

GPS repeaters, and even some systems onboard the aircraft. In general, these types of unintentional interference are localized and intermittent. Of greater and growing concern is the intentional and unauthorized interference of GPS signals by persons using “jammers” or “spoofers” to disrupt air navigation by interfering with the reception of valid satellite signals.

NOTE–

The U.S. government regularly conducts GPS tests, training activities, and exercises that interfere with GPS signals. These events are geographically limited, coordinated, scheduled, and advertised via GPS and/or WAAS NOTAMS. Operators of GPS aircraft should always check for GPS and/or WAAS NOTAMS for their route of flight.

c. GPS is a critical component of essential communication, navigation, and surveillance (CNS) in the NAS; and flight safety/control systems. Additionally, some satellite communications avionics use GPS signals for operations in oceanic and remote airspaces. It is the sole aircraft position–reporting source for Automatic Dependent Surveillance – Broadcast (ADS–B). Some business aircraft are using GPS as a reference source for aircraft flight control and stability systems. GPS is also a necessary component of the Aircraft Terrain Awareness and Warning System (TAWS) – an aircraft safety system that alerts pilots of upcoming terrain. There are examples of false “terrain–pull up” warnings during GPS anomalies.

d. When flying IFR, pilots should have additional navigation equipment for their intended route to crosscheck their position. Routine checks of position against VOR or DME information, for example, could help detect a compromised GPS signal. Pilots transitioning to VOR navigation in response to GPS anomalies should refer to the Chart Supplement U.S. to identify airports with available conventional approaches associated with the VOR Minimum Operational Network (MON) program. (Reference 1–1–3f.)

e. When flying GPS approaches, particularly in IMC, pilots should have a backup plan in the event of GPS anomalies. Although the appropriate response will vary with the situation, in general pilots should:

1. Maintain control of the aircraft,
2. Use the last reliable navigation information as the basis for initial headings, and climb above terrain,
3. Change to another source of navigation, if available (i.e., VOR, DME radar vectors).
4. Contact ATC as soon as practical.

f. Pilots should promptly notify ATC if they experience GPS anomalies. Pilots should not normally inform ATC of GPS interference or outages when flying through a known NOTAMed testing area, unless they require ATC assistance. (See 1–1–13.)