

System for Controlling a Hijacked Aircraft
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In the event of an actual or potential aircraft hijacking, control of the aircraft (referred to as the "hijacked aircraft") is first shifted to the autopilot. The autopilot is programmed to fly the hijacked aircraft to a selected, highly secure airfield. Once in the vicinity of this airfield, control of the hijacked aircraft is shifted from the autopilot to a human pilot aboard a chase aircraft (referred to as the "remote pilot"). The hijacked aircraft transmits all the information needed by the remote pilot for execution of a landing. Systems on the hijacked aircraft controlled by the remote pilot include the throttles, flaps, ailerons, rudder and landing gear. To prevent hacking, the remote pilot communicates by encrypted, highly directional means with the hijacked aircraft. The remote pilot transmitter is high output, the hijacked aircraft receiver is low sensitivity.

Once the protective system is activated, it is not possible to return control to the pilot of the hijacked aircraft. The autopilot may be rendered secure by placing it in a location not accessible during the flight, by tamper-detecting seals, and/or by a wire-once command format.

Methods for initiating the shifting of control of the hijacked aircraft to the protective system include:

- the on-board pilot or crew member pressing one or more buttons, inputting alphanumeric code, or speaking one or more code words; Combinations are possible in which more than one person and/or more than one action-possibly with specific timing requirements-would be necessary to trigger shifting control to the protective system;
- failure of the pilot and/or crew member(s) to properly perform any of the types of action listed above, at a pre-scheduled time;
- indication by a Global Positioning System that the aircraft has deviated into the vicinity of a no-fly zone, or has deviated significantly from the originally intended course;
- off-aircraft evidence that a hijacking is/may be in progress, because of certain transmitted audio or video cues in the aircraft or cockpit, or because of information originating outside the hijacked aircraft. Options for transmitting an encrypted command to initiate the protective system include:
 - transmission from an interceptor aircraft, using signal selectivity as described above, for the landing phase;
 - Transmission from a ground-based station, via one or more relay stations which may be ground, air, sea or satellite based. A satellite system is described which makes hacking by a ground-based system more difficult.

Other variations of this system include:

- a system in which control may be returned to the on-board pilot, if certain conditions are met (e.g. the return-control signal originates from a chase plane in close proximity);
- a system in which a pilot aboard an intercepting aircraft takes control before the hijacked aircraft reaches the secure airfield;

- a system in which a remote pilot takes control of the hijacked aircraft immediately, and in which autopilot control occurs only in the event of communications failure between the remote pilot and hijacked aircraft;
- a system in which remote-initiated protective system activation is not possible.