

Safety Bulletin

SB No.: 03/2024

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Subject: Possible Disturbance of Instrument Landing System (ILS) Signals

For the attention of: Aerodrome Operators, Air Navigation Service Providers, Air Operators, and General Aviation (GA) operators

Purpose:

The purpose of this bulletin is to raise awareness among Aerodrome Operators, Air Navigation Service Providers, Air Operators and General Aviation (GA) operators about safety concerns regarding the possible disturbance of the Instrument Landing System (ILS) signal due to the presence of aircraft, vehicles, or objects within the ILS critical/sensitive areas. Additionally, this safety bulletin serves as a completion to the Thailand Aviation Safety Action Plan: TASAP 2024-2026. The bulletin's primary focus lies in achieving State safety objective OPR1 and OPR2: To reduce the rate of occurrences related to Controlled Flight into Terrain (CFIT), and Loss of Control In-flight (LOC-I) respectively, alongside other high-severity events. CFIT and LOC-I fall within the High-Risk Category (HRC) as defined in the Global Aviation Safety Plan (GASP) and the Asia-Pacific Regional Aviation Safety Plan (AP-RASP). Recognized as HRC occurrences, they harbor the potential for catastrophic consequences such as accidents, fatalities, and substantial aircraft damage. Hence, effective management and control of these HRCs and their associated risks are imperative. The Thai aviation industry, supported by CAAT, plays a pivotal role in achieving these objectives.

Description:

In recent years, the Civil Aviation Authority of Thailand (CAAT) has received a number of safety occurrence reports regarding the fluctuation or loss of Instrument Landing System (ILS) signals (localizer and/or glideslope signals) during aircraft performing an ILS approach. According to safety data analysis results, it was determined that one of the significant causes contributing to this issue resulted from disturbances of the ILS signals due to the presence of aircraft, vehicles, or obstacles within the ILS critical/sensitive areas. The disturbances have been observed to cause fluctuations or temporary losses of the ILS signals. These fluctuations may lead to situations where aircraft automation or autopilot systems excessively pitch and/or roll the aircraft, potentially resulting in High-Risk Category events (HRCs) such as Controlled Flight Into Terrain (CFIT) and Loss of Control in Flight (LOC-I), as well as, other high severity consequences such as Undershoot/Overshoot (USOS) and Abnormal Runway Contact (ARC).

The identification of the ILS critical area and ILS sensitive area, and the necessity for protecting the ILS critical area and controlling ILS sensitive areas, are outlined in ICAO Annex 10, Aeronautical Telecommunications, Volume I, Radio Navigation Aids. The establishment of these areas is crucial for protecting ILS signals from disturbances caused by aircraft, vehicles, or objects present within these areas. Such disturbances could potentially have a negative impact on the safety of aircraft operations.

Pilots are advised, in accordance with the information provided in the Thailand Electronic Aeronautical Information Publication (eAIP Thailand), to maintain awareness when operating in aerodromes with the possibility of ILS signal disturbance and to discern whether ILS fluctuations stem from movement through the ILS critical/sensitive area or equipment malfunctions. Nevertheless, it is crucial for pilots to maintain positive control regardless of the situation.

Moreover, CAAT, in collaboration with the Operational Task Force, is closely monitoring and working to minimize risks associated with this issue. Civil Aviation Organizations (CAOs) are encouraged to report any incidents related to or caused by disruptions to the ILS signal to CAAT, as outlined in "THE CIVIL AVIATION AUTHORITY OF THAILAND REQUIREMENT ON REPORTING OF CIVIL AVIATION OCCURRENCES." This requirement mandates certain CAOs to submit relevant issues through mandatory occurrence reports. However, even if not mandated by regulation, voluntary occurrence reports are highly valued.

The reporting channel, along with its guidance materials, can be accessed through a link provided at the conclusion of this Safety Bulletin.

Recommendations:

1. Aerodrome operators should:

- Distribute information about ILS critical/sensitive areas and emphasize their importance to relevant personnel and stakeholders.
- Conduct Hazard Identification and Risk Assessment (HIRA) with relevant stakeholders to determine appropriate risk control measures and should include changes to the operating environment of the ILS. Review the layout of the aerodrome as necessary, particularly at locations where taxiways and/or runway-holding positions are established within critical/sensitive areas of ILS signals or have the potential for taxiing aircraft to disrupt the ILS signals. Ensure adherence to relevant regulations and include appropriate measures for safeguarding the ILS signals.
- Communicate the results of the HIRA to relevant personnel and stakeholders, emphasizing adherence to risk control measures.

2. Air Navigation Service Providers should:

- Distribute information about ILS critical/sensitive areas and emphasize their importance to relevant personnel and stakeholders.
- Emphasize the importance of timely communication and notification to approaching aircraft in case of potential disturbance to the ILS signals.
- Conduct Hazard Identification and Risk Assessment (HIRA) with relevant stakeholders and should include changes to the operating environment of the ILS, and review aerodrome traffic control procedures as necessary to ensure that ILS critical/sensitive areas are kept as clear as possible during ILS approaches.
- Communicate the results of the HIRA to relevant personnel and stakeholders, emphasizing adherence to risk control measures.

3. Air Operators should:

- Distribute information about ILS critical/sensitive areas, report any concerns to ATC, and provide guidance to flight crews.
- Promote increased awareness and maintain effective Crew Resource Management (CRM) when flight crews perform the ILS approach at an aerodrome known to have this issue.
- Emphasize the importance of maintaining positive aircraft control, whether using automation or not.
- Develop evidence-based training scenarios that incorporate recognition, awareness, and operating procedures related to fluctuations or losses of the ILS signals.
- Conduct Hazard Identification and Risk Assessment (HIRA) with relevant stakeholders, and review approach and landing procedures in the event of ILS signal fluctuations as necessary.
- Communicate the results of the HIRA to relevant personnel and stakeholders, emphasizing adherence to risk control measures.

4. General Aviation (GA) operators should:

- Report any concerns to ATC.
- Submit a voluntary report to CAAT in the event of encountering the ILS disturbance issue.
- Emphasize increasing awareness and maintaining effective Crew Resource Management (CRM) when flight crews perform the ILS approach at an aerodrome known to have this issue.
- Emphasize the importance of maintaining positive aircraft control, whether using automation or not.

References:

1. European Aviation Safety Agency. (2015, October 07). *Possible Disruption of Instrument Landing System Signal* (EASA SIB No.: 2015-20).

<https://ad.easa.europa.eu/ad/2015-20>

2. Federal Aviation Administration. (2012, April 16). *Instrument Landing System (ILS) Fluctuations Caused by Movement through the ILS Critical/sensitive Area* (InFO 12007).

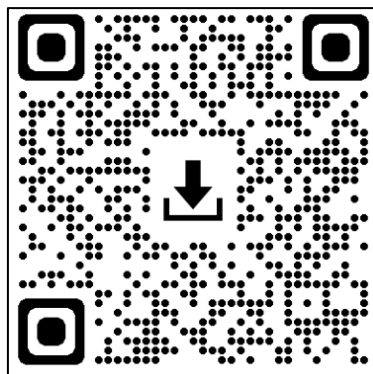
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3. International Civil Aviation Organization. (2023, July). *ICAO, Annex 10, Aeronautical Telecommunications, Volume I, Radio Navigation Aids* (8th edition).

4. The Civil Aviation Authority of Thailand. (2024, February 8). *Thailand Aviation Safety Action Plan: TASAP 2024 – 2026*.

Thailand's Aviation Safety Occurrence Reporting Portal:

For Aviation Safety Occurrence Reporting, please visit:



<https://portal.caat.or.th/occurrence/>

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