

GAO Highlights

Highlights of [GAO-23-105335](#), a report to the Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

GPS provides positioning, navigation, and timing information that enhances transportation safety. Therefore, GPS interference has the potential to significantly harm transportation safety. Federal policy requires DOT to identify and respond to interference incidents in the U.S., improve resilience to GPS interference, and ensure transportation safety.

GAO was asked to review DOT's efforts to identify and address GPS interference effects on transportation safety. This report, among other things: (1) describes interference effects on transportation safety; (2) assesses DOT's processes to identify interference incidents; and (3) assesses DOT's approach to improve resilience to GPS interference.

GAO reviewed federal laws and policies, DOT policies, and analyzed DOT's and other agencies' data on user-reported interference incidents from 2017 through spring 2022. GAO also interviewed federal officials, industry stakeholders, and researchers selected for representation across modes, among other factors.

What GAO Recommends

GAO is making two recommendations for DOT (1) to document its incident identification process, including identifying controls to obtain complete and accurate information and (2) to develop a strategic approach to resilience that fully aligns with key standards for program management. DOT agreed with these recommendations.

View [GAO-23-105335](#). For more information, contact Heather Krause at (202) 512-2834 or KrauseH@gao.gov.

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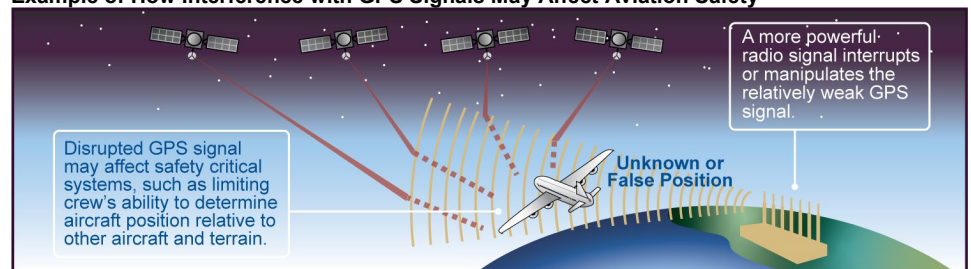
GPS DISRUPTIONS

DOT Could Improve Efforts to Identify Interference Incidents and Strengthen Resilience

What GAO Found

Transportation modes use GPS—a satellite-based system—to obtain positioning, navigation, and timing information. This information enhances transportation safety by supporting surveillance, situational awareness, and emergency response. However, GPS is vulnerable to unintentional and intentional interference from a variety of sources such as solar flares and jamming. Such interference has the potential to affect transportation safety.

Example of How Interference with GPS Signals May Affect Aviation Safety



Source: GAO analysis of GPS Interference. | [GAO-23-105335](#)

The Department of Transportation's (DOT) process for identifying potential GPS interference incidents does not result in complete and accurate information. In January 2020, DOT began analyzing user reports of potential GPS interference across all transportation modes to identify incidents and support federal investigations. Through this process, DOT identified 196 potential GPS interference incidents from January 2020 through May 2022. However, GAO found that DOT's process does not include all available user reports, and DOT's data contain inaccurate information. For instance, GAO found that during this period users submitted 72 reports of potential GPS interference to a system DOT does not consider in its process. DOT's process faces limitations because DOT has not documented it nor identified controls to ensure complete and accurate information. Instead, one individual knows how it works, and no other staff review or verify the results. Without a process that produces quality GPS interference information, federal efforts to quickly respond to and stop interference could be delayed.

DOT has undertaken many efforts intended to improve the transportation sector's resilience to GPS interference, such as working to identify potential GPS backups. However, the extent to which DOT's efforts have improved resilience is unclear because DOT has not taken a strategic approach to guide its efforts. Though DOT has taken steps to plan some of its resilience activities, DOT's current approach does not guide its collective resilience efforts or fully define objectives, prioritize actions, or address challenges, consistent with key program management standards. DOT officials told GAO they are in the process of developing a strategic plan to guide its positioning, navigation, and timing resilience efforts but do not expect the draft to be complete until early 2023. Until DOT has a more strategic approach in place, it is limited in its ability to assess progress toward resilience, leverage limited resources, and navigate long standing challenges to improving resilience.