic skills is priority for aircraft staff. This increase reliability of safe flight and lower chances of emergency situations.