Automatic control of aircraft and missiles

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What is the automatic flight control system of aircraft? Automatic Flight Control Systems (AFCS) can be thought of as autopilots on steroids – they often incorporate automatic aircraft pitch trim and in some cases rudder yaw dampening. With all these elements combined, AFCS often have a higher performance level than basic autopilots.

What is the secondary control of aircraft? Wing flaps, leading edge devices, spoilers, and trim systems constitute the secondary control system and improve the performance characteristics of the airplane or relieve the pilot of excessive control forces.

What is the control mechanism of a missile? A missile GUIDANCE system keeps the missile on the proper flight path from launcher to target, in accordance with signals received from control points, from the target, or from other sources of information. The missile CONTROL system keeps the missile in the proper flight attitude.

What are the different types of aircraft missiles? There are five types, air-to-air, air-to-surface, surface-to-air, antiship, and antitank, or assault. Ballistic missiles are most often categorized as short-range, medium-range, intermediate-range, and intercontinental ballistic missiles (SRBMs, MRBMs, IRBMs, and ICBMs).

What are the 3 automatic control systems? Automatic Control Systems can be categorized into open-loop control, feedback control, and compound control based on the control method employed.

How does the ATC system work? Once your plane reaches the designated takeoff runway, the ground controller passes the strip to the local controller. The local

controller in the tower watches the skies above the airfield and uses surface radar to track aircraft. He or she is responsible for maintaining safe distances between planes as they take off.

What is the difference between primary and secondary flight controls? Primary flight controls are those that control roll, pitch and yaw. That would be ailerons, elevator, and rudder. Secondary controls just adjust certain aspects of those. Examples are trim tabs on all 3 axes mentioned above.

What are the control systems of aircraft? Flight control systems are subdivided into what are referred to as primary and secondary flight controls. Primary flight controls are required to safely control an aircraft during flight and consist of ailerons, elevators (or, in some installations, stabilator) and rudder.

What is an example of a secondary control? An example of a primary control item is: "I think my success depends on what I do and how hard I work." An example of a secondary control item is: "I agree with those who think one should associate with strong and successful people." These items concern examples of vicarious or illusory control; Seginer et al.

What is the missile flight control system? The basic objective of the flight control system is to force the achieved missile dynamics to track the guidance commands in a well-controlled manner. The figures of merit (FOMs) used to assess how well the flight control system works are discussed in Flight Control System Design Objectives.

How does a missile work on a plane? AIM-9L Captive Air Training Missile (CATM) with rocket motor and inert warhead for training. Guided missiles operate by detecting their target (usually by either radar or infrared methods, although rarely others such as laser guidance or optical tracking), and then "homing" in on the target on a collision course.

How do planes avoid missiles? Flares are decoys that aim to confuse heat-seeking missiles by creating an alternative target. Once released from the aircraft, the metal they contain (usually magnesium) burns at a very high temperature and can divert missiles away from the aircraft – especially when combined with avoidance maneuvers.

What is the working principle of a missile? The missile's fuel, or propellant, is burned in an engine, creating hot exhaust gases, which are funneled through a nozzle at the rear of the missile. This action generates thrust at the missile's base forcing it upwards/the opposite reaction. To achieve liftoff, the thrust must be greater than the missile's weight.

What's the difference between missiles and rockets? One is guided, one is not. A missile has a guidance system — after it is launched, its trajectory and impact point can be changed mid-flight. A rocket, on the other hand, is directed based upon how much propellant is available and the elevation of the rocket launcher.

What is the most advanced missile system? AMRAAM® – Advanced Medium Range Air-to-Air Missile – is the world's most sophisticated, combat-proven air dominance weapon.

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What is the principle of auto flight system? Autopilot uses software to combine sensing elements, command elements and output elements. These monitor the aircraft and apply automated control for flight. Software installed on an integrated computer designed to oversee and stabilise the altitude, speed, pitch and heading for the aircraft.

What is the AFCS system in aircraft? A conventional fixed-wing aircraft flight control system (AFCS) consists of flight control surfaces, the respective cockpit controls, connecting linkages, and the necessary operating mechanisms to control an aircraft's direction in flight.

What is autopilot system in aircraft? An autopilot is a device used to guide an aircraft without direct assistance from the pilot. Early autopilots were only able to maintain a constant heading and altitude, but modern autopilots are capable of controlling every part of the flight envelope from just after take-off to landing.

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