

June 8, 2020

Mr. Steve Dickson
Administrator
Federal Aviation Administration

The attached letter from the NTSB Chairman provides information about the NTSB's May 19, 2020, report *Helicopter Air Ambulance Collision with Terrain, Survival Flight Inc., Bell 407 Helicopter, N191SF, near Zaleski, Ohio, January 29, 2019*, NTSB/AAR-20/01. 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-20-13 and -17). We encourage you to submit your response to ExecutiveSecretariat@nts.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.



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Office of the Managing Director
National Transportation Safety Board
490 L'Enfant Plaza SW
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National Transportation Safety Board

Washington, D.C. 20594

Office of the Chairman

June 8, 2020

Mr. Steve Dickson
Administrator
Federal Aviation Administration
800 Independence Avenue
Washington, DC 20591

Dear Mr. Dickson:

This letter provides information about the National Transportation Safety Board's (NTSB) May 19, 2020, report *Helicopter Air Ambulance Collision with Terrain, Survival Flight Inc., Bell 407 Helicopter, N191SF, near Zaleski, Ohio, January 29, 2019*, NTSB/AAR-20/01. 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>.

As a result of this investigation, the NTSB identified the following safety issues:

- Survival Flight's lack of comprehensive and effective flight risk assessment and risk management procedures.
- The lack of a positive safety culture endorsed by Survival Flight management and the lack of a comprehensive safety management system.
- Need for flight data monitoring programs for helicopter air ambulance (HAA) operators.
- Lack of HAA experience for principal operations inspectors assigned to HAA operations.
- Lack of accurate terminal doppler weather radar data available on the HEMS (helicopter emergency medical services) Weather Tool.
- Lack of a flight recorder.

Accordingly, the NTSB makes the following safety recommendations to the Federal Aviation Administration (FAA). Additional information regarding these recommendations can be found in the noted sections of the report.

- Require that principal operations inspectors (POI) assigned to HAA operations possess helicopter and either HAA experience or experience as an assistant POI under a POI with HAA experience. (A-20-13) (See section 2.3)
- Review the flight risk assessments for all helicopter air ambulance operators for compliance with Title 14 *Code of Federal Regulations (CFR)* 135.617 and Advisory

Circular 135-14B and require operators to address any deficiencies that are identified. (A-20-14) (See section 2.3)

- Install the latest software on your terminal doppler weather radars (TDWR) and require the National Weather Service (NWS) to distribute Level II TDWR data to all of its users (as recommended in Safety Recommendation A-20-18 to the NWS) so they will have access to the most accurate precipitation information. (A-20-15) (See section 2.4)
- Require the NWS to add terminal doppler weather radar data to the HEMS Weather Tool overlay (as recommended in Safety Recommendation A-20-19 to the NWS). (A-20-16) (See section 2.4)
- Require the NWS to provide capability in the HEMS Weather Tool to graphically display areas of weather radar limitations, including areas where beams may lack low-altitude coverage, areas that lack radar coverage, and areas of beam blockages (as recommended in Safety Recommendation A-20-20 to the NWS). (A-20-17) (See section 2.4)

In addition, the NTSB reiterates the following recommendations to the FAA:

- Require the installation of a crash-resistant flight recorder system on all newly manufactured turbine-powered, nonexperimental, nonrestricted-category aircraft that are not equipped with a flight data recorder and a cockpit voice recorder and are operating under Title 14 *CFR* Parts 91, 121, or 135. The crash-resistant flight recorder system should record cockpit audio and images with a view of the cockpit environment to include as much of the outside view as possible, and parametric data per aircraft and system installation, all as specified in Technical Standard Order C197, “Information Collection and Monitoring Systems” (A-13-12). (See section 2.5)
- Require all existing turbine-powered, nonexperimental, nonrestricted-category aircraft that are not equipped with a flight data recorder or cockpit voice recorder and are operating under Title 14 *CFR* Parts 91, 121, or 135 to be retrofitted with a crash-resistant flight recorder system. The crash-resistant flight recorder system should record cockpit audio and images with a view of the cockpit environment to include as much of the outside view as possible, and parametric data per aircraft and system installation, all as specified in Technical Standard Order C197, “Information Collection and Monitoring Systems” (A-13-13). (See section 2.5)

In the same report, we also reiterated and classified two previously issued safety recommendations:

- After the action in Safety Recommendation A-16-34 is completed, require all Title 14 *CFR* Part 135 operators to establish a structured flight data monitoring program that reviews all available data sources to identify deviations from established norms and procedures and other potential safety issues. (A-16-35, classified Open—Unacceptable Response in section 2.2.4)
- Require all Title 14 *CFR* Part 135 operators to establish safety management system programs. (A-16-36, classified Open—Unacceptable Response in section 2.2.3)

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-20-13 through -17, A-13-12 and -13, and A-16-35 and -36). We encourage you to submit your response to ExecutiveSecretariat@ntsb.gov. If your reply, including attachments, exceeds 20 megabytes, please e-mail us at the same address for instructions. Please do not submit both an electronic copy and a hard copy of the same response.

Sincerely,

Robert L. Sumwalt, III
Chairman

June 8, 2020

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 May 19, 2020, report *Helicopter Air Ambulance Collision with Terrain, Survival Flight Inc., Bell 407 Helicopter, N191SF, near Zaleski, Ohio, January 29, 2019*, NTSB/AAR-20/01. 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.

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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.



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National Transportation Safety Board

Washington, DC 20594

Office of the Chairman

June 8, 2020

Mr. John Murphy
Chief Operating Officer
National Weather Service
1325 East West Highway
SSMC II
Room 15300
Silver Spring, Maryland 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 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 May 19, 2020, report *Helicopter Air Ambulance Collision with Terrain, Survival Flight Inc., Bell 407 Helicopter, N191SF, near Zaleski, Ohio, January 29, 2019*, NTSB/AAR-20/01. 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>.

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

- Survival Flight's lack of comprehensive and effective flight risk assessment and risk management procedures.
- The lack of a positive safety culture endorsed by Survival Flight management and the lack of a comprehensive safety management system.
- Need for flight data monitoring programs for helicopter air ambulance (HAA) operators.

- Lack of HAA experience for principal operations inspectors assigned to HAA operations.
- Lack of accurate terminal doppler weather radar (TDWR) data available on the HEMS (helicopter emergency medical services) Weather Tool.
- Lack of a flight recorder.

Accordingly, the NTSB makes the following safety recommendations to the National Weather Service. Additional information regarding these recommendations can be found in the noted sections of the report.

- Distribute Level II TDWR data to all of your users (as recommended in Safety Recommendation A-20-15 to the Federal Aviation Administration) so they will have access to the most accurate precipitation information. (A-20-18) (See section 2.4)
- Add TDWR data to the HEMS Weather Tool overlay (as recommended in Safety Recommendation A-20-16 to the Federal Aviation Administration). (A-20-19) (See section 2.4)
- Provide capability in the HEMS Weather Tool to graphically display areas of weather radar limitations, including areas where beams may lack low-altitude coverage, areas that lack radar coverage, and areas of beam blockages (as recommended in Safety Recommendation A-20-17 to the FAA). (A-20-20) (See section 2.4)

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-20-18 through -20). We encourage you to submit your response to 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

June 8, 2020

Mr. Chris Millard
Chief Executive Officer
Viking Aviation
705 Heber Springs Rd.
Batesville, Arkansas 72501

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 May 19, 2020, report *Helicopter Air Ambulance Collision with Terrain, Survival Flight Inc., Bell 407 Helicopter, N191SF, near Zaleski, Ohio, January 29, 2019*, NTSB/AAR-20/01. 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-20-21 through -26). We encourage you to submit your response to 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.

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Office of the Chairman

National Transportation Safety Board

Washington, DC 20594

June 8, 2020

Mr. Chris Millard
Chief Executive Officer
Viking Aviation
705 Heber Springs Rd.
Batesville, Arkansas 72501

Dear Mr. Taylor:

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 Survival Flight 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 May 19, 2020, report *Helicopter Air Ambulance Collision with Terrain, Survival Flight Inc., Bell 407 Helicopter, N191SF, near Zaleski, Ohio, January 29, 2019*, NTSB/AAR-20/01. 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>.

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

- Survival Flight's lack of comprehensive and effective flight risk assessment and risk management procedures.
- The lack of a positive safety culture endorsed by Survival Flight management and the lack of a comprehensive safety management system (SMS).
- Need for flight data monitoring (FDM) programs for helicopter air ambulance (HAA) operators.

- Lack of HAA experience for principal operations inspectors assigned to HAA operations.
- Lack of accurate terminal doppler weather radar data available on the HEMS (helicopter emergency medical services) Weather Tool.
- Lack of a flight recorder.

Accordingly, the NTSB makes the following safety recommendations to Survival Flight. Additional information regarding these recommendations can be found in the noted sections of the report.

- Revise your flight risk assessment procedures to incorporate the elements described by Advisory Circular 135-14B, including procedures for determining prior flight refusals by another HAA operator and forecast en route weather. (A-20-21) (See section 2.2.1)
- Require pilots to complete a comprehensive risk assessment before each flight and complete the appropriate paperwork to reflect their assessment as required by Title 14 *Code of Federal Regulations* 135.617. (A-20-22) (See section 2.2.1)
- Develop a procedure for tracking actual pilot duty times in compliance with Title 14 *Code of Federal Regulations* 135.267. (A-20-23) (See section 2.2.2)
- Develop a process to ensure shift change briefings are performed, to include comprehensive preflight risk assessments, before the acceptance of any flight requests. (A-20-24) (See section 2.2.2)
- Establish an SMS program under the Federal Aviation Administration [FAA] SMS Voluntary Program that includes compliance with Advisory Circular 120-92B, “Safety Management Systems for Aviation Service Providers.” (A-20-25) (See section 2.2.3)
- Develop and implement an FDM program independent of an FAA requirement. (A-20-26) (See section 2.2.4)

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-20-21 through -26). We encourage you to submit your response to 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



NTSB Recommendations and You

The National Transportation Safety Board (NTSB) is an independent federal agency charged with investigating and determining the probable cause of transportation accidents. We do not make regulations, but we do issue recommendations to organizations such as yours when we discover shortcomings in the transportation system that increase the risk of accidents. **As a result of our investigative activities, we have issued one or more safety recommendations that we believe you can act on to improve transportation safety.**

Why did the NTSB issue my organization a safety recommendation?

We issue safety recommendations to organizations that can bring about change to reduce the risk of accidents, either through their direct role in the transportation industry, their legislative or regulatory authority, or the significant influence they have among others in the industry. We believe your organization is able to make or influence such changes.

What does the NTSB expect of safety recommendation recipients?

First and foremost, we encourage you to promptly take the recommended action to improve safety. Because we're eager to see recommendations implemented before more accidents occur, we follow recipients' efforts to implement each recommendation. We ask that you update us any time you achieve a significant milestone in your progress toward implementing the attached recommendation(s), or at least annually. We will provide feedback on your efforts by classifying each recommendation as open or closed, acceptable or unacceptable.¹ Information about your actions associated with your recommendation(s) is available at our [website](https://www.nts.gov) so that the public can see our combined efforts to improve transportation safety.

¹ For a full description of our safety recommendation classifications, see the [Status Explanation](#) page on our website.

What should our response to the NTSB include?

Please respond to us within **90 days (30 for urgent recommendations)** explaining the specific actions you have taken or intend to take in response to the safety recommendation(s), and propose a timeline for completion. We understand organizations today are faced with competing priorities and limited resources, which can make implementing our recommendations a challenge. If, for any reason, you are not able to take the recommended action, or if you believe an alternate action would be more appropriate for your organization, please explain why. When you respond, please provide an e-mail address for future communications. We will review your response and provide feedback.

What if my organization doesn't believe the recommended action is the best way to improve safety?

We base our recommendations on the evidence, facts, and circumstances of the accidents we investigate. Sometimes industry leaders identify ways to attain the same safety objective more efficiently, and we encourage recipients to share their ideas with us. In these cases, we will evaluate the alternate means of achieving the safety objective and provide feedback. We believe safety is a collaborative effort, and we're happy to work with your organization to set goals and make improvements.

Why does the NTSB expect us to take action, even though our organization wasn't responsible for the accident that resulted in the safety recommendation?

Our goal is to prevent accidents. Often, the factors we identify as causing or contributing to an accident are not unique—they represent common practices or situations that may be accidents waiting to happen. In such instances, we may make recommendations intended to raise the minimum standard for safety throughout the industry.

How do we contact the NTSB to provide updates or obtain further information?

Please contact us electronically at executivesecretariat@ntsb.gov. If you wish to send us supporting documentation that, with your response, exceeds 10 megabytes, please contact us at the same e-mail address for instructions.

You can also reach our Safety Recommendations staff at **(202) 314-6290** (please ask to be directed to the Safety Recommendations Division).

NTSB | National
Transportation
Safety Board
www.nts.gov

We look forward to working with you to prevent accidents and save lives!