

February 11, 2021

Mr. John Murphy  
Chief Operating Officer  
National Weather Service

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of the accidents and issue safety recommendations aimed at preventing future accidents. In addition, we carry out special studies concerning transportation safety and coordinate the resources of the federal government and other organizations to provide assistance to victims and their family members affected by major transportation disasters.

The attached letter from the NTSB Chairman provides information about the NTSB's February 1, 2021, report *Revise Processes, Procedures, and Reporting Capabilities for Automated Weather Systems*, NTSB/ASR-21/01. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>. For more information about NTSB and our recommendation process, please see the attached one-page summary.

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendations by number (for example, A-21-1 and -2). We encourage you to submit your response to [ExecutiveSecretariat@ntsb.gov](mailto:ExecutiveSecretariat@ntsb.gov). If your reply exceeds 20 megabytes, including attachments, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

All communications regarding safety recommendations will be stored by the NTSB and viewable by the public. Please do not send privileged or confidential communications in response to this/these recommendation(s). Responses marked as confidential or privileged (or similar designations) will be considered nonresponsive. If you have concerns about this protocol, please contact us at [ExecutiveSecretariat@ntsb.gov](mailto:ExecutiveSecretariat@ntsb.gov).



**Executive Secretariat-crb**  
Office of the Managing Director  
National Transportation Safety Board  
490 L'Enfant Plaza SW  
Washington, DC 20594  
Email: [ExecutiveSecretariat@ntsb.gov](mailto:ExecutiveSecretariat@ntsb.gov)



Office of the Chairman

## National Transportation Safety Board

Washington, DC 20594

February 11, 2021

Mr. John Murphy  
Chief Operating Officer  
National Weather Service  
1325 East West Highway  
SSMC II  
Room 15300  
Silver Spring, MD 20910

Dear Mr. Murphy:

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant accidents in other modes of transportation—railroad, highway, marine, and pipeline. We determine the probable cause of the accidents and issue safety recommendations aimed at preventing future accidents. In addition, we carry out special studies concerning transportation safety and coordinate the resources of the federal government and other organizations to assist victims and their family members affected by major transportation disasters.

We are providing the following information to urge the National Weather Service (NWS) to act on the safety recommendations in this letter because we believe your organization can help reduce the risk of future accidents. For more information about the NTSB and our recommendation process, please see the attached one-page summary.

This letter also includes information about our February 1, 2021, report *Revise Processes, Procedures, and Reporting Capabilities for Automated Weather Systems*, NTSB/ASR-21/01. The details of this investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of our investigation, we identified the following safety issues:

- Lack of clarity in guidance concerning definitions and procedures intended to support timely automated surface observing systems (ASOS) maintenance
- Lack of consistent criteria for issuing ASOS- and automated weather observing (AWOS)-related notices to airmen
- Ineffective maintenance procedures intended to mitigate internal clock drift and resulting erroneous timestamping of observations on some non-federal AWOSs

Accordingly, the NTSB makes the following safety recommendations to the NWS:

- Revise National Weather Service Instruction 30-2111 to clearly define “outage,” “failure,” and similar terms regarding individual automated surface observing system (ASOS) sensor and component performance and to include explicit maintenance actions intended to mitigate presumed erroneous ASOS sensor reporting that does not generate failure flags in maintenance monitoring data. (A-21-1)
- Revise National Weather Service Instruction 30-2112 to provide operational (forecasting) staff at weather forecast offices the authority to determine whether report processing for an automated surface observing system sensor at an unattended site (or other site not currently being appropriately augmented) should be turned off immediately if the sensor is believed to be reporting erroneously but does not yield flags in its maintenance monitoring data and to include clear instructions for performing this task. (A-21-2)

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendations by number (Safety Recommendations A-21-1 and -2). We encourage you to submit your response to [ExecutiveSecretariat@ntsb.gov](mailto:ExecutiveSecretariat@ntsb.gov). If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

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Sincerely,

[Original Signed]

Robert L. Sumwalt, III  
Chairman

February 11, 2021

Mr. Stephen Dickson  
Administrator  
Federal Aviation Administration

The attached letter from the NTSB Chairman provides information about the NTSB's February 1, 2021, report *Revise Processes, Procedures, and Reporting Capabilities for Automated Weather Systems*, NTSB/ASR-21/01. The details of this accident investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations. When replying, please refer to the safety recommendations by number (for example, A-21-3 and -4). We encourage you to submit your response to [ExecutiveSecretariat@ntsb.gov](mailto:ExecutiveSecretariat@ntsb.gov). If your reply exceeds 20 megabytes, including attachments, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.



**Executive Secretariat-crb**  
Office of the Managing Director  
National Transportation Safety Board  
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Office of the Chairman

## National Transportation Safety Board

Washington, DC 20594

February 11, 2021

Mr. Stephen Dickson  
Administrator  
Federal Aviation Administration  
Washington, DC 20591

Dear Mr. Dickson:

This letter provides information about the National Transportation Safety Board's (NTSB) February 1, 2021, report *Revise Processes, Procedures, and Reporting Capabilities for Automated Weather Systems*, NTSB/ASR-21/01. The details of this investigation and the resulting safety recommendations may be found in the attached report, which can also be accessed at <http://www.nts.gov>.

As a result of our investigation, we identified the following safety issues:

- Lack of clarity in guidance concerning definitions and procedures intended to support timely automated surface observing systems (ASOS) maintenance
- Lack of consistent criteria for issuing ASOS- and automated weather observing (AWOS)-related notices to airmen
- Ineffective maintenance procedures intended to mitigate internal clock drift and resulting erroneous timestamping of observations on some non-federal AWOSs

Accordingly, the NTSB makes the following safety recommendations to the FAA:

- Revise Federal Aviation Administration Order 7930.2S to make the standards for issuing notices to airmen (NOTAM) as they relate to automated surface observing systems (ASOS) consistent with the NOTAM issuance standards for automated weather observing systems, including criteria addressing inaccurate or unreliable ASOS sensor information and VHF outages. (A-21-3)
- Establish maintenance standards to eliminate erroneous timestamping and related delayed longline dissemination of weather observations due to excessive internal clock drift and system events from affected automated weather observing system models. (A-21-4)

The NTSB is vitally interested in these recommendations because they are designed to prevent accidents and save lives. We would appreciate a response within 90 days of the date of this letter, detailing the actions you have taken or intend to take to implement these recommendations.

When replying, please refer to the safety recommendations by number (Safety Recommendations A-21-3 and -4). We encourage you to submit your response to [ExecutiveSecretariat@ntsb.gov](mailto:ExecutiveSecretariat@ntsb.gov). If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions on how to send larger documents. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

[Original Signed]

Robert L. Sumwalt, III  
Chairman