

# National Transportation Safety Board

Office of the Chair

Washington, DC 20594



January 31, 2024

Docket Operations, M-30  
US Department of Transportation  
1200 New Jersey Avenue SE  
Room W12-140  
West Building Ground Floor  
Washington, DC 20590-0001

Re: Docket Number FAA-2023-2270

Dear Sir or Madam:

The National Transportation Safety Board (NTSB) has reviewed the Federal Aviation Administration's (FAA) notice of proposed rulemaking (NPRM) titled "25-Hour Cockpit Voice Recorder (CVR) Requirement, New Aircraft Production," published at 88 *Federal Register* 84090 on December 4, 2023. The NTSB notes the FAA is proposing to require the installation of 25-hour duration CVRs on only newly manufactured aircraft that require a CVR operating under Title 14 *Code of Federal Regulations* Parts 91, 121, 125, and 135. For the reasons provided in this response, we do not fully support the NPRM because it does not propose a similar requirement to retrofit existing airplanes required to carry a CVR and a flight data recorder (FDR).

In 2018, the NTSB issued the following two recommendations to the FAA:<sup>1</sup>

Require all newly manufactured airplanes that must have a cockpit voice recorder (CVR) be fitted with a CVR capable of recording the last 25 hours of audio. ([A-18-30](#))<sup>2</sup>

By January 1, 2024, require retrofit of all cockpit voice recorders (CVR) on all airplanes required to carry both a CVR and a flight data recorder with a CVR capable of recording the last 25 hours of audio. ([A-18-31](#))<sup>3</sup>

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<sup>1</sup> NTSB. 2018. *Extended Duration Cockpit Voice Recorders*, [ASR-18-04](#).

<sup>2</sup> Safety Recommendation [A-18-30](#) is classified Open–Unacceptable Response. Use NTSB's [CAROL Query](#) for more information about this and other NTSB safety recommendations.

<sup>3</sup> Safety Recommendation [A-18-31](#) is classified Open–Unacceptable Response.

As noted in the NPRM, these recommendations were issued after an incident in 2017 when an Air Canada Airbus A320 lined up to land on a taxiway occupied by several aircraft.<sup>4</sup> The flight crew of the Airbus A320 descended below 100 feet above ground level before starting to climb. The CVR data were overwritten before Air Canada officials learned of the severity of the incident. Although this incident prompted Safety Recommendations [A-18-30](#) and [A-18-31](#), the NTSB also identified 33 other events where the CVR data were overwritten because there was a delay between an event and the flight crew recognizing that event to be a serious incident or accident or the flight continued to operate for more than 2 hours after the event took place.

Since Safety Recommendations [A-18-30](#) and [A-18-31](#) were issued, at least 14 additional investigations have been hampered by the lack of CVR data that were overwritten, including 7 serious runway incursions that occurred in 2023 and a rapid decompression that occurred on an Alaska Airlines 737-9 MAX flight on January 5, 2024 (see table).<sup>5</sup> In our 2018 report, the NTSB noted that CVRs are among the most valuable tools for accident investigation because they provide contemporaneous information on flight crew intentions and coordination as well other factors, such as procedural compliance, workload, fatigue, and situational awareness.<sup>6</sup> In the Alaska Airlines accident, CVR data would have been critical in analyzing the environment in the flight deck with respect to the rapid decompression, opening of the flight deck door, flight crew communication difficulties with cabin crew and air traffic control, and the presence of aural alerts.

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<sup>4</sup> For more information, see NTSB. 2018. *Taxiway Overflight, Air Canada Flight 759, Airbus A320-211, C-FKCK, San Francisco, California, July 7, 2017*, [AIR-18/01](#). See also [ntsb.gov](#) to find additional information in the [public docket](#) for this NTSB accident investigation (case number [DCA17IA148](#)).

<sup>5</sup> The NTSB previously shared 10 of these additional investigations with the FAA in the enclosure included with our April 5, 2023, letter from Jennifer Homendy, Chair, NTSB, to Mr. Billy Nolen, Acting Administrator, FAA, concerning the status of Safety Recommendations [A-18-30](#) and [A-18-31](#).

<sup>6</sup> *Extended Duration Cockpit Voice Recorders*, [ASR-18-04](#).

**Table.** NTSB investigations hampered by overwritten CVR data since 2018.

Date	NTSB Case Number	Location	Event Description
<b>January 5, 2024</b>	DCA24MA063	Portland, Oregon	Rapid decompression
<b>August 11, 2023</b>	OPS23FA010	San Diego, California	Runway incursion (delayed notification)
<b>February 27, 2023</b>	DCA23LA192	Boston, Massachusetts	Runway incursion (delayed notification)
<b>February 22, 2023</b>	DCA23LA185	Burbank, California	Runway incursion
<b>February 16, 2023</b>	DCA23LA179	Sarasota, Florida	Runway incursion (delayed notification)
<b>February 4, 2023</b>	DCA23FA149	Austin, Texas	Runway incursion
<b>January 23, 2023</b>	DCA23LA133	Honolulu, Hawaii	Runway incursion
<b>January 13, 2023</b>	DCA23LA125	New York, New York	Runway incursion
<b>August 6, 2022</b>	DCA22LA178	Atlanta, Georgia	Hard landing
<b>July 7, 2022</b>	WPR22LA284	San Francisco, California	Loss of control in flight
<b>February 15, 2020</b>	ENG20LA016	Sacramento, California	Electrical system malfunction
<b>December 18, 2019</b>	DCA20CA043	Disputanta, Virginia	Turbulence encounter
<b>November 6, 2019</b>	DCA20IA014	Atlanta, Georgia	Loss of control in flight
<b>June 15, 2019</b>	DCA19CA167	Newark, New Jersey	Hard landing

In addition to being used for accident investigations, CVR data may provide critical operational data to operators. The NTSB has recognized that an operator's nonpunitive review of all available safety data could provide objective information about how their flights are conducted and enhance safety.<sup>7</sup> The resulting safety enhancements could include improvements to training, policies, and procedures.

The NTSB is pleased the FAA is proposing to implement the action called for in Safety Recommendation [A-18-30](#) by requiring newly manufactured aircraft required to carry a CVR be equipped with a CVR that records the last 25 hours of aircraft operation. This action will help identify safety issues as well as harmonize US regulations with the intent of rules and standards already in place in Europe and at the International Civil Aviation Organization.<sup>8</sup> If a final rule is issued based on this NPRM, it will likely satisfy Safety Recommendation [A-18-30](#).

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<sup>7</sup> NTSB Safety Recommendation [A-10-29](#) called on the FAA to "require 14 Code of Federal Regulations Part 121, 135, and 91K operators to (1) routinely download and analyze all available sources of safety information, as part of their flight operational quality assurance program, to identify deviations from established norms and procedures; (2) provide appropriate protections to ensure the confidentiality of the deidentified aggregate data; and (3) ensure that this information is used for safety-related and not punitive purposes." This recommendation was classified Closed–Unacceptable Action on December 1, 2023. For more information, see NTSB. 2010. *Loss of Control on Approach, Colgan Air, Inc., Operating as Continental Connection Flight 3407, Bombardier DHC-8-400, N200WQ, Clarence Center, New York, February 12, 2009, [AAR-10/01](#)*.

<sup>8</sup> Full harmonization is not possible because the European Union Aviation Safety Agency and the International Civil Aviation Organization use aircraft weight-based standards while the FAA uses rule-based standards on the type of operation and number of passenger seats.

However, the NTSB is disappointed that the NPRM does not propose a similar requirement to retrofit existing airplanes, as recommended in Safety Recommendation [A-18-31](#). The service life of airplanes can exceed 40 years, thus, if not retrofitted, existing airplanes will fly for decades with the risk of having a CVR be overwritten after an incident or accident, resulting in potentially critical lost data. The NPRM cites excessive costs as justification not to include the existing fleet in the proposed regulations.

The NPRM indicates that a retrofit requirement would apply to 29,561 aircraft in the existing fleet but does not provide information about the makeup of aircraft included in that number. The NTSB limited the applicability of Safety Recommendation [A-18-31](#) to airplanes required to carry both a CVR and an FDR recognizing there would be a cost burden on the existing fleet. We estimate that Safety Recommendation [A-18-31](#) would apply to about 13,500 airplanes in the current fleet.<sup>9</sup> This estimate includes non-military, turbine-powered multiengine in-service airplanes on the US registry with 10 or more passenger seats, which is generally the cutoff where an FDR would be required. This is a conservative estimate as this population includes many airplanes capable of single-pilot operations that would not require a CVR.

The FAA's cost benefit analysis also does not address the number of airplanes that would be retired, scrapped, or otherwise removed from the US registry during the 5-year retrofit period envisioned in Safety Recommendation [A-18-31](#).<sup>10</sup> The NPRM cites additional costs, such as aircraft down time and labor hours to replace a CVR unit but acknowledges in the "Summary of the Regulatory Impact Analysis" section that "25-hour [CVRs] tend to match the older 2-hour variants in a manner that allows them to be swapped without much difficulty." The 5-year retrofit period would also allow operators the flexibility to schedule replacement of 2-hour CVRs during regular CVR maintenance, which would further reduce compliance costs. The NTSB urges the FAA to reassess its cost/benefit analysis taking these factors into account and reconsider its decision not to include existing airplanes required to carry both a CVR and an FDR in the NPRM.

In summary, the NTSB cannot fully support the proposed rule in its current form because we believe the FAA should include a requirement to retrofit existing airplanes, as recommended in Safety Recommendation [A-18-31](#). The NTSB contends the retrofit requirement would apply to less than half the number of airplanes the FAA estimates. Further, the 5-year retrofit period would allow operators to update the CVRs during regular CVR maintenance. Therefore, we believe the FAA has

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<sup>9</sup> The NTSB searched the [Cirium Fleets Analyzer](#), which is a commercial database that includes "data on over 450,000 unique aircraft records across over 770 aircraft types." We used the following criteria to search the database: US registered; in-service; turbofan, turbojet, or turboprop engines; 10 or more passenger seats; and owner not US military. We further manually filtered the results to remove single engine airplanes. This search was conducted on December 5, 2023.

<sup>10</sup> Safety Recommendation [A-18-31](#) was issued in October 2018 with a recommended compliance date of January 1, 2024.

inappropriately estimated the cost of retrofitting the existing fleet and urge the FAA to reconsider its position and issue a final rule applicable to both newly manufactured airplanes that must have a CVR as well as existing airplanes required to carry both a CVR and an FDR.

Thank you for the opportunity to provide comments.

Sincerely,

[Original Signed]

Jennifer Homendy  
Chair