

Freeze-Flight-Fight-Forfeit

The ordered sequence of responses to acute stress in humans.¹

When people are exposed to stressful or threatening situations, they respond in a manner summarized by the catchy phrase, “fight or flight.” Less catchy but more accurate is the contemporary construction, “freeze-flight-fight-forfeit,” which not only describes the full set of responses, but also reflects the general sequence in which they occur. The response set typically begins at stage one, and escalates to subsequent stages as the level of threat increases:

If a threat is believed to be imminent, *Freeze*—a response characterized by a state of hyperawareness and hypervigilance; purpose is to detect potential threats (“stop, look, and listen” response).

If a threat is detected, take *Flight*—a response characterized by a state of fear and panic; purpose is to escape from the threat (“run away” response).

If unable to escape the threat, *Fight*—a response characterized by a state of desperation and aggression; purpose is to neutralize the threat (“fight for your life” response).

If unable to neutralize the threat, *Forfeit*—a response characterized by a state of tonic immobility and paralysis; purpose is to surrender to the perceived threat (“playing dead” response).

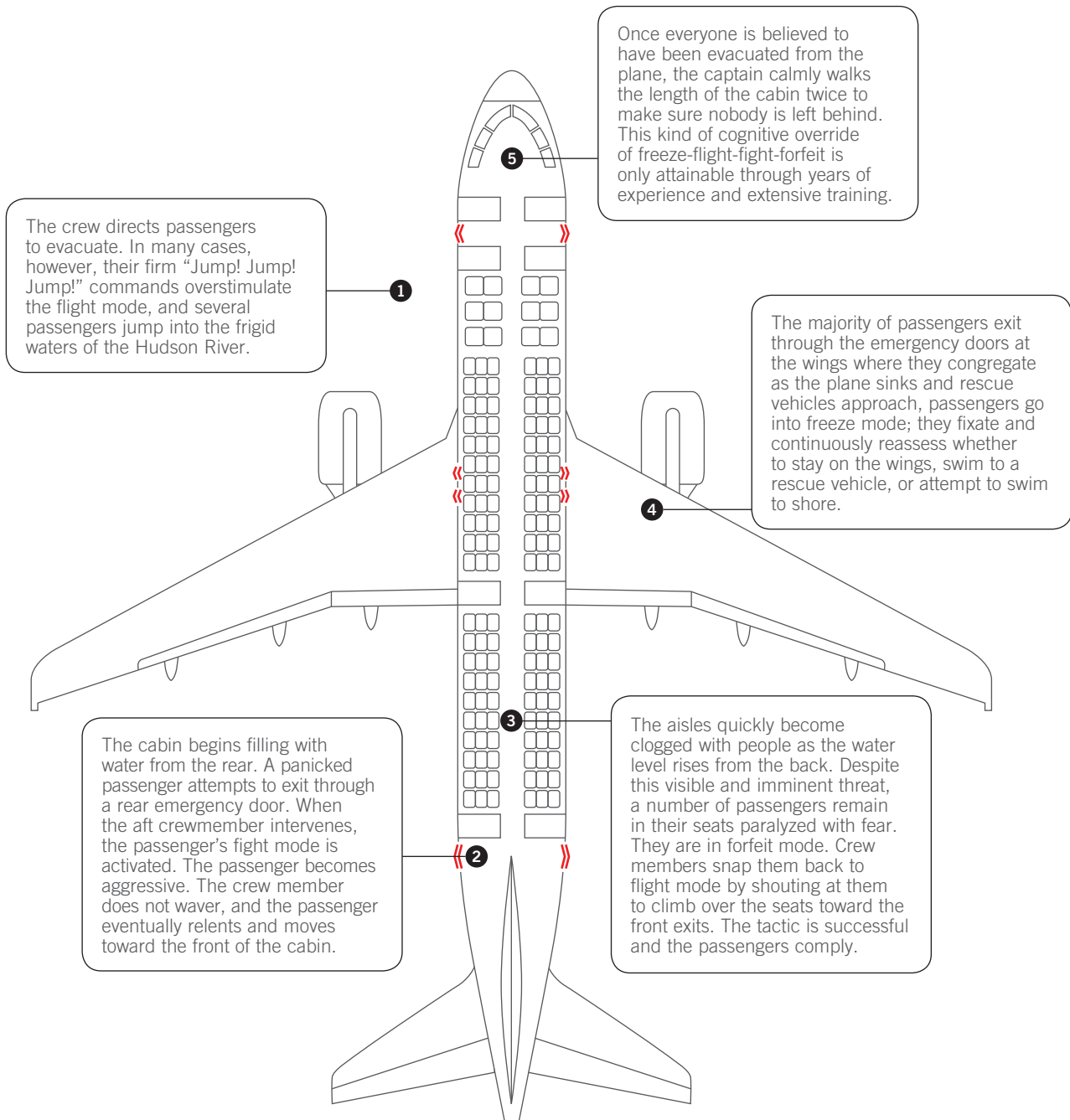
These stages are innate responses that operate in all humans (and mammals generally), though the triggers for each stage vary widely from person to person. Depending on the strength of the threat stimulus, the response can skip stages. For example, an unexpected explosion might immediately trigger a flight response in some and a forfeit response in others. Training can alter the sensitivity to triggers and the stage sequence. For example, soldiers are trained to freeze and then fight and in some cases to never engage in flight or forfeit.

Consider freeze-flight-fight-forfeit in the design of systems that involve performance under stress, such as the design of life-critical control systems (e.g., air traffic control), emergency response plans and systems (e.g., emergency evacuation), and emergency and self-defense training. Simplify tools, plans, and displays appropriately in anticipation of diminished performance capabilities. Employ tools and controls that require gross motor control only, and incorporate forgiveness to prevent and minimize the effects of errors. Ensure the visibility of critical elements to mitigate the effects of tunnel vision. In contexts where complex decision making is required, avoid overusing alerts and alarms as they undermine concentration and further burden cognitive functions.

See also Classical Conditioning, Defensible Space, and Threat Detection.

¹ Also known as *Fight or Flight* and *sympathetic nervous system (SNS) reaction*.

² The seminal work on “fight or flight” is *Bodily Changes in Pain, Hunger, Fear and Rage: An Account of Recent Research into the Function of Emotional Excitement* by Walter Cannon, Appleton-Century-Crofts, 1929. The updated construction—freeze-flight-fight-forfeit—builds on proposals presented in *The Psychology of Fear and Stress* by Jeffrey Alan Gray, Cambridge University Press, 1988, and “Does ‘Fight or Flight’ Need Updating?” by H. Stefan Bracha, Tyler C. Ralston, Jennifer M. Matsukawa, et al., *Psychosomatics*, October 2004, vol. 45, p. 448–449.



On January 15, 2009, US Airways Flight 1549 suffers total engine failure shortly after takeoff due to bird strike. The plane is forced to ditch in the

Hudson River. The plane will sink in 24 minutes. Passenger reaction spans the freeze-flight-fight-forfeit continuum, but the crew manages

this range of reactions through calm and assertive leadership. As a result, all 150 passengers and five crew members survive the incident.