Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington DC 20515

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April 1, 2022

SUMMARY OF SUBJECT MATTER

TO: Members of Congress, Committee on Transportation and Infrastructure
FROM: Staff, Committee on Transportation and Infrastructure
RE: Hearing on "National Transportation Safety Board Reauthorization."

PURPOSE

The Committee on Transportation and Infrastructure will hold a hearing on Wednesday, April 6, 2022, at 10:00 a.m. ET to discuss National Transportation Safety Board (NTSB or Board) reauthorization. The hearing will take place in 2167 Rayburn House Office Building and via Zoom. The Subcommittee on Coast Guard and Maritime Transportation recently held a hearing addressing small vessel safety.[1] Thus, this hearing will focus on NTSB's reauthorization proposal and related transportation safety issues. The Committee will hear testimony from the Chair of the NTSB, the Honorable Jennifer Homendy.

BACKGROUND

Introduction

The 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, pipeline, and commercial space.[2] The agency establishes the facts and circumstances and determines the probable cause of the accidents it investigates, and issues safety recommendations aimed at preventing future accidents from occurring.[3] In addition, it carries out special studies concerning transportation safety and coordinates the resources of the federal government and other organizations to assist victims and their family members impacted by

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[1] Subcommittee on Coast Guard and Maritime Transportation Hearing, March 21, 2022, "A Review of Coast Guard Efforts to Improve Small Passenger Vessel Safety," information and videorecording available at: https://transportation.house.gov/committee-activity/hearings/a-review-of-coast-guard-efforts-to-improve-small-passenger-vessel-safety.

[2] NTSB, Fiscal Year 2023 Budget Request, March 28, 2022, at 4, Available at: https://www.ntsb.gov/about/reports/Documents/Fiscal%20Year%202023%20Budget%20Request.pdf.

[3] *Id.*

transportation disasters. It also conducts safety research focused on broader safety questions and topic areas.[4]

The NTSB also serves as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and United States Coast Guard (Coast Guard), and it also adjudicates appeals of civil penalty actions taken by the FAA.[5] The NTSB was last reauthorized in the *FAA Authorization Act of 2018*, and its current authorization expires at the end of this fiscal year 2022.[6]

History of the NTSB

In 1967, Congress consolidated all transportation agencies into a new U.S. Department of Transportation (DOT) and established the NTSB as an independent agency placed within the DOT for administrative purposes.[7] In creating the NTSB, Congress envisioned that a single organization with a clearly defined mission could more effectively promote a higher level of safety in the transportation system than the individual modal agencies working separately.[8] Since 1967, the NTSB has investigated accidents in the aviation, highway, marine, pipeline, and railroad modes, as well as accidents related to the transportation of hazardous materials.

In 1974, Congress reestablished the NTSB as a separate entity from the DOT.[9] Because the DOT has broad operational and regulatory responsibilities that affect the safety, adequacy, and efficiency of the transportation system, and transportation accidents may suggest deficiencies in that system, the NTSB's independence was deemed necessary for proper oversight.[10] This allows the NTSB to conduct investigations and make recommendations from a completely objective and independent viewpoint.[11]

In 1996, Congress assigned the NTSB the additional responsibility of coordinating federal assistance to families of aviation accident victims. While originally established to provide assistance following major aviation accidents, the program has been expanded by Congress to provide assistance in all modes of transportation on a case-by-case basis. In 2008, Congress directed NTSB to provide assistance to families of passengers in fatal rail passenger accidents.[12]

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[4] *Id.*
[5] *Id.*
[6] Pub. L. No. 115-254, Division C (2018), Available at: https://uscode.house.gov/statutes/pl/115/254.pdf.
[7] The aviation investigation function of the NTSB originated in the Air Commerce Act of 1926, in which the U.S. Congress charged the U.S. Department of Commerce with investigating the causes of aircraft accidents. The aircraft accident responsibility was later given to the Civil Aeronautics Board's Bureau of Aviation Safety, when it was created in 1940.
[8] Senate Report No. 93-1192 (1974), *Transportation Safety Act of 1974*, at p. 14, Available at https://www.fordlibrarymuseum.gov/library/document/0055/12006477.pdf.
[9] Independent Safety Board Act of 1974, Pub. Law 93-633 (1974).
[10] Senate Report No. 93-1192 (1974), Transportation Safety Act of 1974, at p. 14-17, Available at https://www.fordlibrarymuseum.gov/library/document/0055/12006477.pdf.
[11] CRS, The National Transportation Safety Board (NTSB): Background and Possible Issues for Reauthorization and Oversight, R44587, Aug. 10, 2016, at 1, Available at https://www.crs.gov/reports/pdf/R44587.
[12] Pub. L. No. 110-432, Division A, Title V, Section 501.

Since its inception, the NTSB has investigated more than 152,000 aviation accidents and thousands of surface transportation accidents.[13] NTSB investigators travel throughout the country and internationally to investigate significant accidents and develop factual records and safety recommendations. To date, the NTSB has issued over 15,000 safety recommendations to more than 2,400 recipients.[14]

Most Wanted List

The NTSB's Most Wanted List of Transportation Safety Improvements highlights safety-critical actions that DOT modal administrations, the Coast Guard, and others need to take to help prevent accidents and save lives.[15]

NTSB's Most Wanted List for 2021-2022 includes the following recommendations, organized by NTSB modal office:

I. Aviation:
- Require and Verify the Effectiveness of Safety Management Systems in all Revenue Passenger-Carrying Aviation Operations
- Install Crash-Resistant Recorders and Establish Flight Data Monitoring Programs

II. Highway:
- Implement a Comprehensive Strategy to Eliminate Speeding-Related Crashes
- Protect Vulnerable Road Users through a Safe System Approach
- Prevent Alcohol- and Other Drug-Impaired Driving
- Require Collision-Avoidance and Connected-Vehicle Technologies on all Vehicles
- Eliminate Distracted Driving

III. Marine:
- Improve Passenger and Fishing Vessel Safety

IV. Rail, Pipeline, and Hazardous Materials:
- Improve Pipeline Leak Detection and Mitigation
- Improve Rail Worker Safety

More detail on each of these items, including accidents that illustrate why each change is needed and information about how long the NTSB has sought the change, can be found on NTSB's website.[16]

The *National Transportation Safety Board Reauthorization Act of 2018* included a provision for the U.S. Government Accountability Office (GAO) to examine NTSB's methodology for evaluating and selecting recommendations for inclusion in the Most Wanted List. GAO issued its revised report on March 19, 2020.[17] The report discusses: (1) NTSB's methodology for developing its Most Wanted

[13] NTSB, Fiscal Year 2023 Budget Request, March 28, 2022, at 7, Available at: https://www.ntsb.gov/about/reports/Documents/Fiscal%20Year%202023%20Budget%20Request.pdf.
[14] *Id.*
[15] NTSB's 2021-2022 Most Wanted List is available at: https://www.ntsb.gov/Advocacy/mwl/Pages/default.aspx.
[16] *Id.*
[17] GAO Report GAO-20-395, "National Transportation Safety Board: More Detail Could Increase the Understanding of Selections for the Most Wanted List of Transportation Safety Improvements" March 2020, Available at: https://www.gao.gov/assets/gao-20-395.pdf.

List and (2) how NTSB addressed statutory requirements and how its methodology aligned with components for systematic decision-making, among other objectives. GAO reviewed NTSB documentation for its process of selecting issues for the Most Wanted List.[18] GAO also interviewed NTSB officials to understand the rationale behind the selection methodology and how the process was applied.[19] GAO compared the methodology to essential components for systematic decision-making and the statutory requirement that NTSB publish a publicly available methodology report that describes NTSB's consideration of key elements.[20]

GAO provided two recommendations based on this examination:

1. The Chairman of the Board should require the Safety Recommendation and Communication team to fully document its evaluations when assessing items to propose for Most Wanted List consideration; and
2. The Chairman of the Board should take steps to publicly and fully communicate the selection rationale, such as including why NTSB believes an issue is "ripe for action" to its documentation on its website.[21]

NTSB agreed with both recommendations, and GAO has since determined that the Board has completed recommendation number two.[22] However, the first recommendation is still open, and GAO reports that as of February 2022, the Board is still in the process of formally establishing the criteria it uses to establish the most wanted list.[23]

Completing Investigations and Reports

Following its investigations, the NTSB issues reports that detail the accident investigated, identify cause or probable cause, and often include recommendations. The prompt completion of these reports informs the public, Congress, regulators, and the regulated community about transportation safety issues with an intended goal of preventing reoccurrence. The average length of time to conclude these investigation reports vary across the NTSB's offices that investigate accidents in the different modes. The tables below show the number of reports approved by the NTSB and the average time it takes to complete these reports.

[18] *Id.*
[19] *Id.*
[20] *Id.*
[21] *Id.*
[22] GAO, National Transportation Safety Board: More Detail Could Increase the Understanding of Selections for the Most Wanted List of Transportation Safety Improvements [Reissued with revisions on Mar. 19, 2020.], https://www.gao.gov/products/gao-20-395.
[23] *Id.*

Number of Board Approved Accident and Incident Investigation Reports

Report Year	Aviation	Highway	Marine	RPH				All Offices Total
				Hazmat	Pipeline	Railroad	RPH Total	
2016	2	6	2			3	3	13
2017	4	6	4		1	8	9	23
2018	3	6	5			7	7	21
2019	2	6	3	1	2	5	8	19
2020	5	7	6			5	5	23
5-year Total	**16**	**31**	**20**	**1**	**3**	**28**	**32**	**99**

Average Time from Event to Release of Board Approved Accident and Incident Investigation Reports (Months)

Report Year	Aviation	Highway	Marine	RPH				All Offices Total
				Hazmat	Pipeline	Railroad	RPH Total	
2016	15.0	20.1	18.5			18.7	18.7	18.7
2017	21.2	14.1	15.8		20.5	26.1	25.5	20.1
2018	16.6	20.8	17.9			22.6	22.6	20.1
2019	24.1	16.0	18.6	19.9	22.5	23.6	22.9	20.2
2020	18.4	19.5	21.0			28.6	28.6	21.6
5-year Average (Months)	**19.1**	**18.1**	**18.6**	**19.9**	**21.8**	**24.4**	**24.1**	**20.3**

Source: Letter from Former NTSB Chair Sumwalt dated April 30, 2021.

NTSB Reauthorization Proposal

On March 1, 2022, NTSB formally transmitted a reauthorization proposal to Congress.[24] The proposal includes three titles: I. Ensuring Readiness for Our Mission, II. Enhancing Accountability and Improving Processes and Products, and III. Strengthening Diversity, Equity, Inclusion, and Accessibility. The five-year bill requests authorization of appropriations for fiscal years (FY) 2023 through 2027. This bill would authorize $129.3 million in FY 2023, $145 million for FY 2024, $155 million for FY 2025, $165 million for FY 2026, and $175 million for FY 2027. The legislative proposal includes several workforce development initiatives, changes and clarifications to investigative authorities for railroad and highway accidents, and changes to recommendation response requirements for the U.S. Coast Guard, among other items. The NTSB's full reauthorization proposal and section-by-section summary are included as appendices to this document.

Commercial Space Transportation Accident Investigation

[24] Letter from NTSB Chair Jennifer Homendy to Speaker of the House Nancy Pelosi (Mar. 1, 2022) (on file with Committee).

A. History of NTSB Involvement in Commercial Space Accident Investigations

The NTSB has led or supported commercial space accident investigations for nearly 30 years and acted as the lead agency in conducting two major space vehicle investigations. In 1993, the NTSB investigated the procedural anomaly that occurred during the launch of an Orbital Sciences Corporation Pegasus expendable launch vehicle—the launch was canceled by the National Aeronautics and Space Administration (NASA) range safety officer, only to then be reactivated independently by the Orbital Sciences Corporation (Orbital Sciences) test coordinator.[25] In its final report, the NTSB issued 17 safety recommendations to the Department of Transportation (DOT), NASA, and Orbital Sciences.[26] In 2014, the NTSB investigated the accident of the SpaceShipTwo reusable suborbital spaceplane that broke up during a rocket-powered test flight, killing the co-pilot.[27] The NTSB issued a total of ten recommendations to the Federal Aviation Administration's (FAA) Office of Commercial Space Transportation (AST) and the Commercial Spaceflight Federation (CSF).[28]

In addition, the NTSB's Office of Aviation Safety (OAS) investigators have assisted NASA and Congressional investigative boards with the investigations of two space shuttle accident mishaps (1986; 2003) and assisted NASA with the investigation of the 2004 Genesis Spacecraft reentry accident.[29] More recently, NTSB investigators have observed or taken part in several operator-led mishap investigations, including the October 2014 Orbital Science ATK Antares engine failure shortly after liftoff; the June 2015 launch failure of the Space X CRS-7 mission; the September 2016 pad explosion of the SpaceX Falcon 9 with the Amos-6 communications satellite; and the April 2019 SpaceX Dragon explosion that occurred during a ground test.[30]

B. Current Statutory Authority

The NTSB is authorized to investigate any launch or reentry accidents and other certain incidents through its general authority under section 1131 of title 49 of the United States Code, which states that the NTSB shall investigate "any other accident related to the transportation of individuals or property when the Board decides the accident is catastrophic."[31] The phrase "when the Board decides" gives the agency broad discretion to determine which accidents the agency investigates.[32] In addition to NTSB's authority to investigate catastrophic transportation accidents, the statute also provides the agency with the authority to investigate (1) accidents involving problems of a recurring character and (2) accidents where the investigation would carry out specific authorities explicitly granted to the NTSB.[33] The NTSB has also conducted an analysis on Congressional intent, which supported the forgoing assumption of authority.[34]

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[25] NTSB, *Commercial Space Launch Incident, Launch Procedure Anomaly, Orbital Sciences Corporation, Pegasus/SCD-1,* Rpt. No. SIR 93/02 (Washington, DC: NTSB 1993).
[26] *Id.*
[27] NTSB, *In-Flight Breakup During Test Flight, Scaled Composites SpaceShipTwo, N339SS, Near Koehn Dry Lake, CA, Oct. 31, 2014,* Rpt. No. AAR 15/02 (Washington, DC: NTSB 2015).
[28] *Id.*
[29] Joseph M. Sedor, *Do We Need An Annex 13 for Commercial Space Accidents*, ISASI Forum 4-7, (Jan. – Mar. 2021).
[30] *Id.*; *see also* Jason Rhian, *SpaceX Reveals Cause of Crew Dragon Explosion*, Spaceflight Insider (Jul 15, 2019).
[31] 49 USC 1131(a)(1)(F).
[32] *Id.*
[33] *Id.*
[34] "The plain meaning of the phrase 'related to transportation,' requires that accidents covered by section F have a rational relationship to transportation. Congress explicitly has addressed whether commercial space activity should be

C. Memoranda of Agreement and Understanding

In addition to NTSB's statutory authority, there was the 1985 addition of Appendix H (revised: 1999) to the 1975 Reimbursable Memorandum of Agreement (MOA) between the NTSB and DOT.[35] Appendix H established the relationships, notification procedures, coordination requirements, and reporting responsibilities of the NTSB and AST in connection with accident investigations for commercial space launch activities. Moreover, the MOA delineated that the NTSB would investigate commercial space launch accidents resulting in: (1) a mishap when any portion of a commercial space vehicle or payload impacts outside the expected launch failure crash zone; or (2) a fatality or serious injury to a person not associated with the launch activities; or (3) damage greater than $25,000 to property not associated with the launch activities.[36] The MOA also stated that nothing in the agreement should be read to impair the NTSB's authority to investigate any other commercial space launch accident which, in the judgement of the Board, is subject to section 1131(a)(1)(F) of title 49, United States Code.

Finally, in addition to adhering to the terms of the MOAs, the NTSB's 2004 memorandum of understanding (MOU) with the FAA and the U.S. Air Force established the relationships among agencies during space launch accidents and provided a guide to the exchange of information and participation in accident investigations.[37]

D. Commercial Space Accident Rulemaking

On November 16, 2021, the NTSB issued a notice of proposed rulemaking (NPRM) regarding commercial space accident investigations to update and ensure the transparency of the agency's commercial space safety investigative authority.[38] In issuing the NPRM, the NTSB noted that—

(1) commercial space launch is a unique mode of transportation; and

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considered transportation when it determined that 'space *transportation* ... is an important element of the transportation system of the United States ....' 51 U.S.C. § 50901(a)(8) (emphasis added). The NTSB also notes that the FAA's [AST], established by 51 U.S.C. § 50921, has promulgated regulations governing commercial space launches. These regulations set forth definitions of accidents, incidents, and mishaps, with regard to launch and reentry vehicles, as well as a set of definitions specifically governing the regulation of such vehicles. 14 C.F.R. § 401.5. The involvement of the FAA in commercial space launch activities signifies that vehicles used in commercial space launches fall within the purview of the FAA's authority during specified periods of time, either because those activities are 'transportation' or because they are so closely related to transportation that FAA oversight is necessary. In this regard, the involvement of the FAA's AST is both logical and reasonable: vehicles involved in commercial space launches must travel through the national airspace, wherein launches would need to be coordinated with air transportation systems to avoid interference with air traffic control as well as other aircraft." (*See* Appendix A in NTSB, *In-Flight Breakup During Test Flight, Scaled Composites SpaceShipTwo, N339SS, Near Koehn Dry Lake, CA, Oct. 31, 2014,* Rpt. No. AAR 15/02 (Washington, DC: NTSB 2015)).

[35] Reimbursable Mem. of Agreement between the NTSB & DOT, Appendix H (revised: 1999), available at: https://www.faa.gov/space/legislation_regulation_guidance/media/mou_space_launch_accidents.pdf.

[36] *Id.*

[37] Mem. of Understanding between NTSB, Dept. of AF, & FAA re: Space Launch Accidents (2004), available at: https://www.faa.gov/space/legislation_regulation_guidance/media/mou_space_launch_accidents.pdf.

[38] NPRM Codifying NTSB's Commercial Space Safety Investigative Authority by Creating Subpart F, 86 Fed. Reg. 63324 (proposed Nov. 16, 2021) (to be codified at 49 C.F.R. 831) available at: https://www.federalregister.gov/documents/2021/11/16/2021-24766/commercial-space-investigations.

(2) the unique investigatory procedures needed for commercial space accidents and incidents are distinct enough from other modes of transportation to warrant codifying the differences.[39]

Thus, the NPRM creates a separate Subpart F for Commercial Space Investigations and addresses notification requirements following an accident or incident, preservation of wreckage and records, relationships with other federal agencies, and the treatment of investigative information, among other things.[40]

The NTSB maintains that by transitioning and updating the information from the MOA and MOU to Subpart F, the commercial space industry will have more clarity on how and when the NTSB would initiate an investigation of a commercial space mishap. The NTSB also maintains that while there is very little change to the procedures themselves, the NPRM finally allows the commercial space industry the opportunity to provide feedback on the NTSB investigative process via the rulemaking process. [41]

E. Commercial Space Transportation Safety Act

In the 116th Congress, Aviation Subcommittee Ranking Member Garret Graves—along with Chair DeFazio, Ranking Member S. Graves, Chair Larsen, and Representative Davids as original cosponsors—introduced H.R. 1562, the *Commercial Space Transportation Safety Act of 2019*. The bill would have codified the NTSB's authority to investigate commercial space accidents into Title 49. Specifically, it amended 49 USC 1131(a)(1) to clarify the NTSB's ability to investigate commercial space launch accidents, when accidents involve—

- Impacts outside the hazard-zone;
- Fatalities on board the launch vehicle or otherwise; or
- Substantial damage not affiliated with the launch site and away from the launch site.

NTSB Aviation Accident Investigations

The NTSB estimates there are approximately 1,750 domestic aviation accidents and incidents annually it is responsible for investigating.[42] As of May 2020, NTSB had investigated over 152,000 aviation accidents and incidents in its history.[43]

On domestic U.S. part 121 airline flights, there has only been one commercial airline passenger fatality in more than 90 million flights in over a decade. [44] Prior to that single passenger

[39] *Id.*
[40] *Id.*
[41] Letter from Jennifer Homendy, Chair, NTSB, to Rep. Lucas, R.M. of House Comm. on SST (Dec. 3, 2021) (on file with Cmte Staff).
[42] NTSB, Office of Aviation Safety, available at https://www.ntsb.gov/about/organization/AS/Pages/office_as.aspx.
[43] NTSB, Fiscal Year 2023 Budget Request, March 28, 2022, at 7, Available at: https://www.ntsb.gov/about/reports/Documents/Fiscal%20Year%202023%20Budget%20Request.pdf.
[44] On April 17, 2018, Southwest Airlines Flight 1380 experienced an engine failure, resulting in loss of an engine inlet and cowling. Fragments struck the airplane's fuselage and damaged a cabin window, killing one passenger onboard.

fatality in April 2018, the last fatal domestic commercial airline accident occurred in February 2009, when Colgan Air Flight 3407 crashed near Buffalo, New York, killing all 49 onboard and one person on the ground.[45]

The NTSB's participation in any foreign accident investigation is conducted in accordance with the Chicago Convention of the International Civil Aviation Organization's (ICAO) Standards and Recommended Practices (SARPS), provided in Annex 13, which entitles the State of Design and Manufacture of the aircraft involved in the accident to appoint an accredited representative to participate in the investigation.[46] The NTSB participates in aviation accidents involving any aircraft operated by or designed, manufactured, or registered to a U.S. company.[47] In these cases, "upon receiving ICAO notification of the accident or serious incident, the NTSB designates a US-accredited representative and appoints technical advisors to carry out the obligations, receive the entitlements, provide consultation, and receive safety recommendations from the state of occurrence."[48]

A. NTSB Aviation Accident Investigation Process

The NTSB's OAS reports to NTSB's Office of the Managing Director.[49] The OAS is responsible for:

> 1. Investigating all civil domestic air carrier, commuter, and air taxi accidents; in-flight collisions; fatal and nonfatal general aviation accidents; and certain public-use aircraft accidents,
> 2. Participating in the investigation of major airline crashes in foreign countries that involve U.S. carriers or U.S.-manufactured or -designed equipment to fulfill U.S. obligations under International Civil Aviation Organization (ICAO) agreements, and
> 3. Conducting investigations of safety issues that extend beyond a single accident to examine specific aviation safety problems from a broader perspective.[50]

The OAS proposes probable causes for domestic aviation accidents and incidents to the NTSB Board for approval and works with other NTSB offices to formulate recommendations.[51] Office of Aviation staff are located throughout the country to maintain closer proximity to potential aviation accident sites.[52] Within the Office of Aviation are the following divisions: Major

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NTSB, Fiscal Year 2022 Budget Request, May 27, 2021, at 35-36, Available at: https://www.ntsb.gov/about/reports/Documents/NTSB-fy22-budget-request.pdf.

[45] *Id.*

[46] NTSB, *2020 Annual Report to Congress*, 2021, at 21, Available at: https://www.ntsb.gov/about/reports/Documents/NTSB-2020-ARC.pdf.

[47] CRS, The National Transportation Safety Board (NTSB): Background and Possible Issues for Reauthorization and Oversight, R44587, Aug. 10, 2016, at 3-4, Available at https://www.crs.gov/reports/pdf/R44587.

[48] NTSB, *2020 Annual Report to Congress*, 2021, at 21, Available at: https://www.ntsb.gov/about/reports/Documents/NTSB-2020-ARC.pdf.

[49] NTSB, NTSB Organization, https://www.ntsb.gov/about/organization/Pages/default.aspx.

[50] NTSB, Office of Aviation Safety, https://www.ntsb.gov/about/organization/AS/Pages/office_as.aspx.

[51] *Id.*

[52] *Id.*

Investigations Division, Operational Factors Division, Aviation Engineering Division, Human Performance/Survival Factors Division, and the Writing and Editing Division.[53]

Conclusion

The NTSB plays a critically important role in transportation safety by conducting independent investigations into the causes and critical factors behind accidents and issuing recommendations to prevent reoccurrence of accidents. This hearing will address the NTSB's reauthorization proposal and other related issues.

[53] NTSB, *Fiscal Year 2022 Budget Request*, May 27, 2021, at 29-31, Available at: https://www.ntsb.gov/about/reports/Documents/NTSB-fy22-budget-request.pdf.

WITNESS LIST

The Honorable Jennifer Homendy
Chair
National Transportation Safety Board