AIR TRAFFIC BULLETIN PROCEDURES

A communication from the Director of Policy, Mission Support Services
Federal Aviation Administration, U.S. Department of Transportation.

Issue # October 2025-2

***In this Issue**:*

Taxiing Aircraft and Holding Short Without Markings, Applying FAA Guidance for Space Launch and Recovery Mishaps in the Operation, MAYDAY & PAN-PAN

*T: Taxiing Aircraft and Holding Short Markings

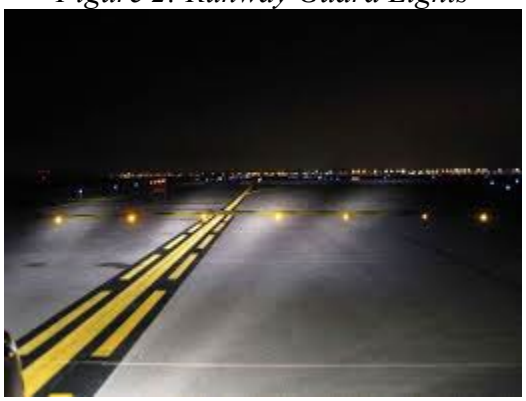
Navigating the Risks: Taxiing Aircraft and Holding Short Without Airport Markings

Air traffic controllers are pivotal in ensuring the safety and efficiency of aircraft movements on the ground. A critical component of this responsibility involves managing aircraft as they taxi and hold short of runways. The absence or degradation of standard hold short markings may introduce significant hazards, leading to potential runway incursions and compromised safety. Understanding these risks and implementing effective mitigation strategies is essential for maintaining safe airport operations.

Visual Aids for Airfield Navigation: Pilots depend heavily on visual cues such as elevated signage, pavement surface markings, and lighting to navigate the airfield safely. Runway holding positions utilize both visual aids to indicate where a pilot is to hold short of a runway protected surface, typically the runway safety area. The basic standard for a runway holding position is a mandatory instruction sign aligned with a pattern *A* hold line marking to create a horizontal extension of the hold sign (*Figure 1*). Additional supplemental visual aids include surface-painted hold position signs, enhanced taxiway centerlines, and runway guard lights (*Figure 2*).

Figure 1:Hold Position Sign

Figure 2: Runway Guard Lights



The Hazards of Unmarked/Degraded Hold Short Markings

Pilot Uncertainty and Misinterpretation: When the conspicuity of the hold line marking becomes diminished due to contaminants or faded paint, the risk of an aircraft inadvertently entering a protected area of an active runway increases, possibly leading to a dangerous runway incursion. Controllers depend on clear visual references to confirm that an aircraft is holding in the correct position. In the absence of hold short markings, assessing whether an aircraft has stopped at a safe distance from the runway becomes more difficult, especially under low visibility conditions. This uncertainty can hinder timely and accurate decision-making. If an aircraft stops too close to or across the runway holding position line due to obscured or missing markings, controllers may have difficulty assessing its exact location. While the lighted sign remains available, the controller is required to project the location of the plane relative to the sign.

Other examples of situations where markings may be absent or become unclear are construction and maintenance activities, where ongoing airfield projects may result in temporary removal or obscuring of hold short markings. Additionally, snow or debris coverage and other environmental factors can conceal markings, making them difficult or impossible to see. And

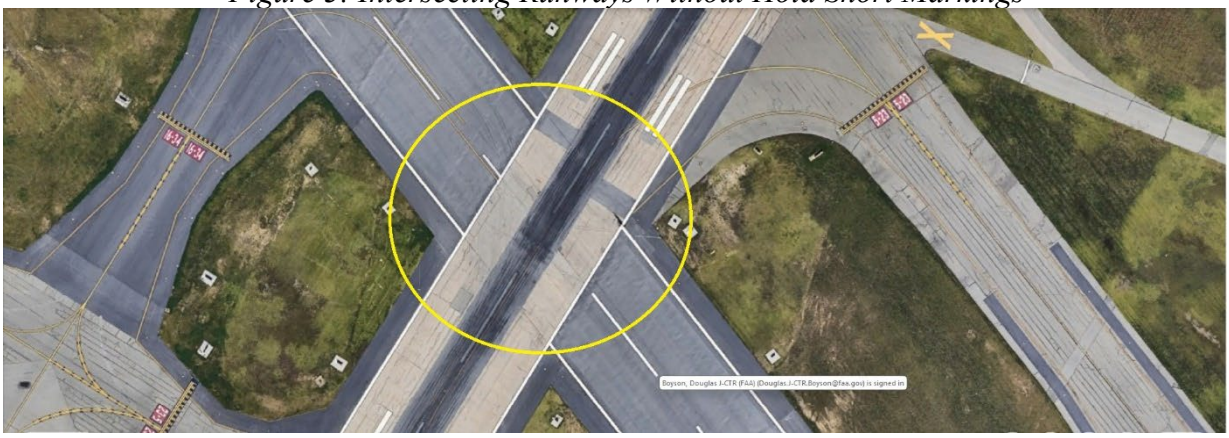
finally, wear and fading. Over time, markings can degrade due to weather and operational wear, reducing their visibility and effectiveness.

Increased Risk of Runway Incursions: Without clear hold short lines, the likelihood of aircraft mistakenly taxiing into protected areas and onto active runways rises. Such incursions pose severe safety threats, including loss of separation and potential collision conflicts. Ensuring that aircraft stop at appropriate locations is vital to prevent these incidents.

Elevated Workload and Communication Challenges: The absence or obscuration of standard markings necessitates more detailed instructions from controllers and may require pilots to seek additional clarifications beyond reliance on the mandatory instruction signs. This increased communication can lead to frequency congestion, heightening the risk of miscommunication and errors.

Airports with intersecting runways will not normally have hold line markings on the runway unless there is an approved Land and Hold Short Operations (LAHSO) in place or a letter of agreement with the airport operator regarding the use of a runway for continuous taxi operations. *Figure 3* below is an example of intersecting runways without hold short markings. To the left and right of the intersecting runways are examples of runway hold short markings

Figure 3: Intersecting Runways Without Hold Short Markings



Aircraft Holding for Traffic Conflicts on a Runway or Taxiway: Issuing holding instructions to aircraft requires pilot and controller awareness and focus, which must not be overlooked. When you instruct a pilot to "*Hold short of Taxiway XX,*" the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. Exercise caution and extra vigilance when taxiing a plane on a runway and issuing instructions to hold short of an intersecting runway. While all runways/runway intersections will have mandatory instruction signs, or signs for safety and awareness, not all runways have hold lines for a corresponding intersecting runway. When the marking is not present, the pilot MUST STOP the aircraft at a point that provides adequate clearance from an aircraft on the intersecting taxiway. In these situations, it is critical that you communicate holding instructions/expectations clearly and that the pilot acknowledges these instructions. Maintaining situational awareness is paramount. Confirm readbacks carefully and request pilot verification if there is any doubt. Ensure pilots

acknowledge and understand these instructions and confirm their position if there is any uncertainty.

Mitigation Strategies

Utilization of Temporary Visual Aids During Airfield Construction: Airport operators and facility management should coordinate to deploy temporary signage or lighting to indicate hold short positions when standard markings or lighting are not effective, unavailable, or become obscured when airfield construction is occurring. These temporary aids can provide essential visual cues to pilots for airfield directional or position awareness.

Increased Vigilance and Monitoring: When airport markings appear to be faded by visual observation or pilot reports indicate markings are faded or obscured, report these instances to the airport operator and note this for the operation. Ground surveillance systems, such as Airport Surface Detection Equipment (ASDE) and Surface Awareness Initiative Display (SAID), are extremely effective tools to closely monitor aircraft positions, particularly in areas where markings are absent. This proactive approach allows for prompt intervention if an aircraft approaches a runway without authorization. ***However, scanning the airport and clearly communicating pilot expectations is key.***

Issuance of Notices to Airmen (NOTAMs): Promptly coordinate with the airport operator to disseminate NOTAMs to inform pilots of any temporary changes or deficiencies in airfield markings or visual aids. This advance notice allows flight crews to prepare and exercise additional caution when operating in affected areas. Ensure this information is on the Automatic Terminal Information Service (ATIS).

Conclusion

The absence or diminished state of standard hold short markings presents significant challenges and hazards in airport ground operations. Air traffic controllers must adopt proactive communication strategies, utilize temporary visual aids, maintain heightened vigilance, and collaborate effectively with airport authorities to mitigate these risks. By implementing these measures, controllers can enhance situational awareness, prevent runway incursions, and ensure the continued safety and efficiency of air traffic operations.

REFERENCE
AIM, Para 2-3-5, Holding Position Markings.
AC 150/5340-18.
14 CFR Section 139.311, Marking, Signs, and Lighting.

Submitted by AJV-P3

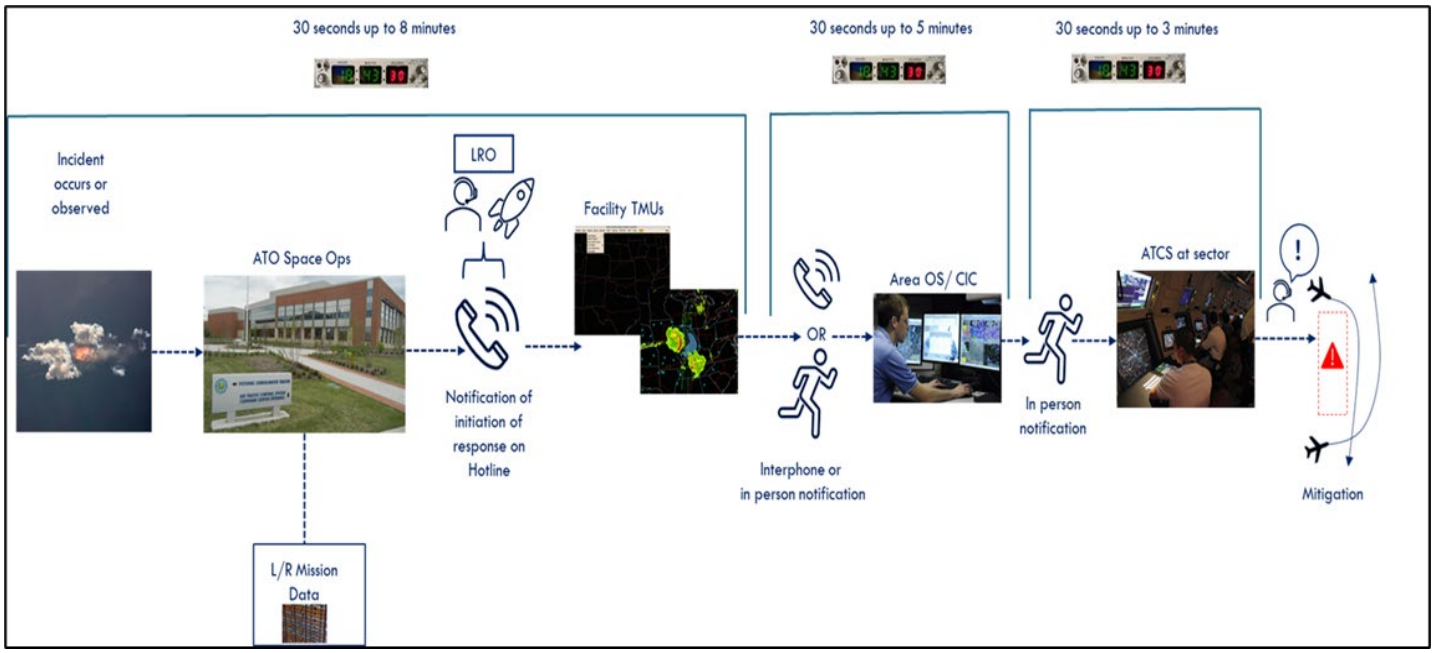
*T, *E, *R, *F: Spacecraft and Air Traffic (Space is Big, but Not That Big)

Space operations are becoming increasingly frequent within the NAS, turning launch activities and associated hazard area procedures into routine occurrences that require careful planning, effective risk management, and seamless coordination across air traffic operations. Unproven and emerging large-scale space vehicles are susceptible to mishaps, creating debris-generating

events in the NAS. This ATPB seeks to clarify the procedures, suggest best practices, and provide references in directives so facilities may be aptly positioned to address these challenges. Per FAA Order JO 7110.65 and FAA Order JO 7210.3, A debris-generating space launch or reentry vehicle mishap is an emergency situation in the NAS. All efforts should be made to safely mitigate aircraft exposure to falling debris. The Pilot/Controller Glossary defines a Debris Response Area (DRA) as an area of airspace that may be activated in response to unplanned falling debris in the NAS.

Bottom Line Up Front- Best Practices

- Facilities participate in hotlines hosted by ATO Space Operations (AJR-1800) for tactical space operations that may impact their airspace.
  - Participation, roles, and responsibilities may be codified in local directives.
- In accordance with FAA Order JO 7210.632, Air Traffic Occurrence Reporting, mandatory occurrence reports (MORs) should be entered for off-nominal events.
  - Include available playback data of the event in the affected area.
  - Report anything and everything that is impacted by space operations (e.g., sector saturation, loss of separation, diverts).
  - For proper cataloging, mention “Space Operations” in occurrence reports.
- In addition to MORs, specialists are encouraged to file Air Traffic Safety Action Program (ATSAP) reports, which are crucial for future safety requirements.
- Upon review of facility Quality Control data, consider Space Operations in facility refresher training.
- Consider tabletop exercises, Test and Training Lab (TTL), Dynamic Simulator (DYSIM), Enhanced Target Generator (ETG) scenarios that simulate an off-nominal event and subsequent debris fall and/or DRA procedures.
- If needed, provide or address DRA procedures in local directives or LOAs to ensure preparedness and response standardization; dedicate a position to be the central information collection and coordination point for all space launch and reentry activities; and define who creates facility launch packages and how the information is coordinated within the facility.



Mishap Chain of Events

Timely Notification = Quick Response and Mitigation

Recent off-nominal events have demonstrated that prolonged latencies exist between the occurrence of an incident and its confirmation due to complex factors in the launch/reentry operators (LRO) determination process. Aircraft Pilot Reports (PIREPs) have been useful in expediently identifying and corroborating off-nominal events.

Emergency! DRAs in Action

As debris-generating space launch or reentry mishaps are emergency situations, controllers should be cognizant of the procedures in FAA Order JO 7110.65, Chapter 10, Section 1, General. The highlights from para 10-1-1 through 10-1-5 applicable to DRA response:

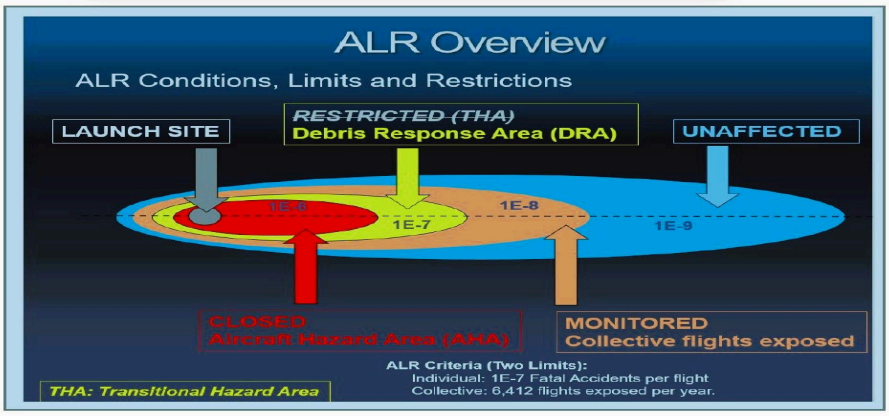
- 10-1-1: *Emergency Determination:* "Because of the infinite variety of possible emergency situations, specific procedures cannot be prescribed. However, when you believe an emergency exists or is imminent, select and pursue a course of action which appears to be most appropriate under the circumstances and which most nearly conforms to the instructions in this manual."
- 10-1-2 *Obtaining Information:* "Provide assistance that is consistent with the request of the pilot. If you believe an alternative course of action may prove more beneficial, transmit your recommendation(s) to the pilot."
- 10-1-3 *Providing Assistance:* "Enlist the services of available radar facilities operated by the FAA, the military services, and the Federal Communications Commission, as well as their emergency services and facilities, when the pilot requests or when you deem necessary."

- 10-1-4 *Responsibility:* “Transfer this responsibility to another facility only when you feel better handling of the emergency will result.”
- 10-1-5 *Coordination*: “Coordinate efforts to the extent possible to assist any aircraft believed overdue, lost, or in emergency status.”

DRAs are precalculated areas based on risk contours, which are geographical representations that illustrate specific levels of risk in a given area and are distributed to field facilities. Figure 2-1 provides an overview of the various contours associated with a DRA.

- Not all mission types have a DRA defined/provided.
- DRAs are only defined in surveilled U.S. delegated airspace where two-way communication exists and may be incomplete due to airspace boundaries with non-US procedural and/or non-surveilled airspace.
- If a DRA is not applicable in your airspace and a mishap occurs, alert aircraft to the approximate location.
- For more info, refer to eLMS courses:
    - 57017102, Debris Response Area (DRA) Briefing-Contingency Procedures
    - 57017101, Commercial Space Acceptable Level of Risk (ALR) for ATCS

Figure 2-1, DRA Contour overview



FAA Order JO 7110.65, paragraph 10-5-2, Debris-Generating Space Launch and Reentry Vehicle Mishaps

Para 10-5-2a: *In the event of a debris-generating space launch or reentry vehicle mishap, issue an alert broadcast to all affected aircraft informing them of the mishap, and, if known, the approximate location of the debris fall area. If a debris response area (DRA) has been activated, issue the approximate location of the response area instead.*

The first sentence of the aforementioned subparagraph applies to **all** facilities affected by an off-nominal space launch or reentry event. EN ROUTE, OCEANIC, or TERMINAL facilities must make every effort to use all available and practical methods to transmit this alert broadcast via voice, text, or communications relay.

The second sentence of subparagraph a stipulates that, instead of an approximate location alert, controllers must issue the approximate location of the activated Debris Response Area (DRA).

EXAMPLE−
"Attention all aircraft, due to a space vehicle mishap, possible debris falling in the NAS from approximately Brownsville, Texas, extending east for approximately five hundred miles. Stand by for individual instructions."

"Attention all aircraft, due to a space vehicle mishap, a debris response area has been activated beginning at approximately Cape Canaveral, extending northeast for approximately three hundred miles. Stand by for individual instructions."

- Phraseology *Examples* can be amended for radio or CPDLC/Data Comm format as appropriate for message information/completeness.
- Facility-specific phraseology can be locally tailored and made available to sector teams for quick reference.

1. *When workload permits, reissue the alert broadcast approximately every 15 minutes.*

- FAA Order JO 7110.65, paragraph 2-1-2, Duty Priority, subparagraph a: "Give first priority to separating aircraft and issuing safety alerts as required in this order. Good judgment must be used in prioritizing all other provisions of this order based on the requirements of the situation at hand."
- FAA Order JO 7110.65, paragraph 2-1-4, Operational Priority, subparagraph a: "An aircraft in distress has the right of way over all other air traffic."
- Pending higher priority items and the capability to do so, rebroadcast every 15 minutes.

2. *When advised that falling debris is no longer a factor, or the DRA has been deactivated, issue a broadcast to advise all aircraft of this information.*

EXAMPLE−
"Attention all aircraft, falling debris no longer a factor."
"Attention all aircraft, the debris response area is no longer active."

b. *In the event of a debris response area activation:*

1. *Issue instructions and/or clearances to prevent aircraft from entering the debris response area, unless a higher priority duty already exists.*

REFERENCE−
FAA Order JO 7110.65, Para 2−1−2a, Duty Priority.

- 14 CFR section 91.3 dictates that the pilot in command is directly responsible for, and is the final authority as to, the operation of that aircraft, and the pilot may deviate from ATC instructions during an emergency.

2. *For airborne aircraft already within an activated DRA:*

(a) *Assist aircraft to exit the DRA expeditiously.*

(b) *Do not withhold landing or approach clearances***.**

3. *For airports that underlie an active DRA:*

(a) *Do not issue departure releases or takeoff clearances.*

(b) *To the extent possible, do not clear aircraft onto the movement area.*

- This includes any underlying non-U.S. facilities where ATC services are delegated to a US facility.

FAA Order JO 7210.3, paragraph 18-4-7 Space Launch or Reentry Vehicle Mishaps

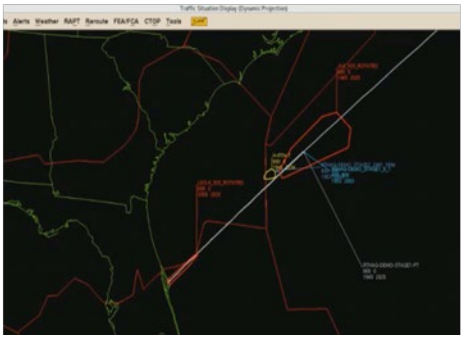
- The procedures within this paragraph empower facility TMUs to institute Traffic Management Initiatives such as metering, airspace flow programs, reroutes, ground stops, and holding to ensure emergency management workload during this emergency event.
- Facility TMUs have "the big picture" when it comes to incoming traffic and may be able to identify flights that are projected to enter debris fall areas or DRAs and tactically keep them clear.

Para 18-4-7b. *Upon notification of a debris-generating space launch or reentry vehicle mishap, or the activation of a debris response area (DRA), the ARTCC/Terminal TMU whose geographic area of responsibility is impacted must, to the extent possible, take actions to help mitigate aircraft exposure to falling debris.*

Debris Hazard Areas and Debris Fall Areas on ERAM display

Debris Hazard Area on MEARTS display

Debris Hazard Areas and Debris Fall Areas on TSD



Debris Fall Areas on ATOP display

*T, *E, *R, *F: Understanding MAYDAY and PAN-PAN

Commercial airlines have indicated that company training will emphasize the use of MAYDAY and PAN-PAN phraseology before plain language transmissions. Controllers should expect to hear MAY-DAY in place of "Declaring emergency" more often.

In the world of aviation, clear and immediate communication is vital—especially in emergencies. Two internationally recognized signals, "MAYDAY" and "PAN-PAN," form the backbone of emergency communication between pilots and controllers. Conversations with industry pilots, operators, and crews indicate "MAYDAY" and "PAN-PAN" may be used more frequently to describe emergency or urgent situations. As an air traffic controller, understanding the meaning, usage, and appropriate response to these calls is critical for ensuring safety and enabling effective crisis management.

Background: It has become increasingly apparent that confusion exists among both pilots and controllers regarding the correct use and interpretation of the emergency calls MAYDAY and PAN-PAN. According to FAA Order JO 7110.65, aircraft in distress or requiring urgent attention must be given priority and support. Misunderstandings about the severity each call represents, the situations in which they should be used, and the appropriate responses from ATC may lead to delayed assistance, miscommunication, or unnecessary escalation. This article clarifies the controller's responsibilities and phraseology when responding to aircraft in distress (MAYDAY) or urgency (PAN-PAN) conditions.

Definitions:

MAYDAY: *The international radiotelephony distress signal. When repeated three times, it indicates imminent and grave danger.*

Adopted as the official aviation distress call in 1927, MAYDAY is the universally recognized distress call used in **life-threatening emergencies.**

MAYDAY indicates distress—a condition of being threatened by serious and/or imminent danger. Examples of these dangers include, but are not limited to:

- Aircraft on fire
- Smoke in the cockpit
- Critically ill passenger
- Emergency fuel status
- Bird Strike
- Visual flight rules (VFR) pilot in instrument flight Rules (IFR) conditions

PAN-PAN: *The international radio-telephony urgency signal. When repeated three times, it indicates uncertainty or an alert followed by the nature of the urgency.*

Short for "possible assistance needed," PAN-PAN indicates urgency—a condition concerning the safety of an aircraft or person but **not requiring immediate assistance.**

Here are a few examples of possible situations where a pilot may announce *PAN-PAN* on your frequency. Situations include but are not limited to:

- Unsafe gear indication
- Sick or overly disruptive passenger
- Door open
- Seat belt outside the door

Procedures for Controllers*:*

1. Acknowledge Immediately

Upon receiving a MAYDAY or PAN-PAN transmission:

- Respond without delay.
- Use the aircraft's call sign and repeat the distress/urgency signal.

Examples:

- *"United 432, roger MAYDAY, what is your position and nature of emergency?"*
- *"Cessna 45X, roger PAN-PAN, say intentions."*

2. Provide Priority Handling

- MAYDAY aircraft receive absolute priority over all other traffic.
- PAN-PAN aircraft receive priority over routine traffic but below a MAYDAY situation.

3. Avoid Unnecessary Frequency Changes

- Keep the aircraft on the same frequency unless necessary.
- If a change is unavoidable, coordinate with the receiving controller and ensure continuity of assistance.

4. Record and Relay

- Begin immediate documentation of all transmissions.
- Notify supervisory personnel and initiate emergency coordination procedures per FAA Order JO 7110.65, paragraphs 10-1-4, Responsibility, and 10-1-5, Coordination.

Coordination Requirements:

- If assistance from Aircraft Rescue and Firefighting (ARFF), Search and Rescue (SAR), or other external agencies is needed, initiate requests promptly.
- Coordinate with adjacent sectors/facilities if the aircraft will enter their airspace.
- Update ATC automation systems with appropriate emergency indicators as needed.

Phraseology Reminders:

- Do not use “MAYDAY” or “PAN-PAN” unless relaying pilot transmissions.
- Do not downplay or question the pilot’s declaration.
- Avoid ambiguous responses like “Okay” or “Copy that.” Use clear, standard phraseology.

Final Thoughts:

MAYDAY and PAN-PAN calls are rare, but your readiness to handle them effectively can save lives and prevent catastrophic outcomes. Understanding their nuances and responding with professionalism and precision underscores your vital role in aviation safety. Stay calm and always be prepared.

Submitted by AJV-P3

The Air Traffic Procedures Bulletin (ATPB) is a means for headquarters to remind field facilities of proper application of procedures and other instructions. It is published and distributed on an as needed basis.

Articles must be submitted electronically in Microsoft® Word by the offices of primary responsibility with approval at the group level or above. Articles may be submitted throughout the year.

*In this publication, the option(s) for which a briefing is required is indicated by an asterisk followed by one or more letter designators, i. e., * T – Tower, *E – ARTCC, *R – TRACON, or *F – FSS.*

(Reference FAA Order JO 7210.3, Facility Operation and Administration, paragraph 2-2-9)
Archived ATPB issues are available online: www.faa.gov/air_traffic/publications/