National Transportation Safety Board Fiscal Year 2016 Budget Request





National Transportation Safety Board



National Transportation Safety Board

Washington, D.C. 20594

February 2, 2015

The Honorable Joseph R. Biden, Jr. President United States Senate Washington, DC 20510

The Honorable John A. Boehner Speaker United States House of Representatives Washington, DC 20515

Dear Mr. President and Mr. Speaker:

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—highway, marine, railroad, and pipeline. We determine the probable cause of accidents and issue safety recommendations to prevent future accidents. These recommendations are the focal point of our efforts to improve the safety of the nation's transportation system and are issued to agencies, industry, and other organizations in a position to effect change.

In addition to our investigatory responsibility, the NTSB conducts safety studies and evaluates the effectiveness of other government programs for preventing transportation accidents. We also coordinate public and private efforts for the survivors and families of victims in the wake of transportation disasters in all modes. Additionally, the NTSB serves as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and the US Coast Guard, as well as the appeals of civil penalty actions taken by the FAA.

The enclosed budget submission represents the President's fiscal year (FY) 2016 request of \$105.2 million. This level funds 423 full-time equivalents (FTE). The submission is an increase of \$1.3 million above the FY 2015 enacted level of \$103.9 million and allows NTSB to preserve its workforce and fund the President's estimated pay raise of 1 percent.

We have many challenges ahead to keep pace with advances in technology, and this request helps us to maintain a highly skilled workforce. Equally important is the sound financial management upon which the NTSB bases critical decisions. We have shown this yet again with our 12 consecutive "clean audit opinions" for our FY 2014 consolidated financial statements.

Sincerely, mistrolic Hant

Christopher A. Hart Acting Chairman

Enclosure

CC:

Chairman Subcommittee on Transportation, HUD, and Related Agencies Committee on Appropriations US House of Representatives

Ranking Democratic Member Subcommittee on Transportation, HUD, and Related Agencies Committee on Appropriations US House of Representatives

Chairman Subcommittee on Transportation, HUD, and Related Agencies Committee on Appropriations US Senate

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490 L'Enfant Plaza, S.W. Washington, D.C. 20594

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ACRONYMS AND ABBREVIATIONS TAB

ACRONYMS AND ABBREVIATIONS

ADMS	accident data management system
AS	NTSB Office of Aviation Safety
ASI	aviation safety investigator
BART	Bay Area Rapid Transit
BNSF	Burlington Northern Santa Fe Railway
CFO	NTSB Office of the Chief Financial Officer
CFR	Code of Federal Regulations
CIO	NTSB Office of the Chief Information Officer
CN	Canadian National Railway
CNS	correspondence control, notation, and safety recommendations system
Conrail	Consolidated Rail Corporation
CSX	CSX Transportation Company
CTA	Chicago Transit Authority
DOT	US Department of Transportation
EEO	Equal Employment Opportunity
EEODI	NTSB Office of Equal Employment Opportunity, Diversity, and Inclusion
FAA	Federal Aviation Administration
FMCSA	Federal Motor Carrier Safety Administration
FOIA	Freedom of Information Act
FRA	Federal Railroad Administration
FTE	full-time equivalent
FV	fishing vessel
FY	fiscal year
GA	general aviation

GAO	Government Accountability Office
GSA	General Services Administration
HMCS	Halifax (modernization)-class frigate
HS	NTSB Office of Highway Safety
ICAO	International Civil Aviation Organization
ICW	intracoastal waterway
IIC	investigator-in-charge
IMC	instrument meteorological conditions
IMO	International Maritime Organization
IT	information technology
LIDAR	light detection and ranging
MS	NTSB Office of Marine Safety
MV	marine vessel
MWL	Most Wanted List
NA	not applicable
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
OC	NTSB Office of Communications
OMB	Office of Management and Budget
OPM	Office of Personnel Management
OSV	offshore supply vessel
PHMSA	Pipeline and Hazardous Materials Safety Administration
РТС	positive train control
RPH	NTSB Office of Railroad, Pipeline and Hazardous Materials Investigations
SEES	staff entry and exit system
SSA	Safe Skies for Africa
TDA	NTSB Transportation Disaster Assistance Division

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TMS	talent management system
TSB	Transportation Safety Board of Canada
UP	Union Pacific Railroad
UPS	United Parcel Service
USACE	US Army Corps of Engineers
U.S.C.	United States Code
USCG	US Coast Guard
UTV	uninspected towing vessel
VFR	visual flight rules
VOIP	voice-over Internet protocol

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EXECUTIVE SUMMARY TAB

EXECUTIVE SUMMARY

The National Transportation Safety Board (NTSB) is an independent federal agency responsible for investigating and determining the probable cause of every civil aviation accident and significant accidents in other modes of transportation. With this vested responsibility, the NTSB develops recommendations to prevent future accidents or reduce their effects in terms of loss of life, injury, or damage to property.

The NTSB also conducts safety studies and prepares safety reports based on analyses of transportation accident and incident data. The results of these studies are used to determine factors common to a series of events and to identify safety improvements or evaluate the worth of transportation-related devices or policy. Safety studies enhance the NTSB's corporate knowledge, enabling it to better perform its transportation safety mission.

The FY 2016 passback level of \$105.2 million will support 423 full-time equivalents (FTE). This funding level represents an increase of \$1.3 million above the FY 2015 enacted level of \$103.9 million and allows us to maintain our FTE staff. This increase is a gain for a small agency that is overwhelmingly salary based and would normally have to cut staffing levels to absorb any funding decreases.

The funding set forth in this request avoids any downward trajectory of staff and continues to build on a solid succession plan that ensures a highly skilled workforce. The request includes funds for the President's 1 percent estimated pay raise and a 1.6 percent non-pay inflation increase expected in General Services Administration (GSA) space rent, Federal Protective Service security charges, shared services, and other activities critical to the mission.

This report highlights our many accomplishments in FY 2014. The NTSB investigated 1,326 domestic aviation accidents, launching to over 190 of those accidents – and investigated 22 other major accidents across modes. The Board adopted 16 major reports and 41 accident briefs, and produced or held 10 special studies, forums, and related events. Additionally, our Research and Engineering laboratories read out more than 505 recorders, wrote some 126 materials reports, and produced 29 vehicle performance products and studies. We continue to strive to be the world's premier accident investigation agency and to be the national voice promoting safety for the traveling public.

MISSION AND ORGANIZATION OVERVIEW TAB

MISSION AND ORGANIZATION OVERVIEW

Since its creation in 1967 as an accident investigation agency within the newly created US Department of Transportation (DOT), the NTSB has focused on determining the probable cause of transportation accidents and incidents and formulating recommendations to improve transportation safety. The NTSB authority currently extends to the following types of accidents:

- All US civil aviation accidents and certain public aircraft accidents.
- Selected highway accidents.
- Railroad accidents involving passenger trains or select freight train accidents that result in fatalities or significant property damage.
- Major marine accidents and any marine accident involving both a public and a nonpublic vessel.
- Pipeline accidents involving fatalities, substantial property damage, or significant environmental damage.
- Selected accidents resulting in the release of hazardous materials in any mode of transportation.
- Selected transportation accidents that involve problems of a recurring nature or are catastrophic.

In 1974, Congress passed the Independent Safety Board Act, which severed the NTSB ties to the DOT and authorized the agency to take the following additional actions:

- Evaluate the effectiveness of government agencies involved in transportation safety.
- Evaluate the safeguards used in the transportation of hazardous materials.
- Evaluate the effectiveness of emergency responses to hazardous material accidents.
- Conduct special studies on safety problems.
- Maintain the official US census of aviation accidents and incidents.
- Review appeals from airmen, mechanics, and repairmen who have been assessed civil penalties by the Federal Aviation Administration (FAA).
- Review appeals from airmen and merchant seamen whose certificates have been revoked or suspended by the US Coast Guard (USCG).

The NTSB also leads US teams assisting in airline accident investigations conducted by foreign authorities under the provisions of International Civil

Aviation Organization (ICAO) agreements. In 1996, the Aviation Disaster Family Assistance Act further assigned to the NTSB the responsibility of coordinating federal government resources and other organizations to support local and state authorities and the airlines in assisting aviation disaster victims and their families following accidents in which there is a major loss of life. A subsequent presidential memorandum directed federal agencies to support the NTSB when it assumes the same responsibilities for major surface transportation accidents. The rail passenger disaster family assistance provisions of the Rail Safety Improvement Act of 2008 assigned similar responsibilities to the NTSB for rail passenger disasters resulting in a major loss of life, regardless of the cause or suspected cause.

To date, the NTSB has investigated more than 141,050 aviation accidents and thousands of surface transportation accidents. On call 24 hours a day, 365 days a year, NTSB investigators have traveled throughout the United States and to every corner of the world. Because of this dedication, the NTSB is recognized as the world's leading accident investigation agency.

The NTSB has issued more than 14,130 safety recommendations to more than 2,300 recipients in all transportation modes. Since 1990, we have published a list of "Most Wanted" transportation safety improvements to highlight safetycritical actions that the DOT modal administrations, the USCG, the states, and other entities should take to help prevent accidents and save lives. The NTSB does not have the authority to regulate transportation equipment, personnel, or operations—or to initiate enforcement action. However, over the last 5 years, more than 72 percent of our transportation safety recommendations have been implemented. Many safety features currently incorporated into airplanes, helicopters, automobiles, commercial motor vehicles, trains, pipelines, and marine vessels had their genesis in these recommendations.

The five-member Board is composed of appointees nominated by the president and confirmed by the Senate. A Chairman (who is designated by the president and subject to Senate confirmation) serves as the chief executive officer of the NTSB. The president also designates one of the members as Vice Chairman.

The NTSB headquarters office is located in Washington, DC. We also have investigators located in offices in Ashburn, Virginia; Denver, Colorado; Anchorage, Alaska; and Federal Way, Washington. The NTSB has a training center in Ashburn, Virginia.

Member Member Chairman Vice Chairman Member Office of the Managing Office of General Office of the Chief Equal Employment Policy and **Opportunity**, **Diversity** Director Counsel **Financial Officer** Direction and Inclusion Director **Office of Communications** Communications Aviation Safety **Office of Aviation Safety** Highway Safety Office of Highway Safety Marine Safety Office of Marine Safety Railroad, Pipeline and Office of Railroad, Pipeline and Hazardous Materials Investigations Hazardous Materials Investigations Office of Research and Engineering Research and Engineering Training Center **Training Center** Administrative Office of Administrative Law Judges Law Judges Information Technology Office of the Chief Information Officer and Services Office of Administration Administrative Support Services

National Transportation Safety Board Organization and Program Structure

Resource Requirements

Resource Requirements

Appropriation Language

Salaries and Expenses – 950310

"For necessary expenses of the National Transportation Safety Board, including hire of passenger motor vehicles and aircraft; services as authorized by 5 U.S.C. [United States Code] 3109, but at rates for individuals not to exceed the per diem rate equivalent to the rate for a GS 15; uniforms or allowances therefore, as authorized by law (5 U.S.C. 5901-5902), \$105,170,000 of which not to exceed \$2,000 may be used for official reception and representation expenses. The amounts made available to the National Transportation Safety Board in this Act include amounts necessary to make lease payments on an obligation incurred in FY 2001 for a capital lease."

Emergency Fund - 950311

The Administration is not requesting new funding for the Emergency Fund for FY 2016.

Identifi	cation Code: 95-0310-0-1-407	FY 2014	FY 2015	FY 2016
<u>Obligatio</u>	ons by Program Activity:			
0001	Policy and Direction	13,567	14,683	14,859
0002	Communications	5,887	6,398	6,471
0003	Aviation Safety	29,980	32,835	33,213
0004	Information Technology and Services	7,855	6,659	6,730
0005	Research and Engineering	13,419	12,478	12,616
0006	Training Center	892	942	952
0007	Administrative Law Judges	2,229	2,547	2,575
8000	Highway Safety	6,015	6,518	6,594
0009	Marine Safety	3,721	4,129	4,177
0010	Railroad, Pipeline, and Hazardous Materials	7,296	8,424	8,523
0011	Administrative Support Services	8,145	8,368	8,460
0091	Direct Program Activities, Subtotal	99,006	103,981	105,170
0100	Sub-Total Direct Obligations	99,006	103,981	105,170
0806	Training Center	533	1,000	1,000
0811	Subleases	577	600	600
0899	Total reimbursable obligations	1,109	1,600	1,600
0900	Total New Obligations	100,116	105,581	106,770
<u>Budgeta</u>	ry Resources:			
1000	Unobligated balance brought forward, Oct 1	5,563	5,563	5,563
1050	Unobligated balance(total)	5,563	5,563	5,563
	Budget Authority:			
1100	Appropriation, discretionary	103,027	103,981	105,170
1160	Appropriation (total discretionary)	103,027	103,981	105,170
1700	Spending authority from offsetting collections	2,000	1,600	1,600
	Spending authority from offsetting			
1750	collections,dis (total)	2,013	1,600	1,600
1900	Budget authority (total)	105,040	105,581	106,770
1930	Total budgetary resources available	110,603	111,144	112,333

Program and Financing Schedule (\$000s)

Memor	<u>andum (non-add) entries:</u>	FY2014	FY2015	FY2016
1940	Unobligated balance expiring	-4,141	0	0
1941	Unexpired unobligated balance, end of year	5,563	5,563	5,563
Change	e in Obligated Balance:			
3000	Unpaid obligations, brought forward Oct 1 (gross)	17,399	17,899	18,699
3010	Obligations incurred, unexpired accounts	100,116	105,581	106,770
3011	Obligations incurred, expired accounts	2018	0	0
3020	Obligated balance, Outlay (gross)	-98,910	-105,581	-106,770
3041	Recoveries of prior year unpaid obligations, expired	-3,154		
3050	Unpaid obligations, end of year	17,210	17,899	18,699
Change	e in Obligated Balance:			
3100	Obligated balance, start of year (net)	17,399	17,899	18,699
3200	Obligated balance, end of year	17,197	18,699	18,699
Budget	Authority and Outlays, Net:			
	Discretionary:			
4000	Budget authority, gross	105,040	105,581	106,770
	Outlays, gross			
4010	Outlays from new discretionary authority	86,036	85,264	86,239
4011	Outlays from discretionary balances	12,872	20,317	20,531
4020	Outlays, gross (total)	98,909	105,581	106,770
	Offsetting Collections Against Gross Budget Authority and Outlays:			
4030	Federal Sources	-815	-600	-600
4033	NonFederal Sources	-1,185	-1,000	-1,000
4040	Total Offsetting Collections	-2,000	-1,600	-1,600
4080	Outlays, net (discretionary)	96,909	103,981	105,170
4180	Budget authority	103,027	103,981	105,170
4190	Outlays, net (total)	96,909	103,981	105,170

EMERGENCY FUND

Program and Financing Schedule (\$000s)

Ident	ification Code: 95-0311-0-1-407	FY 2014	FY 2015	FY 2016
<u>Budg</u>	etary Resources:			
	Unobligated balance:			
1000	Unobligated balance brought forward, Oct 1	1,998	1,998	1,998
1930	Total budgetary resources available	1,998	1,998	1,998
Memo	prandum (non-add) entries:			
1941	Unexpired unobligated balance, end of year	1,998	1,998	1,998



Obligations by Program Activity (\$000s)

Identification Code: 95-0310-0-1-407	FY 2014	FY 2015	FY 2016
Policy and Direction	13,567	14,683	14,859
Communications	5,887	6,398	6,471
Aviation Safety	29,980	32,835	33,213
Information Technology & Services	7,855	6,659	6,730
Research & Engineering	13,419	12,478	12,616
Training Center	892	942	952
Administrative Law Judges	2,229	2,547	2,575
Highway Safety	6,015	6,518	6,594
Marine Safety	3,721	4,129	4,177
Railroad, Pipeline & Hazardous Materials			
Investigations	7,296	8,424	8,523
Administration	8,145	8,368	8,460
	00.000	100.001	
Iotal	99,006	103,981	105,170

Total Obligations by Program (\$000s)



Obligations by Object Classification (\$000s)

		1 1	T	
Identi	fication Code: 95-0310-0-1-407	FY 2014	FY 2015	FY 2016
	Personnel Componentian and Persofits			
	Personnel Compensation and Benefits:			
11.1	Permanent Positions	46,997	49,941	50,316
11.3	Positions Other Than Permanent	2,109	2,417	2,551
11.5	Other Personnel Compensation	1,645	2,431	2,434
	Total Personnel Compensation	50,751	54,789	55,301
12.1	Personnel Benefits	14,864	15,907	16,093
	Subtotal, Personnel Compensation and Benefits	65,615	70,696	71,394
	Other Than Personnel Compensation and Benefits			
21.0	Travel and Transportation of Persons	3,175	3,479	3,535
22.0	Transportation of Things	160	171	174
23.1	Rental Payments to GSA	8,757	8,751	8,845
23.2	Rental Payments to Others	2,145	2,181	2,218
23.3	Communications, Utilities, and			
	Miscellaneous Charges	918	965	981
24.0	Printing and Reproduction	92	98	99
25.0	Other Contractual Services	14,156	15,669	15,921
26.0	Supplies and Materials	526	540	549
31.0	Equipment	3,462	1,431	1,454
99.9	Total Obligations	99,006	103,981	105,170
	Personnel Summary:			
	Full Time Equivalent Employment (FTE)	402	423	423
	- Permanent	402	423	423
	- Other Than Permanent	0	0	0

Total Obligations by Object Classification (\$000s)
NATIONAL TRANSPORTATION SAFETY BOARD SALARIES AND EXPENSES



Staffing by Program Activity

NATIONAL TRANSPORTATION SAFETY BOARD SALARIES AND EXPENSES

Identification Code: 95-0310-0-1-407	FY 2014	FY 2015	FY 2016
Policy and Direction	<u>61</u>	<u>63</u>	<u>63</u>
Chairman, Vice Chairman, Board Members	14	15	15
Office of the Managing Director	21	22	22
Office of the General Counsel	12	11	11
Office of the Chief Financial Officer	12	13	13
EEO Diversity & Inclusion Office	2	2	2
Communications	25	26	26
Aviation Safety	126	134	134
Information Technology and Services	25	25	25
Research and Engineering	46	49	49
Training Center	4	4	4
Administrative Law Judges	9	10	10
Highway Safety	26	27	27
Marine Safety	16	17	17
Railroad, Pipeline and Hazardous Materials	31	35	35
Administration	33	33	33
Total	402	423	423

Staffing by Program Activity

NATIONAL TRANSPORTATION SAFETY BOARD SALARIES AND EXPENSES

Analysis of Changes - FY 2015 to 2016

\$ 0 <u>Staff</u>

The passback level provides funds to maintain a staffing level of 423 FTEs.

\$ 698 Pay Raises

Funds cover the annualized costs of the president's 1 percent provisional pay raise effective January 2016.

\$ 360 <u>Non-Pay Inflation</u>

Inflation of 1.6 percent is used for non-pay based on economic assumptions for discretionary programs.

\$ 131 <u>Rent</u>

The requested funds cover increases in rent for General Services Administration (GSA) and non-GSA occupancy agreements.

\$ 1,189 Total

Summary of Changes:

- \$ 103,981 FY 2015 level (423 FTEs)
- \$ 1,189 Total Increase
- \$ 105,170 FY 2016 level (423 FTEs)

POLICY AND DIRECTION TAB

POLICY AND DIRECTION

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$14,683	63
FY 2016 Request	\$14,859	63
Increase/Decrease	\$176	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

Policy and Direction program resources fund the offices of the Chairman, Vice Chairman, and Members of the Board, as well as the Offices of the Managing Director, General Counsel, Chief Financial Officer, and Equal Employment Opportunity, Diversity, and Inclusion. Collectively, these offices provide overall leadership, management, and direction for the NTSB.

Chairman, Vice Chairman, and Members (15 FTEs)

The Chairman serves as the chief executive officer for the agency. The Chairman, Vice Chairman, and Board Members preside at NTSB Board meetings; review and approve all NTSB reports, safety studies, and safety recommendations; provide appellate review of FAA certificate and certain civil penalty actions, as well as USCG license actions; and act as spokespersons at accident scenes. They also advocate safety recommendations with the transportation community, federal agencies, other state and local governments, and the public.

Office of the Managing Director (22 FTEs)

The Office of the Managing Director assists the Chairman in the discharge of executive and administrative functions. The office coordinates activities of the entire staff, is responsible for day-to-day operation of the agency, and develops and recommends plans to achieve program objectives. The Managing Director is responsible for the overall leadership, direction, and performance of the agency, as well as its communications and organizational efficiency, including oversight of the NTSB Response Operations Center. The center provides support 24 hours a day, 365 days a year, for agency-wide operational requirements, including accident launches and the collection and dissemination of information related to transportation accidents and incidents.

There are two organizational units within the Office of the Managing Director. The Training Center manages workforce development and external training functions. The Safety Recommendations and Quality Assurance Division manages safety recommendations and policies concerning document development and review, quality control for NTSB documents and product databases, and the archiving of internal and external correspondence.

Office of the General Counsel (11 FTEs)

The Office of the General Counsel provides advice and assistance on legal aspects of policy matters, legislation, testimony, NTSB rules, and ethics. The office also provides timely and objective review of airman appeals of certificate actions and certain civil penalties and seaman license actions, acting on behalf of the NTSB on particular procedural aspects of enforcement cases; makes decisions as to the release of official information pursuant to the requests or demands of private litigants, courts, or other authorities for use in litigation not involving the United States; ensures compliance with statutes concerning public access to information through publication of NTSB decisions and releases under the Freedom of Information Act (FOIA); provides counsel and staff assistance to the US Department of Justice when the NTSB is a party to judicial proceedings; and provides internal legal assistance and guidance regarding accident and incident investigations, hearings, appearances as witnesses, acquiring evidence by subpoena and other means, and the taking of depositions.

Office of the Chief Financial Officer (13 FTEs)

The Office of the Chief Financial Officer (CFO) manages NTSB financial resources, develops the agency's budget requests for submission to the Office of Management and Budget (OMB) and Congress, and executes the budget for resources appropriated to the NTSB by Congress. The CFO also prepares the agency's financial statements, as required by the Accountability of Tax Dollars Act; oversees property and inventory control programs; and analyzes the fee structure for services that the agency provides on a reimbursable basis. Additionally, the CFO is responsible for ensuring compliance with the Federal Managers' Financial Integrity Act.

Equal Employment Opportunity, Diversity, and Inclusion Office (2 FTEs)

The Office of Equal Employment Opportunity, Diversity, and Inclusion (EEODI) advises and assists the Chairman and NTSB office directors in carrying out their responsibilities relative to Title VII of the Civil Rights Act of 1964, as amended, and other laws, executive orders, and regulatory guidelines affecting diversity development and the processing of Equal Employment Opportunity (EEO) complaints. These services are provided to managers, employees, and job applicants by the director and one full-time staff person, three collateralduty employees (that is, one Hispanic employment program manager, one federal women's program manager, and one disability program manager), and volunteer special emphasis program managers. To maintain the integrity and impartiality of the NTSB EEO complaints resolution program, external EEO counselors and investigators are contracted to assist employees and job applicants who file informal/formal complaints of alleged discrimination. EEODI services also include mandatory educational training activities, diversity awareness and targeted outreach, and internal recruitment initiatives/career enhancement advisory services. Additionally, the EEODI office manages an alternative dispute resolution program.

COMMUNICATIONS TAB

COMMUNICATIONS

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$6,398	26
FY 2016 Request	\$6,471	26
Increase/Decrease	\$73	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The Office of Communications (OC) includes the divisions of Safety Advocacy, Public Affairs, Government Affairs, and Transportation Disaster Assistance (TDA). OC staff produces and updates information for the NTSB website, as well as producing videos to support the agency's advocacy efforts. The OC ensures that the NTSB mission and actions are accurately and effectively communicated to congressional stakeholders, victims of transportation accidents and their families, state and local governments, the press, and the public. The desired result is understanding of the NTSB mission and implementation of safety recommendations.

Safety recommendations are issued to government agencies at all levels, transportation operators, safety organizations, and other key stakeholders to improve the nation's transportation system. The adoption of NTSB safety recommendations is not mandatory, but—to emphasize their importance—Congress requires the DOT and its agencies to respond to recommendations within 90 days of their issuance.

The OC develops and administers the Most Wanted List (MWL) based, in part, on open safety recommendations. The MWL is the agency's preeminent advocacy tool, highlighting issue areas whose resolution would have significant impact on transportation safety at the national and state levels.

Safety Advocacy

The Safety Advocacy Division is responsible for the following:

- Leading the development and advocacy strategy for the MWL.
- Working with Board Members and NTSB staff to promote MWL issue areas.
- Developing and implementing the agency's advocacy program, in partnership with the Office of the Managing Director, to highlight state-related safety recommendations.
- Collaborating with the Government Affairs Division to obtain support for programs and legislation at state and local levels consistent with agency recommendations.
- Developing and improving the dissemination of safety information and increasing public awareness of NTSB activities in transportation safety.
- Proposing, developing, and managing forums on safety issues and recommendations.
- Developing and maintaining contact with safety advocacy organizations and providing information on NTSB activities and safety recommendations.

Public Affairs

The Public Affairs Division is responsible for the following:

- Serving as the primary point of contact for all media (print, radio, television, and Internet-based and social media outlets).
- Disseminating information about NTSB activities.
- Providing media support to Board Members, investigators, and launch teams at accident sites.
- Developing press opportunities to promote the NTSB safety message.
- Providing support for the Chairman through speechwriting and producing other written products.
- Producing promotional videos about the NTSB and its activities.
- Collaborating with the web team to write, edit, and maintain content on the agency's website, including updating news and current information, and managing the social media program.
- Maintaining and updating the agency's media room and equipment.

Government Affairs

The Government Affairs Division is responsible for the following:

- Coordinating NTSB responses to requests for information and assistance from other federal agencies and Congress.
- Assisting congressional committee staffs in developing appropriations and authorization legislation for the NTSB.
- Informing the agency's congressional committees of jurisdiction, governors, and state legislatures about NTSB activities, including accident launches, investigations, and outreach activities, such as investigative hearings and forums.
- Responding to inquiries and concerns raised by members of Congress and committees, governors, and state legislators.
- Providing comments, when requested, on proposed legislation affecting other transportation agencies.
- Assisting Board Members and NTSB staff in testifying before Congress.
- Providing on-scene support to Board Members and accident investigation teams when requested.
- Providing assistance to other NTSB offices in identifying appropriate resources in state and local governments.
- Collaborating with the Safety Advocacy Division in support of programs and legislation consistent with safety recommendations.

Transportation Disaster Assistance

The TDA Division carries out the NTSB statutory duty under the Aviation Disaster Family Assistance Act (49 U.S.C. 1136) and the rail passenger disaster family assistance provisions of the Rail Safety Improvement Act of 2008 (49 U.S.C. 1139). This division is responsible for the following:

- Responding to all major aviation and rail accidents as required by law.
- Resources permitting, supporting accident investigations in other modes of transportation, including regional aviation.
- Coordinating the provision of federal services to accident survivors and victims' families, including crisis counseling, victim recovery and identification, and communication with foreign governments.
- Conducting family briefings during the initial on-scene phase and throughout the investigation to provide updates and to address other family member concerns.
- Providing notification to victims and their family members regarding all Board proceedings and investigative products.

• Providing training and educational outreach to other government agencies, organizations potentially affected by or involved in NTSB accident investigations, airline and airport personnel, and state and local governments to help ensure their preparedness for a major transportation disaster.

Accomplishments and Workload

Safety Advocacy

The Safety Advocacy team manages the agency's premier advocacy tool, the MWL program. Staff developed strategy for communicating the 2014 MWL, which was announced at a press conference in January 2014. This effort included managing communication and outreach support for 10 advocacy teams, identifying or participating in speaking engagements, coordinating advocacy trips, developing presentations, and assuming greater responsibility in scheduling and developing social media content. Staff has drafted the 2015 MWL proposal, which will be released in January 2015, and also coordinated the NTSB response to the DOT Report to Congress on the MWL.

Advocacy activities include: (1) developing Twitter campaigns and participating in multiple aviation conferences; (2) drafting blogs, guest blogs, letters to the editor, and articles, such as for the Commercial Vehicle Safety Alliance *Guardian*; and (3) coordinating speaking opportunities at events such as the Washington Metropolitan Area Transit Authority's announcement of its latest rail cars, the National Organizations for Youth Safety–Global Youth Traffic Safety Month kickoff, the Virginia Distracted Driving Summit, the National Association of State Motorcycle Safety Administrators national symposium, the Operation Lifesaver leadership conference, and the Wyoming Governor's Council on Impaired Driving.

Safety Advocacy staff continues to promote the recommendations from the 2013 Safety Report *Reaching Zero: Actions to Eliminate Alcohol-Impaired Driving*. Advocacy activities have included presentations to AAA, toxicology organizations, the Lifesavers Highway Safety conference, and the Commission on Virginia Alcohol Safety Action Program's training conference. The Safety Advocacy team also supported legislative efforts on a number of traffic safety issues in multiple states, including Delaware, Ohio, Pennsylvania, and South Carolina (ignition interlocks); Florida (child passenger safety); Illinois (strengthening blood alcohol concentration testing after motor vehicle crashes); Nebraska (primary enforcement); South Dakota (texting ban); Tennessee (universal motorcycle helmets); and Virginia (mandatory boating education). Safety Advocacy staff supported an investigative hearing on two Metro-North rail accidents and a forum on rail transportation of crude oil and ethanol. Staff also supported accident launches by providing background information for Government Affairs and assisting Public Affairs.

Public Affairs

In FY 2014, the Public Affairs Division issued 118 press releases, launched to six major accident investigations, and responded to nearly 8,000 press inquiries. Public Affairs staff coordinated more than 700 interviews; proactively reached out to more than 2,800 reporters; and coordinated media activities for seven Board meetings and seven investigative hearings, public forums, or other events. Further, staff coordinated 38 press conferences and handled communication efforts for the ongoing Boeing 787 battery fire investigation; the Metro-North accidents and special investigation report; the petition for reconsideration of the probable cause of the crash of TWA flight 800; and investigative hearings and Board meetings for the crashes of Asiana Airlines flight 214 and United Parcel Service (UPS) flight 1354. In addition, staff provided more than 19 media and communications training courses to various stakeholders.

The Public Affairs staff continues to expand the NTSB's social media presence. Currently, the NTSB has over 75,500 Twitter followers, which represents a near doubling of followers from 1 year ago. Also growing at a rapid pace this year is the use of YouTube to inform stakeholders and the public about the agency's investigative work, safety recommendations, and the MWL. In FY 2014, Public Affairs produced more than 32 videos.

Government Affairs

During FY 2014, the Government Affairs division supported seven opportunities for the NTSB to testify before Congress on transportation safety and responded to subsequent questions for the record. Also, staff worked on scene at five major transportation accidents and supported countless other accident investigations from Washington, DC, to facilitate the flow of information to policymakers. We responded to hundreds of questions, and initiated outreach to Congressional, state, and local officials.

We testified in person at the state level on highway and boater safety, in addition to providing written statements to state legislative committees on general aviation (GA), transit, commuter rail, and pipeline safety. Staff also arranged for Board Member or staff-level briefings for state and local officials on ongoing investigations and recommendations.

Commu	nica	itions

In the aftermath of the downing of Malaysian Air flight 17, Government Affairs staff worked directly with the White House to communicate the capabilities of the NTSB—which resulted in the NTSB providing technical specialists to support the US mission.

Additionally, Government Affairs staff chaired a panel on emergency response for the public forum on rail transportation of crude oil and ethanol, and supported other events such as the cruise ship safety forum, Asiana flight 214 investigative hearing, and Metro-North investigative hearing.

Transportation Disaster Assistance

During this reporting period, TDA staff launched on three aviation accidents, one of which was classified as meeting the requirements of the Aviation Disaster Family Assistance Act (49 U.S.C. 1136, 41113). TDA staff also launched to two highway accidents, one rail accident, and one pipeline accident. Staff managed an average of 24 cases per week, providing support to an additional 228 domestic aviation accidents, 17 international aviation accidents, nine rail accidents, four marine accidents, one highway accident, and one pipeline accident.

Staff also provided assistance to family members and served as a technical resource to the Chairman and Board Members regarding family member attendance at 11 Board meetings, investigative hearings, and forums.

TDA staff participated in 58 outreach training events, resulting in direct contact with approximately 4,275 participants. We also responded to inquiries for information from four international agencies and organizations, 30 federal agencies, 47 state and local agencies, 55 transportation industry organizations, and 26 professional organizations, educational institutions, and other aid organizations.

During FY 2014, staff coordinated two iterations of TDA 301, a 2.5-day overview of family assistance operations associated with transportation disasters. We had a total of 126 attendees from across the transportation industry. Staff also participated in six modal training courses at the NTSB Training Center; developed and delivered a training program for regional air safety investigators; and designed a tabletop exercise focused on family assistance center operations for the NTSB Office of General Counsel.

In continuing outreach to the airport community, TDA staff conducted airport disaster response courses at Los Angeles World Airport, Richmond International Airport, Houston Airport System, Fort Lauderdale–Hollywood International Airport, and Phoenix Sky Harbor International Airport. This training reached 543 attendees. TDA staff also conducted a 2-day train-the-trainer course at San Francisco International Airport for 65 air carrier family assistance trainers and senior emergency response staff. TDA staff coordinated a 1-day postaccident response review, also known as the "Chicago meeting." This year's meeting focused on DOT Office of Aviation Enforcement and Proceedings and NTSB Office of General Counsel discussions concerning air carrier assurances and codeshare/alliance relationships; NTSB Public Affairs review of social media trends in accident response; and family assistance and emergency response lessons learned from the Asiana Airlines flight 214 and UPS flight 1354 crashes. One hundred thirty-seven people attended from 23 countries, representing commercial aviation operators, trade organizations, and federal agencies.

Staff also coordinated the annual NTSB family group meeting, designed to provide select family members with information regarding recent and upcoming NTSB events and an overview of TDA initiatives since the prior meeting. Participants included family members representing aviation, rail, highway, and marine accidents.

AVIATION SAFETY TAB

AVIATION SAFETY

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$32,835	134
FY 2016 Request	\$33,213	134
Increase/Decrease	\$378	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The mission of the Office of Aviation Safety (AS) is to:

- Investigate all air carrier, commuter, and air taxi accidents; in-flight collisions; fatal and nonfatal GA accidents; and certain public aircraft accidents.
- Participate in the investigation of major airline crashes in foreign countries that involve US carriers, US-manufactured or -designed equipment, or US-registered aircraft to fulfill US obligations under ICAO agreements.
- Investigate safety issues that extend beyond a single accident, to examine specific aviation safety problems from a broader perspective.

AS conducts investigative activities through five specialty divisions based in Washington, DC, and four regional offices. Investigators are located throughout the country. International aviation activities are coordinated from the Washington, DC, office.

Major Investigations Division

The Major Investigations Division of AS performs the following functions:

• Provides investigators-in-charge (IIC) for major domestic aircraft accident and incident investigations.

- Coordinates the preparation of comprehensive aviation accident and incident reports and manages aviation investigative hearings, forums, and conferences.
- Coordinates and supervises the efforts of NTSB group chairmen and external investigation participants from industry, other government agencies, and foreign authorities (for investigations involving foreignregistered aircraft that were operating in US territory or foreignmanufactured or -designed aircraft operated by US carriers).
- Provides accredited representatives to assist in the investigation of civil aviation accidents that occur in other countries. (The accredited representative informs domestic aviation interests of the progress of an investigation, while providing needed technical expertise, as requested, to foreign accident investigation counterparts; and also informs FAA and US industry representatives of issues that may affect aviation safety or the safety of aircraft or aircraft components manufactured in the United States).

As applicable for domestic accident and incident investigations, specialists in operational factors, aviation engineering, human performance, or survival factors (and other NTSB organizational elements, as appropriate) may act as group chairmen on a major investigation. Group chairmen lead their respective groups in the technical investigation of an accident under the direction of the IIC and produce a factual report that is placed in the NTSB public docket. They also produce analytical reports that are used in developing the draft accident report and proposed safety recommendations. In foreign accident and incident investigations, NTSB technical specialists may also provide specialized assistance through the US-accredited representative.

Operational Factors Division

The Operational Factors Division examines air traffic control, flight operations, and meteorological issues, as follows:

- Air traffic control facilities, procedures, and flight handling, including developing flight histories from air route traffic control centers and terminal facility radar records.
- Operations of the air carrier and airport; training, experience, and operational performance of flight crews; and FAA surveillance of flight operations.
- Meteorological/environmental conditions that may have caused or contributed to an accident and pertinent meteorological products, procedures, and services provided by government and industry.

Aviation Engineering Division

The Aviation Engineering Division examines all issues related to powerplants, structures, systems, system safety, and maintenance, as outlined below:

- Powerplant components, including the airworthiness of aircraft engines and propellers.
- Integrity of aircraft structures and flight controls, including the adequacy of design and certification.
- Airworthiness of aircraft flight controls and electrical, pneumatic, hydraulic, and avionics systems.
- Hazards and associated safety risks introduced by aircraft systems and equipment failures, including the adequacy of design and certification.
- Service history and maintenance of aircraft systems, structures, and powerplants.
- Airworthiness of helicopters, including powerplants, structures, and control systems.

Human Performance/Survival Factors Division

AS human performance specialists assess the knowledge, experience, training, and physical abilities of those whose actions may have caused or contributed to an accident or incident. They review the adequacy of established procedures, examine work habit patterns and interrelationships among crewmembers and managers, and investigate the ergonomics of equipment design and the potential effects of that design on operator performance. A human performance investigation may also include an assessment of sleep and rest cycles and drug or alcohol use.

Survival factors specialists examine factors that affect the survival of those involved in accidents, including the causes of injuries sustained by occupants of the aircraft or by others. They also examine safety procedures, search and rescue operations, crashworthiness, equipment design, emergency response and escape, crewmember emergency procedures training, and airport certification.

Writing and Editing Division

The Writing and Editing Division staff drafts major aviation reports and edits accident briefs, safety recommendation letters, special investigation reports, responses to notices of proposed rulemaking, and general correspondence.

Regional Offices

AS regional offices are aligned as follows:

The eastern region encompasses Alabama, Connecticut, Delaware, Florida, Georgia, Kentucky, Maine, Maryland, Massachusetts, Mississippi, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, and West Virginia, and as well as the District of Columbia, Puerto Rico, and the US Virgin Islands. Staff is located in the main office in Ashburn, Virginia – and at satellite work sites located in Naples, Florida; Atlanta and Marietta, Georgia; Randolph, New Jersey; Brooklyn, New York; and Berryville, Clear Brook, and Purcellville, Virginia.

The central region encompasses Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Louisiana, Michigan, Minnesota, Missouri, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Texas, and Wisconsin. Staff is located in the main office in Denver, Colorado – and at satellite work sites located in Gill and Idaho Springs, Colorado; Barrington, Bartlett, Burbank, Carol Stream, Geneva, Morris, and Naperville, Illinois; Allen, Dallas, Houston, and Mansfield, Texas; and Greenville, Wisconsin.

The western Pacific region encompasses Arizona, California, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming, as well as the territories of Guam and American Samoa. Staff is located in the main office in Federal Way, Washington – and at satellite work sites located in Chandler and Mesa, Arizona; Long Beach, Los Angeles, Palm Springs, Rancho Palos Verdes, San Dimas, and Yucca Valley, California; Portland, Oregon; and Issaquah, Lynnwood, and New Port, Washington.

The Alaska region encompasses the entire state of Alaska. The region's main office is located in Anchorage – with one satellite work site located in Fairbanks.

Although many regional accident/incident investigations may be much smaller in scope than those led by IICs at the NTSB Washington, DC, headquarters, they are conducted in a similar manner. Often, a single aviation safety investigator (ASI) conducts the investigation, gathering detailed information and working with party representatives. During each investigation, ASIs consider ways to prevent similar accidents from recurring through a more immediate and informal solution (known as a safety accomplishment) or through the formal safety recommendation process. In addition, ASIs provide support to major accident investigations and may also identify accidents that present broader safety issues to be addressed in a forum or at a Board meeting. In these cases, additional staff from headquarters are often assigned to assist the ASIs in gathering the facts, developing the analysis, and drafting the final report.

Accomplishments and Workload

Completed Accident Investigation Reports and Briefs October 1, 2013–September 30, 2014

Crash in Marginal Weather Conditions of Air Tour Eurocopter EC 130 B4, N11QV Pukoo, Hawaii November 10, 2011 Aviation Accident Brief

On November 10, 2011, about 1214 local time, a Eurocopter EC130 B4 helicopter collided with mountainous terrain near Pukoo, on the island of Molokai. The commercial pilot and four passengers were fatally injured. The helicopter was registered to Nevada Helicopters Leasing and operated by Helicopter Consultants of Maui, Inc., dba Blue Hawaiian Helicopters. The flight was operated as a visual flight rules sightseeing flight under the provisions of 14 *Code of Federal Regulations* (CFR) Part 135. Visual meteorological conditions prevailed at the time of departure, and company flight-following procedures were in effect. The flight originated from the Kahului Airport, on the island of Maui.

The NTSB determined that the probable cause of this accident was the pilot's failure to maintain clearance from mountainous terrain while operating in marginal weather conditions, which resulted in the impact of the horizontal stabilizer and lower forward portion of the fenestron with ground and/or vegetation and led to the separation of the fenestron and the pilot's subsequent inability to maintain control. Contributing to the accident was the pilot's decision to operate into an area surrounded by rising terrain, low and possibly descending cloud bases, rain showers, and high wind.

Recommendations: None

Brief adopted: September 30, 2014

Crash During Nighttime Nonprecision Instrument Approach to Landing, UPS Flight 1354, Airbus A300-600, N155UP Birmingham, Alabama August 14, 2013 Aircraft Accident Report

On August 14, 2013, about 0447 local time, an Airbus A300-600 crashed short of the runway during a localizer nonprecision approach at Birmingham-Shuttlesworth International Airport. The captain and first officer were fatally injured, and the airplane was destroyed by impact forces and postcrash fire. The scheduled cargo flight was operating under the provisions of 14 CFR Part 121 on

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an instrument flight rules flight plan, and dark night visual flight rules conditions prevailed. Variable instrument meteorological conditions with a variable ceiling were present north of the airport on the approach course. The flight originated from Louisville International Airport–Standiford Field, Louisville, Kentucky.

The NTSB determined that the probable cause of this accident was the flight crew's continuation of an unstabilized approach and their failure to monitor the aircraft's altitude during the approach, which led to an inadvertent descent below the minimum approach altitude and subsequently into terrain. Contributing to the accident were (1) the flight crew's failure to properly configure and verify the flight management computer for the profile approach; (2) the captain's failure to communicate his intentions to the first officer once it became apparent the vertical profile was not captured; (3) the flight crew's expectation that they would break out of the clouds at 1,000 feet above ground level due to incomplete weather information; (4) the first officer's failure to make the required minimums callouts; (5) the captain's performance deficiencies likely due to factors including, but not limited to, fatigue, distraction, or confusion, consistent with performance deficiencies exhibited during training; and (6) the first officer's fatigue due to acute sleep loss resulting from her ineffective off-duty time management and circadian factors.

Recommendations: 20 new recommendations Report adopted: September 9, 2014

Lithium-Ion Battery Fire Incident, All Nippon Airways Flight 692, Boeing 787, **JA804A** Takamatsu, Japan January 16, 2013 **US Comments/Foreign Accident Report**

On January 16, 2013, an All Nippon Airways Boeing 787 conducted an emergency descent and diverted to Takamatsu Airport due to an odor in the cockpit and a battery overheat indication. Upon landing, an emergency evacuation was conducted after the pilots noticed smoke outside the windshield and an air traffic controller confirmed that smoke was coming from the forward fuselage. Of the 137 passengers and crewmembers onboard, four received minor injuries during the emergency evacuation. The flight was a regularly scheduled passenger flight from Yamaguchi Ube Airport, Ube, Japan, to Haneda International Airport, Tokyo, Japan.

The investigation is being conducted by the Japan Transport Safety Board. As the state of design and manufacture of the airplane and engines, the United States designated an NTSB investigator to act as the US-accredited representative to assist in the investigation under the provisions of Annex 13 to the Convention

on International Civil Aviation. The US team — including representatives from the NTSB, the FAA, and Boeing — traveled to the scene of the incident.

Recommendations: 5 new recommendations Report adopted: NA; US comments completed June 30, 2014

Descent Below Visual Glidepath and Impact With Seawall, Asiana Airlines Flight 214, Boeing 777-200ER, HL7742 San Francisco, California July 7, 2013 Aircraft Accident Report

On July 6, 2013, about 1128 local time, a Boeing 777-200ER impacted the seawall and subsequently the runway during landing at San Francisco International Airport. Three passengers were fatally injured, and about 182 people were transported to the hospital with injuries. The airplane was destroyed by impact forces and a postcrash fire. The regularly scheduled passenger flight was operating under the provisions of 14 CFR Part 129 between Incheon International Airport, Seoul, South Korea, and San Francisco. Visual meteorological conditions prevailed at the time of the accident.

The NTSB determined that the probable cause of this accident was the flight crew's mismanagement of the airplane's descent during the visual approach, the pilot flying's unintended deactivation of automatic airspeed control, the flight crew's inadequate monitoring of airspeed, and the flight crew's delayed execution of a go-around after they became aware that the airplane was below acceptable glidepath and airspeed tolerances. Contributing to the accident were (1) the complexities of the autothrottle and autopilot flight director systems that were inadequately described in Boeing's documentation and Asiana's pilot training, which increased the likelihood of mode error; (2) the flight crew's nonstandard communication and coordination regarding the use of the autothrottle and autopilot flight director systems; (3) the pilot flying's inadequate training on the planning and executing of visual approaches; (4) the pilot monitoring/instructor pilot's inadequate supervision of the pilot flying; and (5) flight crew fatigue, which likely degraded their performance.

Recommendations: 27 new recommendations Report adopted: June 24, 2014

In-Flight Breakup Over Atlantic Ocean, TWA Flight 800, Boeing 747141, N93119 East Moriches, New York July 17, 1996 **Response to Petition for Reconsideration**

TWA flight 800 was operating under the provisions of 14 CFR Part 121 as a scheduled international flight from John F. Kennedy International Airport, New York City, New York, to Charles de Gaulle International Airport, Paris, France. The flight departed New York City on July 17, 1996, about 2019 local time, with two pilots, two flight engineers, 14 flight attendants, and 212 passengers on board. About 12 minutes after departure, the airplane crashed in the Atlantic Ocean. All 230 people on board were fatally injured, and the airplane was destroyed. Visual meteorological conditions prevailed for the flight, which was operated under an instrument flight rules flight plan.

Twenty-five findings were adopted on August 23, 2000, including finding 8, which stated the following:

The witness observations of a streak of light were not related to a missile, and the streak of light reported by most of these witnesses was burning fuel from the accident airplane in crippled flight during some portion of the postexplosion preimpact breakup sequence. The witnesses' observations of one or more fireballs were of the airplane's burning wreckage falling toward the ocean.

The probable cause adopted on August 23, 2000, was as follows:

The [NTSB] determines that the probable cause of the TWA flight 800 accident was an explosion of the center wing fuel tank (CWT), resulting from ignition of the flammable fuel/air mixture in the tank. The source of ignition energy for the explosion could not be determined with certainty, but, of the sources evaluated by the investigation, the most likely was a short circuit outside of the CWT that allowed excessive voltage to enter it through electrical wiring associated with the fuel quantity indication system.

Contributing factors to the accident were the design and certification concept that fuel tank explosions could be prevented solely by precluding all ignition sources and the design and certification of the Boeing 747 with heat sources located beneath the CWT with no means to reduce the heat transferred into the CWT or to render the fuel vapor in the tank nonflammable.

According to the June 19, 2013, petition, the petitioners are "investigators from the original [NTSB] investigation, family members of crash victims, former airline crash investigators, and concerned scientists." The petitioners claimed

that the NTSB's probable cause determination is "erroneous and should be reconsidered and modified accordingly." The petitioners also claimed that finding 8 is "erroneous and does not fairly summarize witness observations."

To support their claims, the petitioners provided "two new analyses" of FAA radar data, which they asserted show that aspects of the NTSB's findings are erroneous. However, (1) the petitioners' stated presumption that the flight and debris positions and times "can be obtained either directly or extrapolated from the raw radar data" is inaccurate. Limitations in the radar data preclude the mathematical determination of such positions and times, and the petitioners misinterpret these data. (2) Further, the fragmentation of the airplane during the breakup sequence makes it impossible to determine if primary returns represent the same object tracked over time; yet the petitioners' debris position and velocity calculations assume that, following the explosion, the primary radar returns represented individual objects tracked as they fell to the ocean. Such an assumption is inappropriate. (3) The petitioners' attempts to perform distance calculations between a secondary radar return and a primary return are also problematic. Because the primary and secondary radar data are acquired by different antennas, there are likely to be discontinuities in the transition from secondary radar returns to primary radar returns after the breakup. (4) In addition, the petitioners' ballistics analysis, which attempts to estimate a range of possible exit velocities for wreckage debris, also suffers from a lack of accurate input data.

The petitioners provided 20 evewitness interview documents from the Federal Bureau of Investigation "not previously available to the NTSB." The NTSB reviewed the interview summaries and considered them as 20 unique new sources, even though it is not clear whether each summary represents a new witness because each was deidentified. (1) The general locations for each witness did not provide any new, unique vantage points when compared with the locations of witnesses referenced in the public docket for this investigation or the final report. (2) Further, the information provided in the 20 summaries does not differ substantially from some of the other witness summaries, which are discussed in the final report and contained in the public docket. (3) Nor does the information substantially affect the witness totals. For example, if it can be assumed that each of the 20 summaries represents a new witness, the total percentage of known witnesses whose summaries included references to a streak of light and/or a light originating from the horizon would increase a fraction of 1 percent. (4) In addition, finding 8 was not based on witness summaries alone. The NTSB considered the physical evidence of the investigation, including studies of the wreckage damage characteristics and the locations of wreckage pieces in the debris field zones, as well as various missile and explosive scenarios.

In accordance with 49 CFR 845.41, the NTSB reviewed the June 19, 2013 petition for reconsideration and modification of the findings and probable cause in this accident and, on the basis of its review, denied the petition in its entirety.

Response adopted: June 11, 2014

Runway Overrun, Hawker Beechcraft 400A, N826JH Atlanta, Georgia June 18, 2012 **Aviation Accident Brief**

On June 18, 2012, about 1006 local time, a Beechcraft Corporation 400A collided with terrain following a landing overrun at Dekalb-Peachtree Airport. The airline transport pilot and copilot were seriously injured, and the two passengers sustained minor injuries. The airplane was substantially damaged. It was registered to and operated by N79TE, LLC, under the provisions of 14 CFR Part 91, as an executive/corporate flight. Visual meteorological conditions prevailed for the flight, which operated on an instrument flight rules flight plan.

The NTSB determined that the probable cause of this accident was the flight crew's failure to obtain the proper airspeed for landing, which resulted in the airplane touching down too fast with inadequate runway remaining to stop and a subsequent runway overrun. Contributing to the accident were the failure of either pilot to call for a go-around and the flight crew's poor crew resource management and lack of professionalism.

Recommendations: None

Brief adopted: February 19, 2014

Controlled Flight Into Terrain, Rockwell International (Aero Commander) 690A, N690SM **Apache Junction**, Arizona November 23, 2011 **Aviation Accident Brief**

On November 23, 2011, about 1831 local time, an Aero Commander 690A airplane was destroyed when it impacted terrain in the Superstition Mountains near Apache Junction. The commercial pilot and the five passengers were fatally injured. The airplane was registered to Ponderosa Aviation, Inc., and operated under the provisions of 14 CFR Part 91 as a personal flight. Night visual meteorological conditions prevailed, and no flight plan was filed. The airplane had departed Falcon Field, Mesa, Arizona, about 1825 and was destined for Safford Regional Airport, Safford, Arizona.

The NTSB determined that the probable cause of this accident was the pilot's failure to maintain a safe ground track and altitude combination for the moonless night visual flight rules flight, which resulted in controlled flight into terrain. Contributing to the accident were the pilot's complacency and lack of situational awareness and his failure to use air traffic control visual flight rules flight following or minimum safe altitude warning services. Also contributing to

the accident was the airplane's lack of onboard terrain awareness and warning system equipment.

Recommendations: None Brief adopted: November 30, 2013

Approach to Landing Accident, Bhoja Air Flight BH0213, Boeing 737, AP-BKC Islamabad, Pakistan April 20, 2012 US Comments/Foreign Accident Report

On April 20, 2012, Bhoja Air flight BH0213, a Boeing 737-236, crashed about 3.7 miles short of the runway during an approach to landing at the Benazir Bhutto International Airport. The flight originated from Jinnah International Airport, Karachi, Pakistan. All 127 people on board were fatally injured, and the aircraft was destroyed. Heavy rain and thunderstorms were reported at the time of the accident.

The Government of Pakistan is investigating the accident and has appointed an IIC along with investigators from the Pakistan Civil Aviation Authority and the Pakistan Air Force. As the state of design and manufacture of the airplane and engines, the United States designated an NTSB investigator to act as the USaccredited representative to assist the Pakistan Government in its investigation under the provisions of Annex 13 to the Convention on International Civil Aviation. The US team – including representatives from the NTSB, the FAA, Boeing, and Pratt and Whitney – traveled to the scene of the accident.

Recommendations: None

Report adopted: NA; US comments completed October 1, 2013

Ongoing Major Aviation Accident and Incident Investigations as of September 30, 2014

Location	Date	Description	Fatalities	
Bedford, MA	05/31/2014	SK Travel LLC, Gulfstream G-IV, rejected takeoff; runway excursion at Laurence G. Hanscom Field	7	
Philadelphia, PA	03/13/2014	US Airways flight 1702 rejected takeoff; hard landing at Philadelphia International Airport	0	
St. Mary's, AK	11/29/2013	Hageland Aviation Services, Inc., dba Era Alaska, flight 1453, crashed on approach to airport	4	
Owasso, OK	11/10/2013	Mitsubishi MU-2B-25 crashed on approach to airport	1	
Flushing, NY	07/22/2013	Southwest Airlines flight 345 experienced hard landing at LaGuardia International Airport	0	
Soldotna, AK	07/06/2013	Rediske Air DHC-3 crashed on takeoff from Soldotna Airport	10	
Bagram, Afghanistan	04/29/2013	National Air Cargo 747 crashed after takeoff (delegated to NTSB on October 1, 2014)	7	
Talkeetna, AK	03/30/2013	Alaska State Trooper AS 350 helicopter crashed	3	
Thomson, GA	02/20/2013	Beech 390 crashed in vicinity of airport	5	
Boston, MA	01/07/2013	Japan Airlines Boeing 787 experienced lithium- ion battery fire	0	
San Juan, PR	03/15/2012	Fresh Air Convair 340 cargo flight crashed on approach to Luis Muñoz Marín International Airport	2	

Domestic Investigative Workload Summarized by State

The following table summarizes statistical information on domestic accident/incident investigations initiated from October 1, 2013, through September 30, 2014, by state. Categories are defined following the table.

State/Territory	Major Investigation	Field Investigation	Field Investigation, Public Aircraft	Limited Investigation	Data Collection Investigation	Incident Investigation	Limited Investigation, Public Aircraft	Totals
ALABAMA	0	4	0	14	5	0	1	24
ALASKA	1	7	0	17	56	3	0	84
ARIZONA	0	9	0	15	31	0	2	57
ARKANSAS	0	3	1	6	6	0	0	16
CALIFORNIA	0	16	0	50	52	3	4	125
COLORADO	0	18	0	12	18	1	1	50
CONNECTICUT	0	0	0	1	2	0	0	3
DISTRICT OF COLUMBIA	0	0	0	0	0	0	0	0
DELAWARE	0	0	0	2	0	0	0	2
FLORIDA	0	16	0	41	39	3	1	100
GEORGIA	0	9	0	10	12	1	0	32
HAWAII	0	4	0	3	6	1	0	14
IDAHO	0	7	0	7	16	0	0	30
IOWA	0	0	0	7	1	0	0	8
ILLINOIS	0	2	0	10	9	1	0	22
INDIANA	0	1	0	9	7	0	0	17
KANSAS	0	2	0	11	6	1	0	20
KENTUCKY	0	0	0	3	2	0	0	5
LOUISIANA	0	1	0	14	6	0	1	22
MAINE	0	1	0	4	4	0	1	10
MARYLAND	0	0	0	3	7	0	1	11
MASSACHUSETTS	1	1	0	3	7	1	0	13
MICHIGAN	0	2	0	12	13	1	0	28
MINNESOTA	0	3	0	8	13	0	0	24
MISSISSIPPI	0	1	0	6	6	0	0	13
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State/Territory	Major Investigation	Field Investigation	Field Investigation, Public Aircraft	Limited Investigation	Data Collection Investigation	Incident Investigation	Limited vestigation, Public Aircraft	Totals
MISSOURI	0	1	0	7	9	2	1	20
MONTANA	0	2	0	10	13	0	0	25
NEBRASKA	0	0	0	4	9	0	0	13
NEW HAMPSHIRE	0	1	0	0	4	0	0	5
NEVADA	0	4	1	9	9	0	0	23
NEW JERSEY	0	2	0	5	12	2	0	21
NEW MEXICO	0	5	0	10	10	0	0	25
NEW YORK	0	8	0	12	9	1	0	30
NORTH CAROLINA	0	3	0	11	14	0	0	28
NORTH DAKOTA	0	1	0	2	4	0	0	7
OHIO	0	3	0	14	12	1	0	30
OKLAHOMA	0	5	0	4	5	0	0	14
OREGON	0	3	0	6	10	0	0	19
PENNSYLVANIA	1	2	0	10	15	0	1	29
RHODE ISLAND	0	0	0	0	1	0	0	1
SOUTH CAROLINA	0	5	0	3	5	0	0	13
SOUTH DAKOTA	0	1	0	1	3	0	0	5
TENNESSEE	0	8	0	8	7	0	0	23
TEXAS	0	18	1	59	39	3	1	121
UTAH	0	3	1	10	11	0	0	25
VERMONT	0	0	0	2	0	1	0	3
VIRGINIA	0	4	0	7	10	1	0	22
WASHINGTON	0	7	0	11	30	0	0	48
WEST VIRGINIA	0	2	0	2	0	0	0	4
WISCONSIN	0	3	0	8	8	1	0	20
WYOMING	0	2	0	2	6	0	0	10
GULF OF MEXICO	0	2	0	1	0	1	0	4
GUAM	0	0	0	1	0	0	0	1
PUERTO RICO	1	0	0	4	1	0	0	6
PACIFIC OCEAN	0	0	0	0	1	0	0	1
TOTAL	4	202	4	491	581	29	15	1,326

Aviation Safety	Budget Request
	FISCAL YEAR 2016

Major Investigation: A major investigation is a significant event, involving the launch of a team consisting of an IIC and one or more NTSB investigators or the use of significant NTSB investigative resources. These accidents typically involve loss of life, multiple injuries, considerable property damage, a new aircraft design, or significant public interest.

Field Investigation: A field investigation requires at least one NTSB investigator to travel to the accident site and conduct a followup investigation. Field accidents typically involve at least one fatality in an airplane that is FAA certified in the "normal" category.

Field Investigation, Public Aircraft: This category encompasses field investigation of an accident involving an aircraft that is operated by a federal, state, or local government.

Limited Investigation: This category represents NTSB investigations in which we do not travel to the scene. An FAA inspector documents the accident site, and an NTSB investigator conducts the remainder of the investigation from the office or during a followup examination. These accidents typically do not involve fatalities.

Data Collection Investigation: This category of investigation does not involve investigator travel and does not require significant investigative efforts. A one-page report is completed within 90 days. These accidents must meet the following criteria:

- No fatalities or "critical" serious injuries.
- No major airline involved.
- Statement from the pilot documenting that no mechanical malfunctions or safety issues were known.
- Lack of obvious safety issues.
- Lack of high public or industry visibility.

Incident Investigation: This category defines occurrences involving one or more aircraft in which there is a hazard or potential hazard to safety, but the event is not classified as an accident because of the degree of injury or the extent of damage, or because the circumstances of the injury or damage fall outside the definition of an accident contained in 49 CFR 830.2. Incident investigations cover a broad range of events and may include the following:

- Damage to an aircraft that does not occur while passengers are on board.
- Runway incursion.
- Pilot deviation.
- Near midair collision.
- Aircraft malfunction.

Aviation Safety	FISCAL YEAR 2016 Budget Request
	0 1

When the NTSB conducts a full investigation of an incident, similar to an accident investigation, it determines probable cause. The NTSB focuses on those incidents that involve safety issues of a systemic, recurring nature. An incident investigation may involve investigator travel.

Limited Investigation, Public Aircraft: This category is the same as "limited investigation," defined above, except that the investigation involves a public use aircraft.

International Investigations

The United States is a signatory to the Chicago Convention on International Civil Aviation, which is administered by ICAO. The NTSB is charged with fulfilling the US obligations for accident and incident investigations in accordance with Annex 13 of this agreement in full coordination with the US Department of State. The international investigative process is critical to maintaining aviation safety in the United States and throughout the world. When an aircraft that was operated by—or designed, manufactured, or registered to—a US company has been involved in an accident in a foreign state, NTSB participation in that investigation enables the United States to ensure the airworthiness and operation of its aircraft. The NTSB has issued numerous safety recommendations to the FAA and to other organizations directly due to our participation in these foreign investigations. These recommendations result in safety improvements worldwide. ICAO Annex 13 protocols also define the NTSB engagement with international authorities whose products or operations are involved in US accidents. It is important to note that the majority of major accidents over the past 10 years in the United States have involved foreign-manufactured aircraft. This international process of collaboration plays an important role in enabling the NTSB to identify safety concerns and issue appropriate recommendations.

In FY 2014, AS launched or conducted followup travel in support of 30 international investigations. Several accidents required significant US involvement, including:

- *Malaysia Airlines flight* 17, *Boeing* 777-200, *crashed during cruise flight over eastern Ukraine, July* 17, 2014: All 298 passengers and crewmembers on board were fatally injured. The US-accredited representative launched to Kiev, Ukraine, to assist the Dutch Safety Board under the provisions of ICAO Annex 13 as the state of manufacture and design of the airplane. Travel to the accident site was not possible due to the local security situation. The US team continues to assist with the investigation.
- Air Algérie flight 5017, McDonnell Douglas MD-83, crashed near Gossi, Mali, en route to Algiers, Algeria, from Ouagadougou, Burkina Faso, July 24, 2014: All 116 passengers and crewmembers on board were fatally injured. The US-accredited representative and an NTSB recorder specialist launched to Paris, France to assist Mali investigators under the

provisions of ICAO Annex 13 as the state of manufacture and design of the airplane. Travel to the accident site was not possible due to the local security situation. The US team continues to assist with the investigation.

- *Malaysia Airlines flight MH370, Boeing 777-200, disappeared from radar, March 8, 2014:* The US team – led by a US-accredited representative and several investigators from the NTSB, along with representatives from Boeing and the FAA – launched to Kuala Lumpur to assist the Malaysian government investigation under the provisions of ICAO Annex 13 as the state of manufacture and design of the airplane. The US team continues to assist the Australian Maritime Safety Authority and the Malaysian government with the search and accident investigation. All 239 crew and passengers are presumed fatal.
- Tatarstan Airlines flight 363, Boeing 737-500, crashed while attempting to land at Kazan Airport, Kazan, Russia, November 13, 2013: All 44 passengers and six crewmembers on board were fatally injured. The US team—led by a US-accredited representative and several investigators from the NTSB, along with representatives from Boeing and the FAA—launched to the crash site to assist the Russian Interstate Aviation Committee Accident Investigation Commission under the provisions of ICAO Annex 13 as the state of manufacture and design of the airplane.

The appendix to this report provides additional information on NTSB participation in international accidents and incidents during the fiscal year.

Investigative Hearings and Forums

Crash of Asiana Airlines Flight 214 Investigative Hearing December 11, 2013

The NTSB convened a 1-day hearing to discuss the ongoing investigation into the crash of Asiana Airlines flight 214 and to gather additional factual information. The hearing focused on pilot awareness in highly automated aircraft, emergency response, and cabin safety.

Crash of UPS Flight 1354 Investigative Hearing February 20, 2014

The NTSB convened a 1-day investigative hearing to discuss the ongoing investigation into the crash of a UPS Airbus A300-600 on approach to Birmingham-Shuttlesworth International Airport in Birmingham, Alabama, on August 14, 2013, and to gather additional factual information. The hearing focused on the execution of nonprecision approaches, including initial and recurrent training; adherence to standard operating procedures and proficiency; human factors issues associated

with effective crew coordination and resource management, including decisionmaking, communication, fatigue, and fitness for duty, as well as monitoring and cross-checking; guidance and training provided to UPS crewmembers; and dispatch procedures, including the training, evaluation, roles and responsibilities of UPS dispatchers, and limitations of dispatch-related software.

Completed and Ongoing Special Investigations

Safety of Agricultural Aircraft Operations Special Investigation Report

This special investigation report describes the results of an NTSB review of 78 accidents that occurred during calendar year 2013 and involved some aspect of agricultural operations, pilot training, or other crop protection activities. Investigators gathered information in the areas of pilot work and sleep schedules, pilot training and experience, and aircraft maintenance to identify safety concerns. The NTSB issued eight safety recommendations to the FAA and the National Agricultural Aviation Research & Education Foundation, urging them to work together to develop and distribute agricultural operations-specific guidance on fatigue management, risk management, aircraft maintenance, and pilot knowledge and skills tests.

Agricultural operations, a niche group within the GA community, are subject to many safety hazards because flights are low enough to have to be concerned about obstacles such as power lines, communications towers, and meteorological evaluation towers. Although these operations have historically ranked sixth or seventh among GA sectors in terms of hours flown, they have ranked third in terms of number of annual accidents.

Recommendations: 8 new recommendations

Report adopted: May 7, 2014

Helicopter Safety (ongoing)

Since 2004, more than 1,600 accidents have occurred involving helicopters used as air ambulances, for search and rescue missions, and for commercial operations such as tour flights. As a result of these crashes, more than 500 people lost their lives and 274 were seriously injured. The NTSB added helicopter safety to its 2014 MWL under the topic, "Address Unique Characteristics of Helicopter Operations." To increase awareness of the importance of maintenance and the use of simulators for helicopter pilot training, AS developed two safety alerts that were released as part of an NTSB outreach activity at the Helicopter Association International HeliExpo in February 2014. The safety alerts were made available in

brochures and online to all attendees, and the Helicopter Association International produced two associated videos.

The safety alerts include accident summaries from completed NTSB investigations, with commentary on specific safety issues and their role in the accident; and general guidance on how to apply the lessons learned from each accident and where to find free educational resources.

Because helicopter mechanics and pilots, for the most part, work independently or for small operations, it is difficult to target them through the safety recommendation process, which is most effective at influencing larger organizations that can be held accountable for the results. Safety alerts are ideal for delivering the NTSB's message directly to focused members of the GA community.

General Aviation Weather Safety (ongoing)

The overwhelming majority of aviation-related deaths in the United States occur in GA accidents. In 2011, there were 1,466 GA accidents, of which 263 were fatal—with 444 people fatally injured. The accident rate per 100,000 flight hours remains substantially higher in GA than in commercial aviation (6.51 for GA compared to 1.5 for on-demand Part 135 operations and 0.162 for scheduled Part 121 operations). Historically, about two-thirds of all GA accidents that occur in instrument meteorological conditions are fatal—a rate much higher than the overall fatality rate for GA accidents.

Hazardous weather is a frequent cause of or contributing factor to these accidents. For example, on December 19, 2011, a Piper carrying the pilot and four passengers impacted terrain following an in-flight break up near Bryan, Texas. NTSB investigators determined that the probable cause of the five-fatality accident was the pilot's inadvertent encounter with severe weather, which caused a failure of the left wing. One of the issues identified in the investigation was the presentation of weather radar data in the cockpit, obtained through the pilot's subscription to satellite-based weather services.

The NTSB continues to examine the FAA weather information dissemination practices in recent investigations as well as the consistency of National Weather Service advisory products for the aviation community. Although having weather information available to pilots, air traffic controllers, and meteorologists is crucial, improper understanding and misuse of this information can prove just as dangerous (if not more so) as not having the information at all. Examples include pilots gaining a false sense of confidence, which may lead them unknowingly into adverse weather conditions; or air traffic controllers not effectively using the weather information they have to assist pilots in avoiding such conditions.

The NTSB has also explored hazardous weather issues in numerous GA accident investigations. Based on this body of research, we have reached out to the various operator and user groups to identify and engage more than 20 stakeholders

across several organizations, including the FAA, the National Weather Service, the National Air Traffic Controllers Association, the Aircraft Owners and Pilots Association, Lockheed Martin Flight Services, and the Air Line Pilots Association. In 2014, the NTSB conducted weather safety briefings for air traffic controllers at multiple FAA facilities to share lessons learned from its accident and incident investigations.

We continue to investigate and research ways to enhance hazardous weather communication. In May 2014, we issued four recommendations to the FAA and five recommendations to the National Weather Service focused on improving products to warn pilots of hazardous mountain wave activity and other weather hazards identified through operational use of pilot reports. The recommendations also addressed improving the dissemination of information to pilots through the use of the flight information services-broadcast data link. The NTSB continues to examine the utility of remote sensing technologies such as light detection and ranging (LIDAR) to improve the accuracy of wind information provided to pilots for takeoff and landing, and the structure of retrieving and disseminating airport runway wind information in the National Airspace System. Given the role that weather plays in GA accidents, the NTSB will continue to examine these and other weather-related safety issues.

Five General Aviation Safety Alerts

The NTSB issued five safety alerts in December 2013. GA pilots, for the most part, conduct their flight operations as individuals. Many GA aviation maintenance technicians work independently or for small shops. For these reasons, it is difficult to reach these individuals through the safety recommendations process, which is most effective at influencing larger organizations. Historically, the vast majority of safety recommendations that target GA have been issued to the FAA. Safety alerts are ideal for delivering education and training messages directly to the GA community.

Three safety alerts – directed to pilots, aircraft owners, and aviation maintenance technicians – addressed the importance of inspecting fiber or nylon self-locking nuts, maintaining and replacing restraint systems as necessary, and checking emergency locator transmitter switch position and maintenance. Two safety alerts for pilots addressed the importance of accounting for and securing objects in the cockpit, recognizing weather conditions favorable for carburetor icing, and properly responding when such icing occurs.

HIGHWAY SAFETY TAB

HIGHWAY SAFETY

	<u>(\$000s)</u>	FTEs
FY 2015 Estimate	\$6,518	27
FY 2016 Request	\$6,594	27
Increase/Decrease	\$76	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The Office of Highway Safety (HS) investigates accidents that have a significant impact on public confidence in highway transportation safety, highlight national safety issues, or generate high public interest and media attention. Such accidents may include collapses of highway bridge or tunnel structures, mass casualties and injuries on public transportation vehicles (such as motorcoaches and school buses), and collisions at highway–railroad grade crossings. We are also interested in accidents that involve new safety issues or technologies. HS conducts studies based on trends emerging from NTSB accident investigations and from other research and accident data to identify common risks or underlying causes of accidents.

The NTSB is the only organization that performs independent, comprehensive, and transparent multidisciplinary investigations to determine the probable cause of highway accidents, with the objective of making recommendations to prevent similar accidents. Our investigations restore public confidence in the nation's transportation systems and provide policymakers with unbiased analysis.

 ${\rm HS}\,{\rm is}\,{\rm organized}$ into the Investigations ${\rm Division}\,{\rm and}\,{\rm the}\,{\rm Report}\,{\rm Development}$ Division.

Investigations Division

The Investigations Division manages the multidisciplinary go-teams that are launched to accident sites to collect the factual and analytical information for

investigations. Currently, major accident investigations are conducted by one of two teams, with six investigators on each team (for a total of 12 investigators). Each team is led by an IIC and includes five other investigators with expertise in vehicle, highway, human performance, survival, and motor carrier factors. To enhance geographic coverage and reduce response time, team members are located throughout the country, including in Colorado, Delaware, Massachusetts, Texas, and Washington, DC.

HS staff is augmented with personnel from other NTSB offices, who provide expertise in vehicle simulations, medical issues, occupant protection, fire science, metallurgy/materials, hazardous materials, statistical data analysis, video analysis, communications (accident notification), public/government/family affairs, and recommendations followup.

Report Development Division

The Report Development Division manages the development of NTSB accident investigation reports. Project managers and writer-editors are responsible for managing the report production process. Tasks include reviewing public docket information provided by the investigators for accuracy and completeness, researching and developing national highway safety issues based on this information, and writing and editing the report. This division is also responsible for managing public hearings and forums on national highway safety.

Accomplishments and Workload

Completed Accident Investigation Reports and Briefs October 1, 2013–September 30, 2014

Collapse of Interstate 5 Skagit River Bridge Following Strike by Oversize Vehicle Mount Vernon, Washington May 23, 2013 Highway Accident Report

About 7:05 p.m. local time on May 23, 2013, a Kenworth truck-tractor in combination with a flatbed semitrailer hauling an oversize load was traveling south on Interstate 5 near Mount Vernon. The oversize combination vehicle had a permit for the route of travel and was being led by the pilot/escort vehicle, a Dodge Ram pickup truck. As the combination vehicle traveled across the bridge above the Skagit River, it struck the bridge structure. Span 8 of the 12-span bridge collapsed as a result of the contact damage. Two passenger vehicles fell into the

river. Eight vehicle occupants were involved in the bridge span collapse; three received minor injuries and five were uninjured.

The NTSB determined that the probable cause of the Interstate 5 Skagit River bridge span collapse was a strike to the bridge structure by an oversize combination vehicle that failed to travel in a lane with adequate overhead clearance due to deficiencies in the interdependent system of safeguards for oversize load movements. These deficiencies included (1) insufficient route planning by Mullen Trucking LP and the oversize combination vehicle driver; (2) failure of the certified pilot/escort vehicle driver to perform required duties and to communicate potential hazards, due in part to distraction caused by cell phone use; and (3) inadequate evaluation of oversize load permit requests and no provision of low-clearance warning signs in advance of the bridge by the Washington State Department of Transportation.

Recommendations: 18 new recommendations

Report adopted: July 15, 2014

Highway-Railroad Grade Crossing Collision Midland, Texas November 15, 2012 Highway Accident Report

About 4:35 p.m. local time on November 15, 2012, a Union Pacific Railroad (UP) freight train, consisting of four locomotives and 84 loaded cars, collided with a flatbed parade float at a highway–railroad grade crossing in Midland. The parade float was occupied by 12 veterans and their spouses and was escorted by two law enforcement vehicles. As a result of the collision, four float passengers and a sheriff's deputy were killed and 11 were injured.

The NTSB determined that the probable cause of the collision was the failure of the city of Midland and the parade organizer, Show of Support, Military Hunt, Inc., to identify and mitigate the risks associated with routing a parade through a highway-railroad grade crossing. Contributing to the collision was the lack of traffic signal cues to indicate to law enforcement that an approaching train had preempted the normal highway traffic signal sequence at the intersection of South Garfield Street and West Front Avenue. Further contributing to the collision was an expectancy of safety on the part of the float driver, created by the presence of law enforcement personnel as escorts and for traffic control, leading him to believe that he could turn his attention to his side-view mirrors to monitor the well-being of the parade float occupants as he negotiated a dip in the roadway on approach to the grade crossing.

Recommendations:6 new recommendationsReport adopted:November 5, 2013

Multivehicle Collision and Subsequent Vehicle Fall From Chesapeake Bay Bridge Annapolis, Maryland July 19, 2013 Highway Accident Brief

On July 19, 2013, about 8:24 p.m. local time, a Chrysler Sebring was traveling eastbound on US Route 50/301 near Annapolis. Less than a mile past the toll plaza, after vehicles had merged from 11 toll lanes into two travel lanes, traffic began to slow as the bridge ascended above the Chesapeake Bay and curved to the left. The Chrysler was in the right lane and had reduced speed due to the traffic queue when it was struck from behind by an International truck-tractor and refrigerated semitrailer combination unit traveling 47 mph. The truck-tractor pushed the Chrysler into the adjacent concrete barrier and then collided with a Mazda CX-5. During the collision sequence, the Chrysler was pushed up onto and then rode along the top of the barrier wall, before falling approximately 27 feet into the bay and coming to rest in 7 feet of water. The driver of the Chrysler received minor injuries. She was able to swim to one of the nearby bridge piers, from which she was rescued and transported to an area hospital. The other drivers and one vehicle occupant were uninjured.

The Maryland Transportation Authority now requires headlight use on both the eastbound and westbound spans at all times. The state also improved speed limit signage and speed transition areas, installed mounted static signs with flashing lights to be illuminated during congestion or heavy traffic to warn of the potential for stopped vehicles on the bridge, installed mounted electronic digital speed readout signs ("YOUR SPEED IS") at strategic locations on the bridge, and installed a "DO NOT TAILGATE" sign on the eastbound bridge approach to be illuminated during congestion or heavy traffic.

Recommendations: None Brief adopted: March 14, 2014

Federal Motor Carrier Safety Oversight Multiple accident locations Safety Recommendation Letter

The NTSB investigated four multifatality commercial motor vehicle accidents that occurred between December 30, 2012, and June 13, 2013, which collectively resulted in 25 deaths and 73 injured. Each crash raised safety issues about the oversight of US motorcoach and trucking industry operations by the Federal Motor Carrier Safety Administration (FMCSA). The Pendleton, Oregon, motorcoach crash (December 30, 2013) might have been prevented if the FMCSA oversight of the motor carrier had identified the obvious safety problems that were

enumerated in a postcrash imminent hazard order. The NTSB investigation of the second motorcoach crash, in San Bernardino, California (February 3, 2013), found that the FMCSA had conducted compliance reviews on the motor carrier without making a complete review of its business records. In addition, the compliance review immediately prior to the crash did not include the inspection of any vehicles. The third and fourth crashes – in Elizabethtown, Kentucky (March 2, 2013), and Murfreesboro, Tennessee (June 13, 2013) – involved commercial truck operations. The NTSB investigation revealed that the FMCSA onsite focused compliance reviews of the commercial truck operators conducted prior to the crashes failed to uncover obvious safety deficiencies.

As a result of these four commercial motor vehicle accident investigations, the NTSB made recommendations to the DOT calling for an audit of the FMCSA to determine why safety inspectors were not identifying all violations of safety regulations during compliance reviews, why quality assurance measures were not fully effective in assessing the accuracy of the reviews, and the overall effectiveness of focused compliance reviews.

Recommendations: 2 new recommendations Letter issued: November 5, 2013

Location	Date	Description	Fatalities
Davis, OK	09/26/2014	Tractor-trailer crossed center median and collided with mid-sized bus	4
Cranbury, NJ	06/07/2014	Wal-Mart tractor-trailer combination unit collided with limousine van and four other vehicles	1
Orland, CA	04/10/2014	FedEx tractor-trailer combination unit crossed center median and collided with motorcoach traveling in opposite direction	10
Centerville, LA	02/15/2014	Passenger vehicle experienced tire-tread separation, crossed highway median, and collided with school bus (major investigation to be incorporated into special investigation on tire safety)	4
Naperville, IL	01/27/2014	Combination vehicle collided with disabled truck- tractor semitrailer and two other vehicles stopped in traffic lane	1
Rosedale, MD	05/28/2013	Roll-off truck collided with freight train at grade crossing, resulting in train derailment, postcrash fire, and explosion	0

Ongoing Major Highway Accident Investigations as of September 30, 2014

Ongoing Special Investigations as of September 30, 2014

Commercial Vehicle Onboard Video Systems Safety Report

NTSB investigators acquired valuable information regarding vehicle dynamics, occupant motion, injury mechanisms, and seat belt usage from the video systems installed on the school bus involved in a collision in Port St. Lucie, Florida (March 26, 2012), and on the motorcoach involved in a collision in Kearney, Nebraska (October 6, 2011).

This safety study focuses on commercial vehicle onboard video systems as they relate to the evaluation of both driver and passenger behaviors and collision analysis. The video analysis and subsequent extensive injury documentation from the Port St. Lucie investigation are expected to advance biomechanical and pediatric trauma-based research.

Technology to Prevent Rear-End Collisions Special Investigation Report

NTSB investigators have launched to seven major rear-end accidents in the past several years, resulting in a combined 29 fatalities and 77 injured. A total of 37 vehicles were involved in these collisions, in Annapolis, Maryland (July 19, 2013); Murfreesboro, Tennessee (June 13, 2013); Elizabethtown, Kentucky (March 3, 2013); Springfield, Virginia (December 27, 2012); Paynes Prairie, Florida (January 29, 2012); Kit Carson, Colorado (October 13, 2011); and Casper, Wyoming (December 5, 2009). These accidents are being combined into a special investigation report on the use of forward collision avoidance technology as a means of preventing future crashes.

Passenger Vehicle Crashes Following Tire Disablements Special Investigation Report

NTSB investigators launched to multiple-fatality crashes in Centerville, Louisiana (February 15, 2014), and Lake City, Florida (February 21, 2014), that were initiated by tire tread separation events. These accidents are being combined into a special investigation report on tire safety, examining safety issues such as tire maintenance, tire aging, the recall process, and crash prevention technology.

MARINE SAFETY TAB

MARINE SAFETY

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$4,129	17
FY 2016 Request	\$4,177	17
Increase/Decrease	\$48	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The Office of Marine Safety (MS) investigates major marine accidents on or under the territorial waters of the United States, including accidents involving US merchant vessels and those involving both US public and nonpublic vessels in the same casualty. In addition, the office investigates selected catastrophic marine accidents or those of a recurring nature.

The USCG conducts preliminary investigations of all marine accidents and notifies the NTSB if an accident qualifies as a major marine casualty, which is defined as resulting in at least one of the following:

- Six or more fatalities
- Loss of a self-propelled vessel of 100 or more gross tons
- Property damage of more than \$500,000
- Serious threat to life, property, or the environment as a result of hazardous materials.

MS investigates and determines the probable cause of all major marine casualties. In select cases, the office launches a full investigative team and presents the investigative product to the Board. All other major marine casualties are investigated by the USCG, and MS launches a marine investigator to the scene to gather sufficient factual information to develop a marine accident brief. The majority of these brief investigation reports are adopted by MS director approval through delegated authority.

The NTSB is the only organization that performs independent, comprehensive, and transparent multidisciplinary investigations to determine the probable cause of a marine accident, with the objective of making recommendations to prevent similar accidents. The thoroughness and independence of these investigations restore public confidence in our transportation systems and provide policymakers with unbiased analysis.

MS is also responsible for overall management of the NTSB international marine safety program, under which we investigate major marine casualties involving foreign-flagged vessels in US territorial waters and US-flagged vessels involved in major marine casualties anywhere in the world. In the past 5 years, accidents involving foreign-flagged vessels have accounted for about 30 percent of the NTSB's marine accident investigations. MS also participates with the USCG in investigating serious marine casualties involving foreign-flagged vessels in international waters, which include cruise ships. Every year, more than 10 million US passengers are carried on board foreign-flagged cruise ships.

The international program involves reviewing US position papers related to marine accident investigations and participating in select International Maritime Organization (IMO) meetings. The NTSB also coordinates with other US and foreign agencies to ensure consistency with IMO conventions, most notably in joint US– flag state marine accident investigations. Further, we cooperate with other accident investigation organizations worldwide, such as the Marine Accident Investigators' International Forum, and we track developments in marine accident investigation and prevention. The NTSB participated in IMO meetings on the marine casualty investigations code and its procedures; certification and training standards for seafarers; technical standards and requirements for voyage data recorders; lifesaving equipment and appliance standards for vessels; and technical and operational machinery, electrical, seakeeping, and stability vessel standards.

MS is organized into two divisions: Major Investigations and Product Development.

Major Investigations Division

The Major Investigations Division manages the multidisciplinary go-teams that are launched to accident sites to collect factual information. Currently, major accident investigations are conducted by one of three teams, with three or four investigators on each team (for a total of 12 investigators). Each team is led by an IIC and includes investigators with expertise in nautical operations, marine engineering/naval architecture, survival factors, and human factors.

Product Development Division

The Product Development Division manages the investigative quality of marine accident reporting. The division consists of technical writer-editors responsible for drafting and editing major marine accident reports, marine accident briefs, digests/summaries of marine accident briefs, safety recommendation letters, special investigation reports, responses to notices of proposed rulemaking, and general correspondence. Staff also reviews information for the public docket provided by the investigative specialists and researches national marine safety issues based on this information.

Accomplishments and Workload

Completed Accident Investigation Reports and Briefs October 1, 2013–September 30, 2014

Allision of Passenger Vessel *Seastreak Wall Street* With Pier 11 New York City, New York January 9, 2013 Marine Accident Report

The *Seastreak Wall Street*, a high-speed passenger ferry serving commuters traveling between New Jersey and New York City, struck a Manhattan pier at 12 knots on the morning of January 9, 2013 – the third significant ferry accident to occur in the New York Harbor area in the past 10 years. Of the 331 people on board, 79 passengers and one crewmember were injured, four of them seriously.

The NTSB determined that the probable cause of the *Seastreak Wall Street's* allision with the pier was the captain's loss of vessel control because he was unaware the propulsion system was in backup mode. In addition, his usual method of transferring control from one bridge station to another during the approach to the pier did not allow sufficient time and distance to react to the loss of vessel control. Contributing to the accident was Seastreak LLC's ineffective oversight of vessel operations. Contributing to the severity of injuries was Seastreak LLC's lack of procedures to limit passenger access to stairwells on the *Seastreak Wall Street* during potentially high-risk situations such as vessel docking and undocking.

Recommendations: 10 new recommendations, including 1 safety alert

Report adopted: April 8, 2014

Sinking of Oceanographic Research Vessel *Seaprobe* Gulf of Mexico, south-southeast of Mobile, Alabama January 18, 2013 Marine Accident Brief

About 0315 local time on January 18, 2013, the oceanographic research vessel *Seaprobe* sank in the Gulf of Mexico, about 130 nautical miles south-southeast of Mobile. Before the vessel sank, all 12 crewmembers evacuated to inflatable liferafts from which the USCG rescued them shortly thereafter. Three crewmembers were injured.

The NTSB determined that the probable cause of the flooding and subsequent sinking of the *Seaprobe* was the decision of the vessel owner to delay making permanent repairs to the starboard-side exhaust trunk and covering six of the vessel's freeing ports, leaving the *Seaprobe* susceptible to downflooding from boarding seas. Contributing to the accident was the owner's failure to comply with the vessel's safety management system and mandatory load line regulations.

Recommendations: None

Brief adopted: September 25, 2014

Capsizing of Towing Vessel *Megan McB* Lock and Dam 7, Mississippi River near La Crescent, Minnesota July 3, 2013 Marine Accident Brief

On July 3, 2013, at 0558 local time, the uninspected towing vessel *Megan McB* lost engine throttle control while the crew was trying to maneuver the vessel into the main lock of Lock and Dam 7 on the Mississippi River, at mile marker 702.5. The strong river current swept the *Megan McB* into gate no. 1 of the dam, where it became pinned and capsized. One crewmember died in the accident. The vessel was later refloated; damage was estimated at \$500,000.

The NTSB determined that the probable cause of the capsizing of towing vessel *Megan McB* was the replacement pilot's unfamiliarity with the vessel's electronic engine control throttles, which resulted in his inability to avoid gate no. 1 of Lock and Dam 7. Contributing to the capsizing was Brennan Marine's lack of effective procedures to ensure that the *Megan McB* was operated by a replacement pilot familiar with the electronic engine control throttles, which were unique to this one vessel in the company fleet.

Recommendations: None

Brief adopted: September 4, 2014

Capsizing and Sinking of Fishing Vessel *Advantage* Gulf of Alaska, southeast of Cape Barnabas, Kodiak Island, Alaska August 31, 2012 Marine Accident Brief

The uninspected fishing vessel *Advantage* was on a routine transit from Kodiak Harbor, Alaska, to fishing grounds with a load of empty cod pots when it sank about 14 nautical miles southwest of Cape Barnabas at 0030 local time on August 31, 2012. A USCG rescue helicopter retrieved three of the four crewmembers. One person was never found and was presumed dead, and the vessel's captain later died. About 3,453 gallons of diesel fuel was on board the vessel when it sank.

The NTSB determined that the probable cause of the capsizing and sinking of the fishing vessel *Advantage* was a severe heel to port, followed by immediate downflooding. The reason for the vessel's loss of stability could not be determined.

Recommendations: None Brief adopted: August 20, 2014

Sinking of Fishing Vessel *Long Shot* Gulf of Mexico, southwest of Panama City, Florida November 15, 2013 Marine Accident Brief

On November 15, 2013, as the 72-foot-long commercial fishing vessel *Long Shot* was returning from a 2-week fishing trip, its main propulsion diesel engine and electrical generator engines failed. Without propulsion and steering to control the vessel's heading, boarding seas hit the stern, and an aft compartment flooded. The crew tried for several hours to save the sinking vessel, but they were then evacuated by the USCG. No one was injured. The *Long Shot*, valued at \$150,000, was a total loss.

The NTSB determined that the probable cause of the sinking of fishing vessel *Long Shot* was water contamination of its fuel oil storage tanks, which led to failure of the propulsion and electrical generator engines and flooding of the lazarette compartment in heavy seas. Contributing to the sinking was excessive water leakage at the rudder post packing gland, which led to the initial flooding of the lazarette compartment.

Recommendations: None Brief adopted: July 25, 2014 Fire On Board Motor Yacht Ocean Alexander 85E06 San Juan Islands, Washington July 10, 2013 Marine Accident Brief

On July 10, 2013, the newly built motor yacht *Ocean Alexander 85E06* was moored, unmanned, and on display for purchase at the Roche Harbor Resort Marina when a fire broke out in a forward compartment about 1000 local time. Efforts to extinguish the fire were unsuccessful, and the flames consumed the vessel. In addition, the vessel partially sank due to flooding from firefighting activities. No one was injured, but about 400 gallons of marine diesel fuel spilled into the waterway. The yacht, valued at \$3,691,660, was a total loss.

The NTSB determined that the probable cause of the fire on board the *Ocean Alexander 85E06* was an electrical fault of an unknown source, located in the vessel's forward accommodation area.

Recommendations: None Brief adopted: July 15, 2014

Grounding and Sinking of Towing Vessel *Stephen L. Colby* Upper Mississippi River, LeClaire, Iowa November 25, 2013 Marine Accident Brief

On November 25, 2013, about 1600 local time, the uninspected towing vessel *Stephen L. Colby* struck hard bottom in the Upper Mississippi River, near mile marker 497, and partially sank off the right descending riverbank in LeClaire. Six of the nine crewmembers on board made it to the riverbank on their own. A nearby towing vessel rescued the remaining three crewmembers from their partially sunken vessel. No one was injured.

The NTSB determined that the probable cause of the grounding and sinking of the *Stephen L. Colby* was the failure of the master and mate to ensure sufficient underkeel clearance for the intended transit through the accident area.

Recommendations: None Brief adopted: July 15, 2014 Fire and Explosions On Board Towing Vessel *Safety Runner* and Kirby Barges 28182 and 28194 Mobile River, Alabama April 24, 2013 Marine Accident Brief

On April 24, 2013, at 2030 local time, the towing vessel *Safety Runner* docked on the Mobile River in Mobile, alongside two Kirby barges that were having their tanks cleaned. Shortly thereafter, flammable vapors being vented from the barges' open tank hatches entered the engine room of the *Safety Runner* and ignited. The fire spread from the towing vessel to the barges, resulting in explosions. Three persons sustained serious burn injuries. The total damage to the vessel and barges was estimated at \$5.7 million.

The NTSB determined that the probable cause of the fire and explosions involving the towing vessel *Safety Runner* and Kirby barges 28182 and 28194 was the failure of the Oil Recovery Company facility to isolate tank-cleaning operations from sources of ignition. Contributing to the accident was the Oil Recovery Company's failure to provide its employees with tank-cleaning training and procedures that followed industry standards and government regulations for reducing the risk of fire during tank-cleaning operations.

Recommendations: None

Brief adopted: July 14, 2014

Allision of Towing Vessel *Dale A. Heller* With Marseilles Dam Illinois River, Marseilles, Illinois April 18, 2013 Marine Accident Brief

On April 18, 2013, about 1740 local time, the uninspected towing vessel *Dale A. Heller* was downbound on the Illinois River. The vessel was pushing a 14-barge tow and attempting to enter the Marseilles Canal, adjacent to the Marseilles Dam, when it encountered a strong cross current at mile marker 247. Despite the assistance of three additional towing vessels, the *Dale A. Heller* was unable to get the tow past the dam and into the safety of the canal. Several barges broke away, struck and damaged the dam's gates, and then sank. The accident likely exacerbated rain-related flooding in the nearby city of Marseilles. No one was injured in the allision; however, the damage to the barges and the dam totaled nearly \$54 million.

The NTSB determined that the probable cause of the allision of the *Dale A. Heller* tow with the Marseilles Dam was the decision by all involved parties to proceed with the passage of the tow during a period of record high water and significant risk. Contributing to the accident was the failure of the Marseilles Dam

lockmaster and the *Dale A. Heller* captain to communicate effectively about the actual positioning of the dam's gates before and during the transit.

Recommendations: None Brief adopted: June 13, 2014

Engine Room Fire On Board Fishing Vessel Arctic Storm North Pacific Ocean, West of Aberdeen, Washington May 20, 2013 Marine Accident Brief

On the afternoon of May 20, 2013, a fire broke out in the engine room of the uninspected fishing vessel *Arctic Storm* as it was under way about 46 nautical miles west of Aberdeen, conducting fish processing operations. The crew extinguished the fire through the combined use of portable extinguishers, fixed suppression, and fire hoses. No injuries or pollution resulted. The estimated damage to the *Arctic Storm* was \$5 million.

The NTSB determined that the probable cause of the fire on board the *Arctic Storm* was a fractured fitting on a fuel oil vent valve, located on the main propulsion engine, which resulted in fuel oil spraying onto a hot engine surface and igniting.

Recommendations: None Brief adopted: May 29, 2014

Grounding of Commercial Towing Vessel *Justice* Hog Island Channel, Buzzards Bay, Massachusetts March 21, 2013 Marine Accident Brief

The towing vessel *Justice* was heading into Buzzards Bay with five crewmembers on March 21, 2013, when it grounded on a hard, rocky bottom southwest of Cape Cod Canal just outside Hog Island Channel. The impact, at 0001 local time, sheared the starboard stern drive from the vessel and resulted in the discharge of 232 gallons of gear oil. The vessel docked 15 minutes later without further incident using its remaining port stern drive. No one was injured. The estimated damage to the *Justice* exceeded \$1 million.

The NTSB determined that the probable cause of the grounding of the commercial towing vessel *Justice* in Hog Island Channel was the mate's ineffective use of the vessel's autopilot to maintain a course within the navigable channel and his delay in taking manual control as the vessel approached charted hazards.

Recommendations: None

Brief adopted: May 29, 2014

Sinking of Towing Vessel *Delta Captain* Pacific Ocean, West of Point Sur, California April 13, 2013 Marine Accident Brief

On April 13, 2013, about 1455 local time, the uninspected towing vessel *Delta Captain*, towing the deck barge *DB* 5, experienced uncontrolled flooding in its engine room and sank 13 nautical miles west of Point Sur. The four crewmembers abandoned the vessel within about 10 minutes of the flooding and were later rescued by the USCG. No one was injured, but the vessel sank in deep water and was not recovered. Its estimated value was \$2.5 million.

The NTSB determined that the probable cause of the sinking of the *Delta Captain* was uncontrolled flooding of the steering gear space and engine room from an undetermined source in the steering gear space.

Recommendations: None Brief adopted: April 28, 2014

Allision of Tanker *Wawasan Ruby* With CSX Bayside Coal Pier Baltimore, Maryland August 25, 2012 Marine Accident Brief

About 1245 local time, on August 25, 2012, the 477-foot-long tanker *Wawasan Ruby*, with 24 persons on board, allided with the CSX Bayside coal pier in Baltimore Harbor while the tanker was making a turn toward its destination berth. One person on the pier was injured. The damage to the pier exceeded \$2 million; the *Wawasan Ruby* sustained an estimated \$15,000 in damage.

The NTSB determined that the probable cause of the allision of the *Wawasan Ruby* with the CSX Bayside coal pier was the high rate of speed at which the pilot and the master were operating the vessel while attempting a 70-degree turn into Curtis Creek.

Recommendations: None Brief adopted: April 15, 2014

Sinking of Fishing Vessel Allison C Point Piedras Blancas, California September 20, 2012 **Marine Accident Brief**

On September 20, 2012, about 2030 local time, the 76-foot-long commercial fishing vessel Allison C sank west-southwest of Point Piedras Blancas, about 125 miles off the coast of California, after the vessel's engine room flooded. The three crewmembers abandoned the Allison C and were rescued without injury. The value of the vessel and its cargo was estimated at \$277,000.

The NTSB determined that the probable cause of the sinking of the Allison C was a loss of hull integrity from a leak in the engine room, which led to uncontrollable flooding.

Recommendations: None

Brief adopted: April 15, 2014

Foundering of the Fishing Vessel Moonlight Maid Gulf of Alaska, south of Seward September 20, 2012 **Marine Accident Brief**

The wooden-hulled uninspected fishing vessel Moonlight Maid was transiting to Kodiak, Alaska, in heavy seas in the vicinity of Seal Rocks, Chiswell Islands, when it sprung a plank and began flooding on September 20, 2012. The vessel's bilge pumps were unable to keep up with the rate of flooding. The crew of four made a Mayday call, donned survival suits, and abandoned ship into a life raft as the boat foundered. All were later hoisted to safety by a USCG helicopter. No one was injured. The sinking resulted in an estimated loss of \$400,000.

The NTSB determined that the probable cause of the foundering of the *Moonlight Maid* was the detachment of portside hull planking in heavy weather, which resulted in uncontrolled flooding. Contributing to the hull failure was inadequate maintenance of the aging wooden vessel.

Recommendations: None Brief adopted: March 14, 2014

Engine Room Fire On Board Towing Vessel *Marguerite L. Terral* Lower Mississippi River, near Hickman, Kentucky June 9, 2012 Marine Accident Brief

On June 9, 2012, about 1705 local time, the uninspected towing vessel *Marguerite L. Terral*, with six crewmembers on board, was pushing 12 empty barges on the Mississippi River near Hickman, when its port engine caught fire. The crew tried unsuccessfully to extinguish the fire before evacuating onto one of the barges. No one was injured, and no pollution was reported. The damage to the *Marguerite L. Terral* was estimated at \$2.6 million.

The NTSB could not determine the origin of the engine room fire on board the *Marguerite L. Terral*. Contributing to the extent of the fire damage was the crew's failure to set fire boundaries, shut down the ventilation, and use the onboard fire suppression equipment effectively.

Recommendations: None Brief adopted: March 10, 2014

Sinking of Tall Ship *Bounty* Atlantic Ocean southeast of Cape Hatteras, North Carolina October 29, 2012 Marine Accident Brief

On October 29, 2012, the tall ship *Bounty* sank about 123 nautical miles off Cape Hatteras while attempting to transit through the forecasted path of Hurricane Sandy. One crewmember died, three of the 16 people on board were seriously injured, and the captain was never found. The vessel's estimated value was \$4 million.

The NTSB determined that the probable cause of the sinking of the *Bounty* was the captain's reckless decision to sail the vessel into the well-forecasted path of Hurricane Sandy, which subjected the aging vessel and the inexperienced crew to conditions from which the vessel could not recover. Contributing to the sinking was the lack of effective safety oversight by the vessel organization.

Recommendations: None Brief adopted: February 6, 2014 Breakaway of Cruise Ship Carnival Triumph From its Moorings, and Subsequent Collision With Dredge Wheeler and Towing Vessel Noon Wednesday Mobile, Alabama April 3, 2013 Marine Accident Brief

About 1328 local time on April 3, 2013, the cruise ship *Carnival Triumph* was undergoing repairs at the BAE Systems shipyard when the Port of Mobile experienced high wind gusts. The vessel broke free from its moorings and drifted across the Mobile River, where it collided with the moored dredge Wheeler. A responding towing vessel, Noon Wednesday, became pinned between the cruise ship and the dredge. One shipyard employee died in the accident; another was injured. The total damage exceeded \$2.9 million.

The NTSB determined that the probable cause of the breakaway of the Carnival Triumph from its moorings and the subsequent collision with the Wheeler and the *Noon Wednesday* was the successive failure of multiple mooring bollards, which were known by BAE Systems to be in poor condition with an undetermined mooring load capability.

Recommendations: None

January 23, 2014 Brief adopted:

Sinking of Offshore Supply Vessel Ricky B Gulf of Mexico, south of Marsh Island, Louisiana May 30, 2013 **Marine Accident Brief**

On May 30, 2013, at 0702 local time, the offshore supply vessel *Ricky B* sank about 24 nautical miles south of Marsh Island, Louisiana, while being towed. The three crewmembers had abandoned the *Ricky B* earlier and boarded a good samaritan vessel, from which they were subsequently transferred to a nearby manned oil platform. No one was injured. The Ricky B was later refloated. Its damage was estimated at \$520,000.

The NTSB determined that the probable cause of the sinking of the *Ricky B* was the crew's failure to adequately assess the severity of the flooding rate through the starboard shaft seal gland and take prudent action to mitigate the situation.

Recommendations: None Brief adopted: January 21, 2014

Collision Between Bulk Carriers *Mary Ann Hudson* and *Star Grip* Houston Ship Channel, Houston, Texas June 6, 2012 Marine Accident Brief

On June 6, 2012, at 0530 local time, while the underway bulk carrier *Mary Ann Hudson* was being moved from city dock 21 to city dock 29 in the Houston Ship Channel, it collided with the moored bulk carrier *Star Grip*. No one was injured, and no pollution was reported. However, the two vessels sustained damage totaling more than \$500,000.

The NTSB determined that the probable cause of the collision between the *Mary Ann Hudson* and the *Star Grip* was the pilot's ineffective handling of the *Mary Ann Hudson* and his ineffective use of the two tugboats to maneuver the vessel around the *Star Grip*'s crane arms, which were extending into the navigable waterway.

Recommendations: None

Brief adopted: December 18, 2013

Allision of Tanker *Overseas Reymar* With San Francisco-Oakland Bay Bridge San Francisco Bay, California January 7, 2013 Marine Accident Brief

The 752-foot-long tanker *Overseas Reymar* allided with the fendering system of the San Francisco–Oakland Bay Bridge's Echo tower on January 7, 2013, at 1118 local time, while outbound in San Francisco Bay. No one was injured, and no pollution was reported. Damage to the vessel was estimated at \$220,000, and the cost to repair the tower's fendering system was estimated at \$1.4 million.

The NTSB determined that the probable cause of the *Overseas Reymar* allision with the San Francisco–Oakland Bay Bridge was the pilot's decision to alter course from the CD span to the DE span without sufficient time to avoid alliding with the bridge's Echo tower, and the master's failure to properly oversee the pilot by engaging in a phone conversation during a critical point in the transit.

Recommendations: None Brief adopted: November 7, 2013

Sinking of Commercial Fishing Vessel Mary Kay Dixon Entrance, near Cape Chacon, Prince of Wales Island, Alaska July 26, 2012 **Marine Accident Brief**

On July 26, 2012, about 2300 local time, the commercial fishing vessel Mary Kay sank near Cape Chacon as a result of flooding in the starboard fish hold, the lazarette, and the engine room. The four crewmembers safely abandoned the vessel and were rescued.

The NTSB determined that the probable cause of the sinking of the Mary Kay was the captain's failure to identify and correct the source(s) of the throughhull leaks.

Recommendations: None Brief adopted: October 31, 2013

Location	Date	Description	Fatalities
New Orleans, LA	08/13/2014	UTV Cory Michael allided with bridge	1
Gretna, LA	08/12/2014	MV Flag Gangos collided with tanker barge and tanker Pamisos	0
Waterproof, LA	07/18/2014	UTV Riley Elizabeth collided with USACE barge	0
Houston Ship Channel, TX	03/22/2014	Bulk carrier Summer Wind and towing vessel Miss Susan collided	0

Ongoing Major Marine Accident Investigations as of September 30, 2014

Ongoing Marine Accident Briefs as of September 30, 2014 (brief report without Board vote or meeting)

Location	Date	Description	Fatalities
Southwest Pass, LA	09/23/2014	FV Christopher Joy sank	2
Virgin Passage, USVI	09/23/2014	USCG cutter <i>Key Largo</i> collided with FV Sea Shepard	0
Pascagoula, MI	08/24/2014	FV Capt Le collided with Gloria Mary	0
Houston Ship Channel, TX	07/14/2014	MV Anna Smile allided with grain elevator on dock	0
Destruction Island, WA	07/14/2014	Pleasure craft La Pietra caught fire and sank	0
St. Louis, MO	07/01/2014	UTV <i>Jim Marko</i> sank	0
Point Conception, CA	06/08/2014	Barge <i>Nash</i> sank	0
Anacortes, WA	05/18/2014	Recreational yacht Baden partially capsized	0
Houma, LA	02/16/2014	OSV Tristan Janice allided with oil platform	0
Straits of Mackinac, MI	01/05/2014	USCG cutter <i>Hollyhock</i> and bulk carrier <i>Mesabi Miner</i> collided	0
Grays Harbor, WA	12/28/2013	FV <i>Juno</i> caught fire	0
ICW, LA	12/07/2013	UTV Bayou Lady allided with bridge	0
Grande Isle, LA	11/28/2013	OSV Ocean Patriot caught fire	0
Lung Island, AK	08/14/2013	FV Pacific Queen sank	0
Cordova, AK	07/28/2013	Tug Krystal Sea collided with USCG cutter Sycamore	0
Southwest Pass, LA	06/14/2013	OSV Celeste Ann allided with oil platform	0
Detroit, MI	05/12/2013	Bulk carrier Herbert C Jackson allided with bridge	0
Baltimore Harbor, MD	05/04/2013	Towing vessel Kaleen McAllister sank	0
Esquimalt, BC, Canada	04/23/2013	FV American Dynasty and HMCS frigate Winnipeg collided	0
Portsmouth, NH	04/01/2013	Tanker Harbour Feature allided with bridge	0
Ohio River	03/12/2013	Towing vessel Shanon E. Settoon allided with barge SMI572	0
Kodiak Island, AK	12/29/2012	Shell rig Kulluk ran aground	0

Investigative Hearings and Forums

Public Forum on Cruise Ship Safety March 25–26, 2014

The NTSB has an ongoing focus on cruise ship safety, considering the large numbers of passengers and crews and the high potential for fatalities and injuries when accidents occur. The NTSB has issued recommendations to the USCG, vessel owners and operators, classification societies, and industry groups concerning various aspects of cruise ship safety. In recent years, cruise ship safety has been in the national news due to the grounding and capsizing of the *Costa Concordia* with loss of life, including the lives of two US citizens (2012), and the fires on board the *Carnival Triumph* (2013), the *Grandeur of the Seas* (2013), the *Carnival Splendor* (2010), the Star Princess (2006), and the Carnival Ecstasy (1998), among others. In addition to these accidents, similar cases have been documented where the United States did not have a substantial interest. These include the fire and loss of propulsion on board the Royal Princess (2009), the Azamara Quest (2012), the Costa Alegra (2012), and most recently the *Pullmantur Zenith* (2013).

In March 2014, the NTSB held a 2-day public forum to review recent cruise ship accidents and related safety issues, with the support and cooperation of the USCG. The goal of the forum was to encourage dialogue among industry stakeholders, regulators, and the general public to better understand cruise ship safety. This forum closed out IMO Substantially Interested State investigations on the capsizing of a zodiac craft from the passenger vessel *Sea Spirit* off the coast of Norway (June 17, 2013), the mooring deck fire on board the cruise ship Grandeur of the Seas, Freeport, Bahamas (May 27, 2013), the engine room fire on board the cruise ship Carnival Triumph, Gulf of Mexico (February 10, 2013), and the grounding of the cruise ship Costa Concordia, Italy (January 13, 2012).

Completed Special Investigations

Special Investigation Report on Parasailing Safety

This special investigation report examines the types of accidents that occur in the parasailing industry in the United States and its territories, and the several areas where the associated risk can be mitigated. The goal of the study overall was to reduce the number of fatalities and injuries associated with parasailing and to identify relevant recommendations to enhance safety both for parasailing passengers and vessel operators. The parasailing accident investigations reviewed in the report take a focused look at the effect of combined vessel and wind speeds on towlines, the capabilities of winches affixed to the vessels, and the several

components of the flight gear involved in parasailing. Additionally, the report examines existing regulatory oversight of the parasailing industry.

Recommendations: 6 new recommendations Report adopted: June 18, 2014
RAILROAD, PIPELINE AND HAZARDOUS MATERIALS INVESTIGATIONS TAB

RAILROAD, PIPELINE AND HAZARDOUS MATERIALS INVESTIGATIONS

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$8,424	35
FY 2016 Request	\$8,523	35
Increase/Decrease	\$99	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The Office of Railroad, Pipeline and Hazardous Materials Investigations (RPH) consists of four divisions: Railroad, Pipeline and Hazardous Materials, Human Performance and Survival Factors, and Report Development. RPH investigates accidents involving railroads, pipelines, and hazardous materials, and evaluates the associated emergency response. On the basis of these investigations, the NTSB may issue safety recommendations to federal and state regulatory agencies, industry and safety standards organizations, carriers and pipeline operators, equipment and container manufacturers, producers and shippers of hazardous materials, and emergency response organizations.

Railroad Division

Since 1967, Congress has assigned the primary responsibility for railroad accident investigations to the NTSB. As in the other surface modes, we investigate and analyze selected accidents, determine their probable causes, and issue recommendations to prevent similar accidents.

The Railroad Division investigates accidents and incidents involving passenger and freight railroads, as well as commuter rail transit systems and other fixed guideway systems. These accidents are typically collisions or derailments, some of which involve fatalities, severe injuries, release of hazardous materials, and evacuation of residences. The small staff of the Railroad Division does not investigate every railroad accident reported to the Federal Railroad Administration (FRA) or every rail transit accident. To most efficiently use NTSB resources, criteria have been established to help highlight for investigation those accidents that pose significant safety issues. The division also assesses selected railroad safety issues, often based on a set of accident investigations specifically undertaken as the basis for such study. In other cases, the special studies may focus on analyses of regulations, railroad safety programs and procedures, and audit reviews of management and operations practices.

Pipeline and Hazardous Materials Division

The Pipeline and Hazardous Materials Division investigates underground and aboveground pipeline system accidents that occur during the transportation of hydrocarbon materials such as crude oil, diesel, gasoline, natural gas, propane, carbon dioxide, and ammonia. Pipeline investigations focus on accidents that involve fatalities or result in substantial property or environmental damage. This division may also investigate selected hazardous materials accidents that highlight safety issues of national importance or involve a specific accident prevention issue.

The hazardous materials staff supports investigations involving hazardous materials in all modes of transportation, including aviation, highway, rail, and marine. This work may include analyzing the performance of hazardous materials containers, such as rail tank cars, highway cargo tanks, and smaller nonbulk packaging. The division also investigates environmental response issues in all modes, including pipeline.

Human Performance and Survival Factors Division

The Human Performance and Survival Factors Division investigates the human factors in railroad, pipeline, and hazardous materials accidents. Human factors include, for example, individual actions, training, and tools; work crew resource management, oversight, and supervision; and organizational safety management and emergency response processes. The actions and decisions of those involved in emergency situations are often central to understanding accident scenarios.

Human factors occur within the context of an operational system, the boundaries of which typically extend well beyond the debris field of an accident site. Once system failures are identified and understood, the staff works to develop corresponding safety recommendations. Specific topics evaluated include drug and alcohol testing, work/rest cycles and human fatigue, training, work processes and safety climate, organizational safety culture and safety management, public awareness, and railroad survivability factors.

Report Development Division

The Report Development Division is responsible for writing and editing railroad, pipeline, and hazardous materials reports and briefs. Staff reviews, writes, and edits work products to ensure the adequacy of logic, organization, and structure. In addition, the division's editors ensure the quality of NTSB reports, responses to notices of proposed rulemaking, papers, congressional testimony, and speeches (or portions thereof) on matters pertaining to railroad, pipeline, and hazardous materials safety. The division is also responsible for document development related to transportation safety policy, guidance, protocols, applicable portions of NTSB orders, and replies to inquiries from Congress, other federal agencies, state and local agencies, industry, and the general public.

Accomplishments and Workload

Completed Railroad Accident Investigation Reports and Briefs October 1, 2013–September 30, 2014

Freight Train Derailment Columbus, Ohio July 11, 2012 Railroad Accident Brief

On July 11, 2012, at 2:03 a.m. local time, eastbound Norfolk Southern Railway Company freight train 186L809 derailed 17 cars within the city limits of Columbus. The train consisted of two leading locomotives, 97 loaded freight cars, and one empty freight car.

The NTSB determined that the probable cause of this accident was a broken rail that exhibited evidence of rolling contact fatigue.

Recommendations: None Brief adopted: September 18, 2014

Coal Train Derailment Ellicott City, Maryland August 20, 2012 Railroad Accident Brief

On August 20, 2012, about 11:54 p.m. local time, eastbound CSX Transportation (CSX) coal train U81318 derailed its first 21 cars while crossing the railroad bridge over Main Street in Ellicott City. Seven of the derailed cars fell into a public parking area

located below and north of the tracks. The remainder of the derailed cars overturned and spilled coal along the north side of the tracks. Prior to the train crossing the bridge, two people had climbed over a short wooden fence and entered CSX property without authorization. They were sitting on the bridge during the derailment and were fatally injured due to chest compression from the spilled coal.

The NTSB determined that the probable cause of the derailment was a broken rail with evidence of rolling contact fatigue.

Recommendations: None Brief adopted: July 31, 2014

Railway Employee Fatality Bedford Park, Illinois July 25, 2011 Railroad Accident Brief

A Belt Railway Company of Chicago conductor was fatally injured while coupling cars in a hump classification yard track in Bedford Park on July 25, 2011, about 12:33 a.m. local time. The conductor was found in the gage of the track between two rail cars, whose drawbars were found to be crossed. He appeared to have been pinched between the knuckle of the stationary car that was coupled to the train and the drawbar carrier of the free-rolling car.

The NTSB determined that the probable cause of this accident was the failure of the conductor to apply the necessary protections before he stepped between the cars to adjust the drawbars. Contributing to the cause of the accident was the Belt Railway Company's lack of an effective efficiency testing program to periodically observe and enforce its safety and operating rules for switching movements.

Recommendations: None Brief adopted: July 7, 2014

Collision of Two Freight Trains Barton County, Missouri July 21, 2012 Railroad Accident Brief

On July 21, 2012, about 3:30 p.m. local time, a Kansas City Southern Railway Company freight train collided with the side of a Burlington Northern Santa Fe Railway (BNSF) freight train at a railroad crossing near Arcadia, Kansas. The two crew members from the lead locomotive jumped from the train prior to the collision and were injured; the two BNSF crew members were not injured. Estimated damages totaled \$7.75 million. The NTSB determined that the probable cause of this accident was the failure of the train crew of Kansas City Southern Railway Company freight train QSHKC20 to comply with trackside signal indications. Contributing to the accident was the lack of a positive train control system that could have stopped the train, thereby preventing the accident.

Recommendations: None Brief adopted: July 3, 2014

Railroad Employee Fatality Mathis, Texas September 4, 2013 Railroad Accident Brief

One UP welder was killed and another welder was seriously injured when an S-60 Trax aerial lift vehicle overturned about 4:15 p.m. local time on September 4, 2013, in Mathis. The men were part of a crew working on a fixed wooden bridge 192 feet long and 45 feet high. When the lift bucket on the Trax vehicle became stuck, an unsecured welder climbed into the bucket from the bridge; the bucket dropped, sprung upward, and ejected the welder, who fell to the ground and was seriously injured. The welder who was initially assigned to work in the bucket was fatally injured when the bucket struck the ground.

The NTSB determined that the probable cause of this accident was the welders' attempt to free the snagged aerial lift bucket from within the bucket, in lieu of evacuating the bucket and using ground controls.

Recommendations: None Brief adopted: June 27, 2014

Railway Employee Fatality Kansas City, Kansas August 15, 2011 Railroad Accident Brief

About 1:12 p.m. local time on August 15, 2011, a BNSF yard crew member was fatally injured while coupling rail cars in Kansas City. He was the helper on a three-person crew that was assembling a train from cars positioned on three tracks. As he was walking between the rail cars, he radioed the foreman to report a gap; the foreman transferred control of the remote control locomotive to the helper. The helper's remote control unit became unlinked from the remote control locomotive. He was found pinned between two rail cars. The NTSB determined that the probable cause of this accident was the failure of the remote control operations crew to establish required protections before the helper entered the gap between the lead-end of a train and a cut of freestanding, rolling rail cars.

Recommendations: None

Brief adopted: June 25, 2014

Railway Derailment Los Angeles, California September 5, 2013 Railroad Accident Brief

Angels Flight Railway is a two-car funicular railway in downtown Los Angeles. The cars are moved by a wire rope on an inclined guideway; their maximum speed is 3.5 mph. On September 5, 2013, about 11:30 a.m. local time, one car moving down the incline derailed near the middle of the guideway. The other car, which had been moving up the incline, stalled. The operator of the railway attempted to manually move each car to its destination gate. A total of six passengers were forced to evacuate.

The NTSB determined that the probable cause of this accident was the intentional bypass of the funicular safety system with Angels Flight management knowledge; and Angels Flight management continuation of revenue operations despite prolonged, and repeated, unidentified system safety shutdowns.

Recommendations: 1 new recommendation ("urgent," issued to California Public Utilities Commission)

Brief adopted: June 23, 2014

Highway-Railroad Grade Crossing Collision Madison, Illinois February 28, 2012 Railroad Accident Brief

At 11:57 a.m. local time, on February 28, 2012, a southbound Amtrak train en route from Chicago to St. Louis collided with an eastbound vehicle at the Bissell Street highway–railroad grade crossing in Madison. Two UP signal employees were working in the warning system signal bungalow for the crossing when the accident occurred. Locomotive video recorder data indicated that the crossing warning system did not activate before or during the collision. The vehicle driver died as a result of the collision; no crewmembers or passengers were injured. The train did not derail. The NTSB determined that the probable cause of this accident was the failure of the UP signal inspector and signal technician to provide for the safety of train movements and highway users prior to disabling the highway-rail grade crossing warning system at the Bissell Street crossing. Contributing to the accident was the failure of UP management to ensure that proper procedures were followed during software upgrades to provide for the safety of train movements and highway users.

Recommendations:4 new recommendations (issued March 8, 2013, in
combination with Niles, Michigan, preliminary investigation)Brief adopted:March 27, 2014

Passenger Train Derailment Niles, Michigan October 21, 2012 Railroad Accident Brief

As eastbound Amtrak passenger train 350 entered the Niles yard while traveling 61 mph, it derailed about 291 feet from the main track and traveled an additional 1,148 feet before coming to a stop about 10:10 a.m. local time on October 21, 2012. The train was composed of two locomotives, one on each end, and four passenger cars – all of which derailed upright and in line with the track.

The NTSB determined that the probable cause of this accident was the unauthorized use of a jumper wire that provided a false proceed signal with a mainline switch lined to Niles yard. The use of the jumper wire was inconsistent with Amtrak procedures for using jumper wires to override signal and train control safety-critical circuits. Contributing to the accident was the inadequate oversight by Amtrak management to ensure that proper jumper wire safeguards were employed.

Recommendations: 4 new recommendations (issued March 8, 2013, in combination with Madison, Illinois, preliminary investigation)

Brief adopted: November 20, 2013

Switchman Crushed Between Two Rail Cars Mason City, Iowa July 31, 2012 Railroad Accident Brief

This accident brief was adopted outside the FY 2014 reporting period but is included here because it was reported in the Congressional submission as an ongoing investigation. A UP switchman was crushed between two rail cars in the Mason City yard about 2:25 a.m. local time on July 31, 2012. He had gone on duty at 10:30 p.m. on July 30, along with an engineer and a footboard yardmaster. During switching operations, the switchman discovered a coupler knuckle with a missing pin. While he was making repairs to the coupler knuckle, two rail cars rolled into him and he was fatally injured.

The NTSB determined that the probable cause of this accident was the switchman not ensuring that the two rail cars on track 3 were properly secured before attempting to repair the coupler knuckle on the rail car. Contributing to the accident was the lack of a thorough job briefing by the rail yard crew, specifically a review of securement requirements, before the switchman entered the gage of the rail.

Recommendations: None Brief adopted: September 27, 2013

Location	Date	Description	Fatalities
Galva, KS	09/25/2014	Two UP trains collided	0
Hoxie, AR	08/17/2014	Two UP trains collided; town evacuation	2
Arden, NV	08/07/2014	UP engineer had epileptic seizure while operating train	0
Lynchburg, VA	04/30/2014	CSX train derailed; subsequent fire and evacuation	1
Chicago, IL	03/24/2014	CTA train derailed at O'Hare Airport station	1
New York City, NY	03/10/2014	Metro-North track worker struck by train	1
Jesup, GA	02/20/2014	CSX train struck film crew on trestle	1
Casselton, ND	12/30/2013	Train carrying oil derailed after striking BNSF grain train; subsequent fire and evacuation	0
Keithville, LA	12/30/2013	UP and BNSF trains collided head-on	0
New York City, NY	12/01/2013	Metro-North commuter train derailed	4
Walnut Creek, CA	10/18/2013	BART train struck and killed two roadway workers	2
Forest Park, IL	09/30/2013	CTA train collided with stopped train	0
Amarillo, TX	09/25/2013	Three BNSF trains collided	0
New York City, NY	07/18/2013	CSX trash train derailed on Metro-North track	0
Hays, KS	07/16/2013	Two UP trains collided in nonsignaled territory	0
West Haven, CT	05/28/2013	Metro-North train struck maintenance-of- way worker	1
Chaffee, MO	5/25/2013	UP and BNSF trains collided; subsequent bridge collapse	0
Bridgeport, CT	05/17/2013	Two Metro-North trains derailed and collided	0

Ongoing Major Railroad Accident Investigations as of September 30, 2014

Completed Railroad Investigative Hearings and Forums October 1, 2013–September 30, 2014

Two Metro-North Rail Accidents Investigative Hearing November 6-7, 2013

This 2-day investigative hearing addressed the derailment and collision of Metro-North passenger trains 1548 and 1581 in Bridgeport, Connecticut, May 17, 2013; and the Metro-North employee fatality that occurred in West Haven, Connecticut, May 28, 2013.

The hearing focused on the following issues:

- Adequacy of federal track inspection standards and of Metro-North's track maintenance and inspection program.
- Adequacy of federal passenger car safety standards (emphasizing "forward end" car requirements) and crashworthiness of Metro-North's M8 rail cars (emphasizing the rear B-end corner post and truck attachment).
- Metro-North's policy and practice for roadway worker protection and its organizational safety culture.

Rail Safety: Transportation of Crude Oil and Ethanol Forum April 22–23, 2014

Panelists discussed the recent investigations involving DOT-111 tank cars; the regulatory landscape regarding the transportation of crude oil and ethanol, and associated safety recommendations; tank car design, vulnerabilities, and factors that contribute to failure; operational risk assessment; and route planning/ selection. The forum generated significant media attention.

Completed Railroad Special Investigations October 1, 2013–September 30, 2014

Roadway Worker Safety Special Investigation Report

Railroad and rail transit roadway workers are subject to unique on-the-job risks and hazards. The jobs of railroad engineers and conductors include risks primarily related to moving trains, such as derailments and collisions with other trains. The jobs of roadway workers involve hazards that include moving rolling stock and other equipment and vehicles, as well as falls, electrocution, and natural hazards.

During 2013, 11 railroad roadway workers died while doing their jobs, which accounts for nearly 80 percent of the total number of railroad employees who died in 2013. These fatalities represent the largest number of railroad roadway workers killed while on duty in 1 year since 1995, when 12 died. Also in 2013, four rail transit roadway workers died. The types of accidents in which roadway workers lost their lives included falls from bridges, incidents involving bucket lifts, and a mudslide, as well as strikes by moving equipment. The number of roadway worker deaths in 2013 and the findings from those investigations prompted the NTSB to initiate this special investigation to identify safety issues facing roadway workers and to issue supporting recommendations. The special investigation report closed out accident investigations of an electrocution fatality involving overhead wires on a Canadian Pacific railroad in Harpursville, New York, and of a CSX bridge worker fatality in Philadelphia, Pennsylvania.

Recommendations: 15 new recommendations, 1 reiterated and reclassified Report adopted: September 24, 2014

Completed Pipeline Accident Investigation Reports October 1, 2013–September 30, 2014

Pipeline Rupture Sissonville, West Virginia December 11, 2012 Pipeline Accident Report

On December 11, 2012, at 12:41 p.m. local time, a buried 20-inch-diameter interstate natural gas transmission pipeline, owned and operated by Columbia Gas Transmission Corporation, ruptured in a sparsely populated area west of Interstate 77 near Sissonville. About 20 feet of pipe was separated and ejected from the underground pipeline and landed more than 40 feet from its original location. The escaping high-pressure natural gas immediately ignited. An area of fire damage about 820 feet wide extended nearly 1,100 feet along the pipeline right-of-way. Three houses were destroyed by the fire, and several other houses were damaged. There were no fatalities or serious injuries. Seventy-six million standard cubic feet of natural gas was released and burned. The estimated cost of pipeline repair was \$2.9 million, the cost of system upgrades to accommodate inline inspection was \$5.5 million, and the cost of gas loss was \$285,000.

The NTSB determined that the probable cause of the pipeline rupture was (1) external corrosion of the pipe wall due to deteriorated coating and ineffective cathodic protection, and (2) the failure to detect the corrosion because the pipeline

was not inspected or tested after 1988. Contributing to the poor condition of the corrosion protection systems was the rocky backfill used around the buried pipe. Contributing to the delay in the controller's recognition of the rupture was Columbia Gas Transmission Corporation management's inadequate configuration of alerts in the supervisory control and data acquisition system. Contributing to the delay in isolating the rupture was the lack of automatic shutoff or remote control valves.

Recommendations: 3 new recommendations Report adopted: February 19, 2014

Ongoing Major Pipeline Accident Investigations as of September 30, 2014

Location	Date	Description	Fatalities
New York City, NY	03/12/2014	Natural gas exploded in two 5-story buildings	8
Birmingham, AL	12/17/2013	Natural gas exploded in 2-story duplex building	1

Completed Hazardous Materials Accident Investigation Report

Freight Train Derailment With Vinyl Chloride Release Paulsboro, New Jersey November 30, 2012 Hazardous Materials Accident Report

On November 30, 2012, about 7:02 a.m. local time, southbound Consolidated Rail Corporation (Conrail) freight train FC4230 derailed seven cars near milepost 13.7 in Paulsboro. The freight train consisted of two locomotives and 82 cars. The derailment occurred as the train traveled over the Paulsboro moveable bridge. Four of the tank cars that derailed came to rest partially submerged in Mantua Creek. Three of those cars contained vinyl chloride, and one contained ethanol. One tank car was breached and released approximately 20,000 gallons of vinyl chloride. Eyewitnesses reported that a vapor cloud engulfed the scene immediately following the accident. Twenty-eight area residents were treated at nearby hospitals for possible vinyl chloride exposure. The train crew and numerous emergency responders were also exposed to vinyl chloride. Equipment damage estimates were \$451,000. The emergency response and remediation costs totaled about \$30 million.

The NTSB determined that the probable cause of the derailment and subsequent hazardous materials release was Consolidated Rail Corporation (1) allowing the train to proceed past the red signal aspect with the rail slide locks not fully engaged, which allowed the bridge to rotate and misalign the running rails as the train moved across it, and, (2) relying on a training and qualification program that did not prepare the train crew to examine the bridge lock system. Contributing to the accident was the lack of a comprehensive safety management program that would have identified and mitigated the risks associated with the continued operation of the bridge despite multiple bridge malfunctions of increasing frequency. Contributing to the consequences of the accident was the failure of the incident commander to implement established hazardous materials response protocols for worker protection and community exposure to the vinyl chloride release.

Recommendations: 20 new recommendations, 2 reiterated Report adopted: July 29, 2014

Ongoing Major Hazardous Materials Accident Investigations as of September 30, 2104

Location	Date	Description	Fatalities
Plaster Rock, NB	01/08/2014	Canadian National train derailed; subsequent fire and evacuation	0
Lac-Mégantic, Quebec	07/06/2013	Montreal, Maine & Atlantic Railway runaway train derailed; subsequent explosion	47

Research and Engineering Tab

Research and Engineering

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$12,478	49
FY 2016 Request	\$12,616	49
Increase/Decrease	\$138	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The Office of Research and Engineering provides technical support to NTSB accident investigations in all modes of transportation. The office – consisting of four divisions and one program area – also conducts safety studies, generates periodic statistical reviews of aviation accidents, and provides medical and toxicology support for investigations in all modes.

Safety Research Division

The Safety Research Division examines accidents, accident trends, and technological changes to identify problems and associated remedial actions that will reduce transportation risk and improve the safety of the transportation system. The division also responds to requests for data analysis and statistical information from other NTSB offices, Board Members, Congress, and the public, which frequently includes rapid response and launch to accident sites.

Materials Laboratory Division

The Materials Laboratory Division performs expert multidisciplinary engineering and scientific analyses to determine whether the performance of materials and structures is related to the cause or severity of an accident. Engineers also analyze wreckage to determine the causes of fires and explosions. The division provides chemical and forensic science support, as well as technical advice and support for experimental testing and research in the physical sciences.

Vehicle Recorder Division

The Vehicle Recorder Division extracts, formats, and analyzes data from aircraft flight data recorders and cockpit voice recorders, as well as recorders installed in locomotives, large ships, and some highway vehicles. Staff also examines recorded electronic audio and video information from aircraft, ship, train, and support communication systems; provides electronic engineering support for all accident investigation modes in examining communication and control systems; provides time synchronization to correlate voice, data, and video recorder outputs; and uses advanced digital and analog filtering and signal representation techniques to extract critical recorder information.

Vehicle Performance Division

The Vehicle Performance Division provides specialized aeronautical, mechanical, structural, and biomechanical engineering support; three-dimensional laser scanning and accident reconstruction; photogrammetry and video analysis; and animation and graphics support for all modes. Staff uses computational and visualization technology to provide accurate time-motion histories of the sequence of events, and evaluates data from multiple sources to determine vehicle and occupant motion and the underlying causes of that motion. The division also develops video animations of accident scenarios, evaluates occupant injury mechanisms, and participates in and directs research into other special projects as required.

Medical Factors

In the medical factors program area, the Office of Research and Engineering medical staff advises the NTSB on all medical aspects of investigations, including pathology, toxicology, human performance, and biomechanics. Examples of medical issues addressed include operator incapacitation, night vision, hypoxia, substance impairment, obstructive sleep apnea, and use of over-the-counter medications.

Accomplishments and Workload

Completed Work October 1, 2013–September 30, 2014

Safety Research Division

Safety Research Division staff includes transportation research and aviation data analysts who provide statistical support to other NTSB offices, respond to requests for statistical data from Congress and the public, and develop safety studies and other safety research products.

Summary of US Civil Aviation Accidents for Calendar Year 2012 Web Publication

Each year, the Safety Research Division develops a summary report of both air carrier and GA accident statistics. This publication historically has been made available on the NTSB website as a downloadable PDF publication. Information on aircraft activity, stratified by activity type, is obtained from the FAA, which collects the data from multiple sources. The NTSB accident information and activity data are used to calculate accident counts and rates organized by aircraft activity subgrouping (for example, air carrier part 121 and part 135, and GA subgroups such as instructional flying and agricultural application). Numerous charts and tables describe the accident experience of each group, expressed as accident rates and counts.

In 2014, Safety Research Division staff formatted the Review of US Civil Aviation Accidents as an interactive web publication. A number of benefits are associated with this change in publication mode:

- Navigation is interactive so users can quickly find relevant graphs and tables.
- The data used to develop specific tables and graphs are provided in Microsoft Excel format so users can quickly access associated source information.
- Summary statistics can be easily updated.

Web report published: September 15, 2014

Drug Use Trends in Aviation: Assessing the Risk of Pilot Impairment Safety Study

Pilot use of potentially impairing drugs and medication is a growing safety concern due to the expanding application of pilot medical self-certification and a general increase in the use of prescribed, over-the-counter, and illicit drugs in the United States. The Safety Research Division analyzed pilot drug use in aviation accidents in support of the NTSB's interest in reducing transportation accidents in all modes due to impairment. FAA and Civil Aerospace Medical Institute toxicology testing records were analyzed to characterize the prevalence of drug use in fatally injured pilots, and trends in the use of prescription, over-the-counter, and illicit drugs. The study also compared toxicology records to NTSB aviation accident records to explore the use of potentially impairing drugs within different pilot groups and flight operations.

Among fatal accident pilots, study results showed increasing trends in the use of all drugs, potentially impairing drugs, drugs used to treat potentially impairing conditions, drugs designated as controlled substances, and illicit drugs. Although the study data were limited to fatally injured accident pilots, the similarity of trends to those found in studies of the general US population suggests that the results are indicative of trends in the pilot population.

Recommendations: 6 new recommendations Study adopted: September 9, 2014

Tractor-Trailer Safety Safety Recommendation Letter to National Highway Traffic Safety Administration

As a result of the NTSB study of accidents involving single-unit trucks, Safety Research Division staff identified safety issues applicable to tractor-trailers, and the NTSB issued recommendations to NHTSA on tractor-trailer blind spots, side and rear underride, and the need for improved trailer data to support the oversight of tractor-trailer safety.

Blind spots around tractor-trailers can result in collisions with passenger vehicles or pedestrians, cyclists, and motorcyclists. Side underride is also a concern because passenger vehicle bumpers are not at the same height as the substantial structures of tractor-trailers; likewise, the likelihood of fatal or severe injury is high in rear underride accidents – when passenger vehicles collide with trailers. Although the rears of most trailers are required to have underride guards, research and accident experience show that current standards are inadequate. In fact, police accident reports collect less information about trailers than other motor vehicles. National and state databases of police-reported accidents do not contain

vehicle identification numbers or license plates, for example, which are useful for evaluating the safety performance of tractor-trailers.

Recommendations: 7 new recommendations Letter issued: April 3, 2014

Materials Laboratory Division

Materials Laboratory engineers examine parts and wreckage from more than 150 accidents in a typical year, involving all transportation modes.

Freight Train Derailment With Vinyl Chloride Release Paulsboro, New Jersey November 30, 2012

Materials Laboratory engineers evaluated the rail slide lock system and the failure mode in a breached vinyl chloride tank car in support of the RPH investigation of the Conrail freight train derailment near Paulsboro on November 30, 2012. Four tank cars that derailed on the moveable bridge came to rest partially in Mantua Creek. One tank car was breached and released approximately 20,000 gallons of vinyl chloride.

Report adopted: July 29, 2014

Collapse of Interstate 5 Skagit River Bridge Mount Vernon, Washington May 23, 2013

On May 23, 2013, a truck-tractor combination unit carrying an oversized load struck the Skagit River bridge in Washington state, causing the collapse of one span. In support of the HS investigation of the bridge collapse, Materials Laboratory engineers evaluated the wreckage on scene, evaluated videos that captured the collapse, developed the bridge failure sequence, and conducted metallurgical analysis of the failed members. Although there were no fatalities and only minor injuries, two passenger vehicles fell into the river, and two other vehicles were damaged.

Report adopted: July 15, 2014

Gas Pipeline Rupture Sissonville, West Virginia December 11, 2012

In support of the RPH investigation of the rupture of 20 feet of a buried 20-inch-diameter interstate natural gas transmission pipeline in Sissonville, owned and operated by Columbia Gas Transmission, Materials Laboratory engineers evaluated on-scene evidence and conducted a metallurgical analysis of the ruptured pipe pieces. The escaping high-pressure natural gas had immediately ignited, and an area of fire damage about 820 feet wide extended nearly 1,100 feet along the pipeline right-of-way and across Interstate 77. Three houses were destroyed by the fire, and several other houses were damaged.

Report adopted: February 19, 2014

Vehicle Recorder Division

In a typical year, the Vehicle Recorder Laboratory receives over 600 recording devices and provides readouts, transcripts, and studies in support of aviation, rail, marine, and highway investigations.

Crash of UPS Flight 1354 Birmingham, Alabama August 14, 2013

For the AS investigation of the crash of UPS Flight 1354, an Airbus A300-600, Vehicle Recorder Division engineers completed factual reports on the cockpit voice recorder, flight data recorder, quick access recorder, and several portable electronic devices. Division staff were also actively engaged in the NTSB's data request process with the FAA's aviation safety information analysis and sharing system.

Report adopted: September 9, 2014

Freight Train Derailment With Vinyl Chloride Release Paulsboro, New Jersey November 30, 2012

Engineers from the Vehicle Recorder Division launched to the scene of this Conrail derailment and completed extensive factual reports on the locomotive event recorders and the bridge control system. Seven of 82 cars had derailed, one of which was breached and released 20,000 gallons of vinyl chloride.

Report adopted: July 29, 2014

Crash of Asiana Flight 214 San Francisco, California July 6, 2013

Asiana Airlines Flight 214, a Boeing 777, crashed on landing at San Francisco International Airport. Staff from the Vehicle Recorder Division completed analysis of the flight data recorder, cockpit voice recorder, quick access recorder, and several portable electronic devices.

Report adopted: June 24, 2014

Allision of Passenger Vessel *Seastreak Wall Street* With Pier 11 New York City, New York January 9, 2013

Of the 331 people on board the *Seastreak Wall Street*, a high-speed passenger ferry that struck a Manhattan pier on the morning of January 9, 2013, 79 passengers and one crewmember were injured, four of them seriously. During the captain's approach for docking, he intended to reduce speed and transfer control from one bridge station to another less than a minute before reaching pier 11 on the East River. Seastreak captains routinely used this procedure and changed stations for better visibility. In this instance, however, the maneuver proved unsuccessful, and the captain was unable to control the ferry. Staff from the Vehicle Recorder Division launched to the scene, downloaded the engine monitors, and documented findings from the onboard surveillance videos and engine monitor data.

Report adopted: April 12, 2014

Highway-Railroad Grade Crossing Collision Midland, Texas November 15, 2012

Vehicle Recorder Division staff launched to the scene of a UP freight train collision with a truck-tractor combination unit that was being used as a parade float. The November 15, 2012, accident resulted in four fatalities and 12 injured. In support of the HS investigation, engineers downloaded locomotive event recorders and the truck's engine monitor, and subsequently analyzed and correlated the data from the locomotive event recorders, locomotive forward-facing image recorders, and other recorded video.

Report adopted: November 5, 2013

Vehicle Performance Division

In a typical year, the Vehicle Performance Division produces more than 50 factual reports and animations, launches to accident sites to acquire evidence for performance reports, and participates in the development of safety recommendations.

Crash of UPS Flight 1354 Birmingham, Alabama August 14, 2013

Staff from the Vehicle Performance Division launched to act as aircraft performance group chair and to coordinate the detailed mapping of the wreckage and topographic survey. Data from the airplane's flight data recorder and cockpit voice recorder (along with radar data, weather data, the site survey, topographical data, and surveillance video) were used to develop an aircraft performance study — which was released to the public prior to the February 2014 investigative hearing. The results of the performance study were used to create still-image graphics that were shown at the hearing and at the September 2014 Board meeting to explain the circumstances of the accident.

Report adopted: September 9, 2014

Crash of Asiana Flight 214 San Francisco, California July 6, 2013

Vehicle Performance Division staff launched to San Francisco to coordinate detailed mapping of site wreckage. The wreckage map was incorporated into a crash site factual report, and data from the airplane's flight data recorder and cockpit voice recorder (along with radar data, weather data, and surveillance video) were used to develop an aircraft performance study. These reports were released to the public prior to the December 2013 investigative hearing. Staff used the results of the aircraft performance study to create an animation to explain the circumstances of the accident; the animation was shown at the June 2014 Board meeting. Staff also assisted in translation and transcription of the cockpit voice recording.

Report adopted: June 24, 2014

Highway-Railroad Grade Crossing Collision Midland, Texas November 15, 2012

Vehicle Performance Division staff assisted HS in three-dimensional laser scanning of the highway-railroad grade crossing where, on November 15, 2012, a UP freight train struck a trucktractor combination unit being used as a parade float. Staff used forward-facing video from the train and video from other sources to develop an animation depicting the circumstances of the accident.

Report adopted: November 5, 2013

Rail Safety: Transportation of Crude Oil and Ethanol Forum April 22–23, 2014

Crude oil and ethanol transportation by rail has seen phenomenal growth in North America over the last decade, altering the way these flammable liquids are transported. Trains made up predominantly, if not entirely, of crude oil and ethanol cars are increasingly common. A number of rail accidents in the United States and Canada have highlighted the vulnerabilities of tank cars and the need for comprehensive risk mitigation and emergency response strategies. For this forum, Vehicle Performance Division staff chaired the technical panel on tank car design, construction, and crashworthiness.

Medical Factors

Medical Factors program staff participated in numerous NTSB accident investigations in all transportation modes, evaluating and addressing medical issues through formal factual and analytical reports, safety recommendations, coordination with other agencies, and formal presentations to the Board Members and external audiences. Staff completed medical investigation reports for 58 accident investigations.

Ongoing Work as of September 30, 2014

Safety Research Division

Integrity Management of Gas Transmission Pipelines in High Consequence Areas Safety Study

A review of Pipeline and Hazardous Materials Safety Administration (PHMSA) data from 2010–2012 shows that 35 percent of all gas transmission

pipeline incidents primarily involved corrosion, environmental cracking, or failure of pipe or weld due to installation problems. These incidents resulted in eight fatalities and 51 injured. Integrity management programs are designed to detect such potential failures.

In the last 4 years, the NTSB has investigated three accidents involving onshore gas transmission pipelines—in Palm City, Florida (May 4, 2009); San Bruno, California (September 9, 2010); and Sissonville, West Virginia (December 11, 2012). These investigations revealed deficiencies associated with the operators' integrity management programs and PHMSA oversight.

The Safety Research Division is currently conducting a safety study to identify weaknesses in the implementation of continual assessment of gas transmission pipeline integrity management programs in high consequence areas. This study addresses two items on the NTSB MWL: preserve the integrity of transportation infrastructure and enhance pipeline safety.

Materials Laboratory Division

Boeing 787-8 Auxiliary Power Unit Battery Fire Boston, Massachusetts January 7, 2013

In support of the AS investigation, Materials Laboratory engineers conducted an extensive analysis of the failure of the lithium ion battery in the aft cabin of a Japan Airlines Boeing 787-8. The airplane was parked at a gate at Logan International Airport when the auxiliary power unit automatically shut down and smoke was observed coming from the battery case. The fire was determined to have originated from an internal short circuit.

Freight Train Derailment New York City, New York July 18, 2013

In support of the RPH investigation of the derailment of 10 of the 20 cars on a northbound CSX freight train traveling on the Metro-North line, Materials Laboratory engineers evaluated the condition of the concrete railroad ties, conducted tests to determine the effect of pre-existing cracks on the deflection stiffness of the ties, and evaluated the quality of the concrete.

Natural Gas Pipeline Rupture and Explosion of Apartment Building Birmingham, Alabama December 17, 2013

A rupture in a natural gas distribution line destroyed an apartment building in the Gate City section of Birmingham. Fire and explosion specialists evaluated the accident scene to identify the cause of the explosion. Materials Laboratory engineers evaluated the gas distribution lines.

Collision of Train Carrying Crude Oil and Derailed Grain Train Casselton, North Dakota December 30, 2013

Materials Laboratory engineers provided metallurgical evaluation of wreckage components to support the development of an accident sequence for the 13-car derailment of a BNSF train hauling grain and the subsequent collision of a BNSF petroleum crude oil unit train with one of the derailed cars. Following the collision, the two crewmembers on board the petroleum train exited the lead locomotive uninjured before the ruptured tank cars ignited. The crew from the grain train was not injured.

Collision of Car and School Bus Centerville, Louisiana February 15, 2014

A school bus carrying 30 members of a high school baseball team and five adults was traveling eastbound on US Highway 90, near Centerville, when the driver of a Kia sport utility vehicle lost control of the car and collided head-on with the school bus. Four of the five people in the Kia were ejected and fatally injured. Materials Laboratory engineers evaluated the Kia's failed tire and wreckage components for the development of an accident sequence in support of the investigation.

Gas Explosion and Subsequent Fire New York City, New York March 12, 2014

Two multiuse, five-story buildings on the west side of Park Avenue were destroyed by a gas explosion and fire in which eight people died, and more than 48 people were injured. Materials Laboratory engineers provided metallurgical evaluation of wreckage components to support the development of an accident sequence.

Collision of Truck-Tractor Combination Unit and Motorcoach Orland, California April 10, 2014

A Volvo truck-tractor in combination with two 28-foot trailers, operated by FedEx Corporation, was traveling on Interstate 5 in Orland, when it crossed the median; collided with a passenger car; and then collided with a Setra motorcoach occupied by a driver, 43 high school students, and three adult chaperones. The combination vehicle and the motorcoach departed the highway, and a postcrash fire ensued; both drivers, as well as eight motorcoach passengers, were fatally injured. Materials Laboratory engineers evaluated the wreckage and are investigating the fire aspects of the collision, which will be incorporated into a factual report.

Vehicle Recorder Division

Two Metro-North Rail Accidents Investigative Hearing November 6–7, 2013

In support of an investigative hearing on these rail accidents – in Bridgeport (May 17, 2013) and West Haven, Connecticut (May 28, 2013) – Vehicle Recorder staff completed a factual report on the multiple locomotive event recorders from the train involved in the Bridgeport derailment. Staff also developed a report documenting track conditions based on locomotive forward-facing image recorders from Amtrak trains that had travelled nearby prior to the accident.

Roadway Worker Fatal Accident Walnut Creek, California October 18, 2013

In this accident, two Bay Area Rapid Transit (BART) roadway workers were killed while performing track investigations. Staff from the Vehicle Recorder Division assisted RPH by processing and transcribing information from the in-cab video recorder of the train, the first such equipment received as part of an NTSB rail investigation, and by analyzing cell phones recovered from the accident site.

Train Derailment New York City, New York December 1, 2013

A Vehicle Recorder engineer launched to the scene of the Metro-North HudsonLinederailment and recovered locomotive event recorders and surveillance videos. Staff downloaded and analyzed the event recorder data, evaluated the videos, and reviewed cell phone records. As a result of the derailment, four passengers died and 59 people were transported to local hospitals for injuries. Metro-North estimated damage to be in excess of \$9 million.

Collision of Train Carrying Crude Oil and Derailed Grain Train Casselton, North Dakota December 30, 2013

Engineers from the Vehicle Recorder Division processed and analyzed the locomotive event recorder data, forward-facing image recorders, and cell phone records associated with the derailment of 13 cars of a BNSF grain train and the subsequent collision of a BNSF petroleum crude oil unit train with one of the derailed cars. The two crewmembers on board the petroleum train exited the lead locomotive uninjured before the ruptured tank cars ignited. The crew from the grain train was not injured.

Head-On Collision of Trains Keithville, Louisiana December 30, 2013

In support of this RPH investigation, an engineer from the Vehicle Recorder Division launched to the scene to recover and download the locomotive event recorders and the forwardfacing image recorders from both the UP and BNSF trains. Four of six total crewmembers were injured. Damages were estimated at \$7.8 million.

Collision of Truck-Tractor Combination Unit and Motorcoach Orland, California April 10, 2014

A Vehicle Recorder engineer launched to the crash site to retrieve and download the engine monitoring units from the FedEx combination vehicle and the Setra motorcoach. The FedEx truck-tractor had been traveling on Interstate 5 when it crossed the median; collided with a passenger car; and then collided with a Setra motorcoach occupied by a driver, 43 high school students, and three adult chaperones. A postcrash fire consumed the combination vehicle and partially burned the motorcoach. Both drivers and eight motorcoach passengers were fatally injured.

Gulfstream IV Runway Excursion Bedford, Massachusetts May 31, 2014

Engineers from the Vehicle Recorder Division successfully downloaded the cockpit voice recorder and flight data recorder in support of this AS investigation

of a rejected takeoff and runway excursion at Laurence G. Hanscom Field. Division staff also participated in ground tests to further document aircraft system performance. The two pilots, a flight attendant, and four passengers were fatally injured.

Multivehicle Collision, Cranbury, New Jersey June 7, 2014

Vehicle Recorder engineers launched to the scene to download recording devices from multiple vehicles involved in this accident on the New Jersey Turnpike. Initial contact was between a Walmart truck-tractor combination vehicle and a limousine van. Staff performed additional analyses at the adaptive cruise control manufacturer's facility.

Allision of *Anna Smile* With Grain Elevator Houston, Texas July 14, 2014

Engineers from the Vehicle Recorder Division launched to the accident scene to download the voyage data recorder from the MV *Anna Smile*, which allided with a grain elevator while mooring to a dock in the Houston Ship Channel. Estimated damages exceeded \$1 million.

Allision of Multiple Vessels Gretna, Louisiana August 12, 2014

While transiting down bound in the Mississippi River, the bulk carrier MV *Flag Gangos* allided with the MV *Pamisos*, UTV *Capt. Shawn D. Martinez*, and tank barge *Web 235*, which were moored and transferring fuel oil to the *Pamisos*. Estimated damaged exceeded \$10 million. A Vehicle Recorder Division engineer launched to the scene to download the voyage data recorder and collect other evidence from the navigation system and security cameras.

Collision of Combination Vehicle and School Activity Bus Davis, Oklahoma September 26, 2014

In this crash, a truck-tractor combination vehicle crossed the center median of Interstate 35 and collided with a school activity bus. Four bus occupants were fatally injured. An engineer from the Vehicle Recorder Division launched to the scene to recover the truck's engine control module, a GPS unit, and other electronic devices.

Crash of Malaysian Airlines Flight 17 Near Torez, Ukraine July 17, 2014

An engineer from the Vehicle Recorder Division launched to the laboratory of the United Kingdom's Air Accident Investigation Branch for download of the cockpit voice recorder and the flight data recorder from the accident airplane, which broke apart in mid-air. There were no survivors among the 283 passengers and 15 crewmembers.

Crash of Air Algérie Flight 5017 Gossi, Mali July 24, 2014

A Vehicle Recorder Division engineer launched to the laboratory of France's Bureau d'Enquêtes et d'Analyses for download of the cockpit voice recorder and flight data recorder. The airplane had crashed in stormy weather conditions. All 118 passengers and crew were killed.

Vehicle Performance Division

Two Metro-North Rail Accidents Investigative Hearing November 6–7, 2013

In support of an RPH investigative hearing on these rail accidents—in Bridgeport (May 17, 2013) and West Haven, Connecticut (May 28, 2013)—Vehicle Performance staff analyzed locomotive event recorder data to determine the position, speed, and braking status of the two trains, and used photographs to determine the final rest positions of the trains. These data were used in developing an animation to explain the sequence of events in these accidents.

Crash of Eurocopter Helicopter Talkeetna, Alaska March 30, 2013

The accident helicopter, operated by the Alaska State Troopers, crashed during a search and rescue operation. Vehicle Performance staff is evaluating the motion of the helicopter, which was equipped with an onboard recording system that included video showing the pilot and instruments as well as the aircraft's position (based on GPS) and orientation. Staff is correlating the recorded data with the video of the instruments during the accident sequence.

Crash of Boeing 747-400 Bagram Air Force Base, Afghanistan April 29, 2013

In support of the AS investigation of the crash of a National Air Cargo Boeing 747-400, Vehicle Performance staff is analyzing data from the flight data recorder and cockpit voice recorder—along with airplane systems and aerodynamic data from Boeing and damage to various components in the wreckage—to determine the sequence of events in the accident.

Collision of Train Carrying Crude Oil and Derailed Grain Train Casselton, North Dakota December 30, 2013

Vehicle Performance Division staff is using finite element analysis to evaluate a fracture and vehicle simulations to evaluate train braking performance for an accident involving two BNSF freight trains—in which a westbound grain train derailed 13 cars, fouling the parallel track and leading to the derailment of an eastbound petroleum crude oil unit train.

Investigation Into Missing Malaysia Airlines Flight MH370 Malaysia March 8, 2014

Vehicle Performance staff is assisting AS with the analysis of satellite communications data in an effort to determine the location of Malaysian Airlines Flight MH370, a Boeing 777200 that disappeared during a scheduled flight from Kuala Lumpur to Beijing, China.

Special Investigations on Rear-End Collisions and Tire Safety

In support of two HS special investigations, Vehicle Performance staff is developing simulations of vehicle performance. The first investigation is focused on using forward collision avoidance technology to help prevent rear-end crashes. The second is focused on evaluating the causes and effects of tire blowouts. Staff is using the newly acquired highway driving simulator to put drivers into the situations. The TruckSim and CarSim software incorporate the critical vehicle dynamics found in accident situations.

Correlation of Vehicle and Occupant Motion With Injury Severity

In support of two HS investigations, Vehicle Performance staff is evaluating the onboard video recorded in two school bus accidents – Port St. Lucie, Florida

(March 26, 2012), and Anaheim, California (April 24, 2014). Staff is using video analysis tools to calculate the motion of each school bus and the motion of the occupants to correlate the calculated forces on the occupants with the severity of their injuries. Because both buses were equipped with seat belts, the effects of seat belt use are also being evaluated.

Laser Scanning Documentation of Accident Scenes and Vehicles

Vehicle Performance Division staff has continued to support the documentation of accident scenes and vehicles using NTSB's recently acquired laser scanner. The scanning technology records the three-dimensional position data of physical objects, along with photographically based color information at each scanned point. Staff scanned the accident scene and vehicles for both the Port St. Lucie and Anaheim school bus accidents mentioned above, and is assisting with scanning for investigations of the Metro-North passenger train that derailed in New York City (December 1, 2013); vehicles from a tire blowout and collision in Centerville, Louisiana (February 15, 2014); the scene and vehicles from the collision of a FedEx truck and a motorcoach in Orland, California (April 10, 2014); oil tank cars from a derailment in Lynchburg, Virginia (April 30, 2014); the scene and multiple vehicles from a highway crash in Cranbury, New Jersey (June 7, 2014); the vehicle and scene from a motorcoach rollover in Red Lion, Delaware (September 21, 2014); and the scene and vehicles from a collision between a trucktractor and a school activity bus in Davis, Oklahoma (September 27, 2014).

Medical Factors

Metro-North Train Derailment Bridgeport, Connecticut May 17, 2013

In response to the derailment of an eastbound Metro-North train near Bridgeport and the subsequent collision of a westbound train with the derailed cars, the NTSB's chief medical officer worked with modal investigators to evaluate the severity and potential causes of occupant injuries.

Collision of Two Freight Trains and Collapse of Highway Overpass Chaffee, Missouri May 25, 2013

The NTSB's chief medical officer reviewed several sources of medical information about the at-fault train crew, including preaccident and postaccident medical care and diagnoses, and prepared factual and analysis reports in support of the investigation.

Highway-Railroad Grade Crossing Collision Rosedale, Maryland May 28, 2013

The NTSB's chief medical officer reviewed several sources of medical information about the commercial truck driver, including preaccident and postaccident medical care and diagnoses, and prepared factual and analysis reports. Safety issues included distraction due to hands-free cell phone use, FMCSA oversight of new entrant motor carriers, and obstructive sleep apnea.

Metro-North Train Derailment New York City, New York December 1, 2013

For this accident – which resulted in fatal injuries to four train passengers – the NTSB's chief medical officer worked with RPH investigators to evaluate the severity and potential causes of occupant injuries. Additionally, staff reviewed several sources of medical information about the accident engineer, including preaccident and postaccident medical care and diagnoses, and prepared factual and analysis reports.
TRAINING CENTER TAB

TRAINING CENTER

	<u>(\$000s)</u>	FTEs
FY 2015 Estimate	\$942	4
FY 2016 Request	\$952	4
Increase/Decrease	\$10	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The NTSB Training Center is an organizational component of the Office of the Managing Director. Budget exhibits have historically shown this activity as a program resource outside the policy and direction line that incorporates the Office of the Managing Director. The Training Center is responsible for training our partners in investigations, training internal staff, developing training plans, and overseeing the development and implementation of workforce development programs.

The Training Center is moving forward in upgrading its evaluation of courses to further refine the offerings and improve instruction in all areas. We continue to offer courses in investigative skills, specifically targeting processes, procedures, and technical issues that are critical to the NTSB mission of accident investigation. These courses are generally open only to NTSB investigative and support staff.

FY 2014 is the NTSB's first full year on the talent management system (TMS), which was introduced in FY 2013 as a means of scheduling, approving, providing, and evaluating all staff training. The TMS tracks and maintains a permanent record of all staff education and training activities, and provides a valuable tool for developing and tracking staff competencies and skills. It will be used as an on-line training venue as well as a course evaluation tool.

Full-time training officers and advisers coordinate the development of group training by conducting needs analyses for each office. Workforce development course offerings undergo continuous evaluation and improvement to adapt to the changing needs and priorities of the NTSB. The skills developed and enhanced by workforce development training are highly transferable and add significant value to the investigative process as well as to mission support.

Plans for the Training Center include the following:

• Deliver GA safety seminars: Several years ago, the Training Center developed and hosted a Volunteer Pilots Safety Stand Down Day. The success of this safety seminar prompted us to develop and present seminars on a regular and continuing basis. The NTSB partners with the FAA and other interested groups to develop programs on the safety, regulatory, and private aspects of GA safety. On December 7, 2013, the Training Center presented its fourth safety seminar – on visual flight into instrument meteorological conditions. Our most successful seminar to date – on aircraft loss of control – was held on May 10, 2014, with approximately 130 attendees. Each seminar offers FAA WINGS program credit. We are examining the possibilities of webcasting or presenting these seminars at other locations.

Future safety seminars will concentrate on areas of GA operations that have the highest fatality rates. Our next seminar is scheduled for November 8, 2014, on technically advanced aircraft. Potential topics for additional seminars include instructional flight, aviation weather, air traffic control, and medical issues affecting flight. As appropriate, we continue to partner with other federal agencies (FAA) and private organizations such as the Airline Owners and Pilots Association, the Experimental Aircraft Association, and the Society of Aviation and Flight Educators.

• *Increase emphasis on technical training for NTSB investigators*: The Training Center is also developing an overall training plan for new investigators to obtain or reinforce core skills and knowledge. Current, related course offerings include root cause analysis, system safety fundamentals, mobile digital forensics for investigators, interviewing techniques (basic, cognitive, and NTSB best interviewing practices), composite materials, accident site photography, experimental aircraft accident investigation, technically advanced aircraft training, experimental amateur built aircraft construction and accident investigation, the art of accident investigation, and tailored accident report writing.

In addition, the workforce development program will continue to offer courses in the areas of communication, time management, and computer skills, which are applicable to all NTSB employees.

- *Roll out new initiative on supervisory skills and training*: With increasing numbers of new supervisors at the NTSB, the Training Center has developed and implemented a program of comprehensive supervisory training.
- *Evaluate and update current courses, and develop courses to produce new revenue streams*: The Training Center is examining the possibilities for expanding public course offerings in the highway and pipeline modes, as well as new investigative skills courses, such as accident site photo documentation.
- *Conduct training for potential party members:* The Training Center held its first party process training for the railroad industry in April 2014 to train potential party members on the rules and processes that NTSB investigators follow during investigations. This type of training benefits party members because they are more prepared when an accident occurs, and it benefits the NTSB by reducing the training investigators need to conduct with party members once on scene.
- Develop a course on working with the media during rail investigations: A course on working with the media at a transportation accident site is offered both at the Training Center and on a limited basis at other locations. We are piloting a similar program in the area of rail investigations. Thus far, Chicago Transit and the US Department of Homeland Security have indicated interest.
- *Evaluate the use of virtual learning platforms for internal training:* The Training Center is examining virtual learning platforms that would allow NTSB field investigators to attend and actively participate in classes and events remotely.
- Continue to increase awareness of the NTSB and its mission by offering TWA 800 briefings to other federal agencies and groups involved with transportation safety and security.

Accomplishments and Workload

FY 2014 Activities

Courses With Public Enrollment	Students
Aircraft Accident Investigation (3 classes)	138
Accident Investigation Orientation for Aviation Professionals (2 classes)	52
NTSB Helicopter Accident Investigation	47
Investigating Human Fatigue Factors (2 classes)	81
Cognitive Interviewing Series	24
Managing Communications Following an Aircraft Accident or Incident	51
Managing Communications Following a Major Transportation Accidents (2 classes)	88
Accident Investigation Orientation for Rail Professionals	39
NTSB Investigation Process: Communication and Signal Exhibition	156
Rail Transit Party Process Training (webinar)	39
Safety Seminar: VFR (visual flight rules) Into IMC (instrument meteorological conditions) Accidents	54
Safety Seminar: Preventing Stalls and Loss of Control Accidents	59
Transportation Disaster Response–Family Assistance (2 classes)	126
Marine Accident Investigation	75
Total (October 1, 2013–September 30, 2014)	1,029

Courses Conducted Exclusively for NTSB Employees		
Accident Report Writing	16	
Basic Interviewing	187	
Confined Space Entry	13	
Conflict Resolution	11	
Courageous Conversations	8	
Hazwoper Refresher	24	
Mid-Career Retirement Planning	221	
Root Cause Analysis	17	
Time Management	14	
Write and Speak Like the News	3	
Total (October 1, 2013–September 30, 2014)	514	

Administrative Law Judges Tab

ADMINISTRATIVE LAW JUDGES

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$2,547	10
FY 2016 Request	\$2,575	10
Increase/Decrease	\$28	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The NTSB serves as the "court of appeals" for airmen, mechanics, or mariners whenever the FAA or the USCG take a certificate action. The agency's administrative law judges hear, consider, and issue initial decisions on administrative appeals regarding FAA aviation enforcement actions. Included are appeals of the following:

- Orders issued by the FAA Administrator amending, modifying, suspending, or revoking, in whole or in part, certificates of airmen, air agencies, and air carriers for alleged violations of the *Federal Aviation Regulations* or for lack of qualification.
- FAA actions denying applications for the issuance or renewal of airmen certificates.
- Certain FAA civil penalty orders issued against pilots, flight engineers, mechanics, or repairmen where the amount in dispute is less than \$50,000.

The judges also adjudicate claims for fees and expenses stemming from FAA certificate and civil penalty actions under the Equal Access to Justice Act.

The NTSB currently has three judges assigned to headquarters in Washington, DC, and one to the Denver, Colorado, office. They hold hearings based on their circuit assignment. The Pilot's Bill of Rights, Public Law No. 112-53, 126 Stat. 1159 (August 3, 2012), now requires judges to apply the Federal Rules of Evidence and Federal Rules of Civil Procedure to their proceedings. Either the certificate holder or the FAA can appeal a judge's decision in these cases. The

Board's review on appeal of an administrative law judge's decision is based on the record of the proceeding, which includes hearing testimony (transcript), exhibits, the judge's decision, and appeal briefs submitted by the parties.

The FAA has the right to appeal the Board's decisions to the US Court of Appeals when it determines that the decisions "will have a significant adverse impact" with respect to aviation safety duties and powers designated to be carried out by the FAA. Under the Pilot's Bill of Rights, airmen and mechanics now have the right to appeal all adverse Board decisions to the US District Court or to the Court of Appeals. The District Court's review of the Board's decision is based on the evidence from the record before the Board, including hearing testimony, transcripts, exhibits, decisions, and briefs submitted by the parties. The Court of Appeals has the power to affirm, modify, or set aside the decision, in whole or in part, or, if the need is determined, to order further proceedings by the Board. The decision of the Court of Appeals is subject to review by the US Supreme Court on writ of certiorari.

Section 716 of the Aviation Investment and Reform Act for the 21st Century, Public Law 106-181 (April 5, 2000), expanded the NTSB jurisdiction to include reviews of FAA designations of safety enforcement actions as emergencies that require the order to be effective immediately, upon petition by the affected certificate holder. The Board has delegated this review authority to its administrative law judges. However, in the event of an appeal to the Board from a law judge's decision on the merits of the emergency or other immediately effective order, the Board may, at its discretion, note in its order disposing of the appeal its views on the law judge's ruling on the petition, and such views serve as binding precedent in all future cases. The Pilot's Bill of Rights provides for substantive independent and expedited review by the US District Court of any decision by the FAA Administrator to make such an order effective immediately.

Marine certificate actions are heard first by the USCG administrative law judges and may be appealed to the Commandant of the USCG. The ruling of the Commandant may then be appealed to the NTSB. The same appellate process is followed for marine certificate actions.

Accomplishments and Workload

Completed Work October 1, 2013–September 30, 2014

The Office of Administrative Law Judges accomplished the following:

- Met its goal of providing notices of hearings at least 30 days prior to the hearing; 188 notices were provided to appellants.
- Met its goal of conducting hearings and rendering decisions in emergency cases within 30 days of the filing of an appeal; the office processed 89 emergency appeals.
- Made rulings on 26 petitions challenging the FAA Determination that an Emergency Exists in Air Safety within the 5-day statutory timeframe.
- Closed a total of 216 cases and held 34 hearings.
- Processed 225 new appeals; and processed 25 appeals from decisions of NTSB administrative law judges to the full Board.

The NTSB issued 20 final decisions (opinions and orders) during FY 2014, sustaining 18, reversing one, modifying zero, and remanding one to the Office of Administrative Law Judges for further proceedings. The Board also issued 12 orders dismissing appeal. The total number of appeals disposed of at the full Board level was 32.

INFORMATION TECHNOLOGY AND SERVICES TAB

INFORMATION TECHNOLOGY AND SERVICES

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$6,659	25
FY 2016 Request	\$6,730	25
Increase/Decrease	\$71	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The Office of the Chief Information Officer (CIO) provides strategic direction and operational support for NTSB information systems, and develops and distributes programs and products for use by the agency and the public. The office is composed of four divisions and one program area, as described below.

Computer Services Division

The Computer Services Division provides computer, telephone, and network services for headquarters and regional offices, including Internet access, web services, e-mail, backup, continuity of operations infrastructure, and disaster recovery. The help desk staff performs a wide range of tasks, which include desktop/laptop setup, repair, and replacement; network connectivity; and software installation and upgrades.

Systems Support Division

The Systems Support Division develops, distributes, and maintains agencyspecific applications, provides web design and content management, and provides database administration services. Applications include accident data collection, storage, analysis, and dissemination for all modes, as well as management of systems for accident records, safety recommendations, correspondence, FOIA requests, and general administration.

Records Management Division

The Records Management Division maintains the archives of accident investigation files, NTSB reports, and other agency records. It is responsible for fulfilling public requests for information, including FOIA requests; providing training for the docket management system and guidance on redaction policies and techniques; and monitoring the privacy and confidentiality of data and information. This division also provides general records management, and develops and produces graphics for agency publications, websites, and presentations.

Enterprise Architecture Division

The Chief Enterprise Architect supports the NTSB mission and strategic goals by providing a blueprint—in logical or business terms as well as in technology terms—for how the organization operates today, plans to operate in the future, and intends to invest in technology. Enterprise architecture defines the business, processes and information necessary to operate the business, support technologies, and transitional processes required to implement new technologies in response to changing needs.

Information Technology Security Program

The Chief Information Security Officer protects the availability, confidentiality, and integrity of information technology (IT) resources through the application of requirements specified in Office of Management and Budget Circular A-130, the Federal Information Security Management Act, and various US Department of Commerce National Institute of Standards and Technology publications. The IT security program uses a risk-based, cost-effective approach to secure information and systems, identify and resolve current IT security weaknesses and risks, and protect against future vulnerabilities and threats.

Accomplishments and Workload

The FY 2014 accomplishments of the CIO include infrastructure upgrades, compliance improvements, enhancements to internal and external facing applications, and development and implementation of improved processes for managing the IT program.

The Computer Services Division, in partnership with the Chief Information Security Officer, continued to maintain and improve the overall IT security of the NTSB. Specific improvements included an NTSB-wide upgrade of laptops to improve performance and support the migration from Windows XP to Windows 7. In addition, the division completed phase 1 of the migration to a VOIP (voice over Internet protocol)-based phone system.

The Records Management Division continued a successful program of routine on-line posting of all newly published accident dockets. As of September 30, 2014, over 9,900 dockets were posted on the NTSB public website. On average, docket postings continue to grow at a rate of about 145 per month. In addition, this division continues to effectively manage the FOIA request workload and is in the process of moving its FOIAXpress to the cloud.

The Systems Support Division worked in partnership with AS and the Office of Research and Engineering to complete an upgrade to the accident data management system (ADMS), a key application in the accident investigation system. Staff also partnered with the Office of Administration to implement the staff entry and exit system (SEES) to automate the onboarding and exiting of NTSB and contract personnel.

The CIO continued to ensure NTSB compliance with the Federal Information Security Management Act by implementing new tools to support the continuous monitoring of network and computer assets, and to maintain certification and accreditation for the NTSB general, accident investigation, and laboratory support systems.

During FY 2014, the Enterprise Architecture Division led an effort to migrate the NTSB docket management system to a new technical platform, and has begun a series of projects to include the upgrade of the correspondence control, notation, and safety recommendations system (CNS) and the implementation of a system to handle appeals of airmen and mariners to the NTSB administrative law judges. This division is also partnering with the Records Management Division to move FOIAXpress to a cloud-based solution.

Administration Tab

ADMINISTRATION

	<u>(\$000s)</u>	<u>FTEs</u>
FY 2015 Estimate	\$8,368	33
FY 2016 Request	\$8,460	33
Increase/Decrease	\$92	0

Overview of Request

This program line request includes increases for the annualized pay raise, non-pay inflation, and a prorated share of rent adjustments. No other program changes are planned.

Program Description

The Office of Administration coordinates and manages infrastructure and support activities for the NTSB. This office provides support in the areas of human resource management, labor relations, facilities management, safety, security, acquisition, and lease management. Physical inventory, shipping and receiving, and management of the NTSB conference center are also major functions. The office's work is carried out by four divisions: Administrative Operations and Security, Acquisition and Lease Management, Human Resources, and Safety.

Accomplishments and Workload

During FYs 2013 and 2014, the Office of Administration worked with the General Services Administration (GSA); the headquarters building landlord, JBG Companies; and a contracted construction firm, Rand Construction, on a sevenphase renovation of the headquarters offices and conference center facilities. By March 2014, all agency activities had successfully moved into their new office space.

The Office of Administration maintains the agreement with the GSA to meet the requirements of Homeland Security Presidential Directive 12, which requires all agencies to implement the government-wide standard for a secure and reliable form of identification for federal employees and contractors. All employees and contractors who were on board since the implementation have received their personal identity verification credential. New staff is processed to receive the credential in compliance with mandated safety/security program requirements. The NTSB upgraded its physical access control system in conjunction with the renovation.

The Acquisition and Lease Management Division manages the NTSB acquisition program and provides best value business solutions. The division is a full-service acquisition organization that awards and administers contracts and agreements; manages the purchase card program; awards and manages real property leases for both NTSB headquarters and regional offices; and provides essential acquisition guidance and training. During FY 2014, the division executed over 375 contract actions to support the mission of the agency, 40 of which were for the Office of Research and Engineering's capital upgrade plan. The Acquisition and Lease Management Division supported the high-visibility Asiana Airlines Flight 214 accident investigation by procuring interpretation and translation services for the Board Meeting and hearing.

The Safety Division leads the NTSB safety committee and safety council in continually improving the NTSB safety program. The division implemented a new occupational safety and health program manual that integrates the Safety Management System.

In FY 2014, the Human Resources Division continued efforts to streamline recruitment by conducting strategic workforce planning to identify hiring priorities. With an automated recruitment system and an effective marketing strategy, the NTSB filled 43 high-priority positions by September 30, 2014.

In keeping with the Office of Personnel Management (OPM) initiative to provide a clear path to federal employment for students and recent graduates, the NTSB entered into a memorandum of understanding with the OPM to establish a pathways program. The Human Resources Division recruited to fill 17 intern positions for the summer period. These interns attended formal orientation and federal employment familiarization workshops on occupations, employment procedures, gender diversity, and agency mission and program initiatives – which complemented their hands-on experience with investigators and staff specialists.

The NTSB has continued its efforts to improve support for, and training of, supervisors in building, developing, and retaining staff. With the strategic recruitment effort, tools were developed to provide quick reference information for hiring managers. An onboarding checklist was developed to guide hiring managers through the first 90 days of employment for a new employee and to provide a quick reference instruction guide for the automated recruitment system.

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The Human Resources Division has supported the NTSB's efforts to retain highly skilled individuals by enabling offices to advertise and fill developmental details that benefit both the organization and the detailee. Similarly, in AS and RPH, the NTSB has sought detailees from outside organizations to enhance the resources available for mission-critical work.

As in past years, employees at all levels of the organization were encouraged to participate in the annual OPM employee viewpoint survey. Over the past 5 years, the NTSB response rate has consistently exceeded 60 percent, which is significantly higher than the government-wide response rate. The Human Resources Division supported the Office of the Managing Director in facilitating listening sessions with employees, supervisors, and managers to further discuss agency challenges and identify ways to enhance employee engagement and satisfaction.

MOST WANTED LIST TAB

MOST WANTED LIST

Top 10 critical changes needed to reduce transportation accidents and save lives.

The NTSB issued its first MWL in October 1990 to highlight specific recommendations that could significantly reduce transportation accidents, deaths, and injuries. The current MWL highlights up to 10 general safety issues that are supported by safety recommendations. We believe that this broader approach of focusing on issue areas rather than individual recommendations provides greater opportunity to effect change. See <u>http://www.ntsb.gov/safety/mwl/Pages/default.aspx</u> for more information on the current MWL issue areas.

Listed below are the top 10 MWL issue areas that the NTSB is currently highlighting through its advocacy efforts:

1. DISCONNECT FROM DEADLY DISTRACTIONS

Since 2003, the NTSB has found distraction from portable electronic devices (PEDs) as a cause or contributing factor in 11 accident investigations. Those crashes resulted in 50 people killed and 259 people injured. The first step toward removing deadly distractions is to disconnect from nonmission-critical information—a challenge in all modes of transportation.

2. END SUBSTANCE IMPAIRMENT IN TRANSPORTATION

Complex machinery—such as cars, planes, trains, ships, and pipelines requires operators to be at their best, not impaired by alcohol or drugs. Drivers, transportation operators, and enforcement authorities also need good information to make informed decisions about the use of illicit drugs and over-the-counter medications. To prevent accidents, save lives, and reduce injuries, we need stronger laws, swifter enforcement, and expanded use of technology to end substance impairment.

3. <u>ENHANCE PUBLIC HELICOPTER SAFETY</u>

Every day, hundreds of state and local helicopter pilots fly emergency medical service, law enforcement support, and search and rescue missions. The NTSB has investigated 129 accidents involving state and local public helicopter operations. These accidents can be reduced by developing and implementing safety management systems, scenario-based training, fatigue management, helicopter technology, and crash-resistant flight recorder systems for all aircraft.

4. <u>Implement Positive Train Control in 2015</u>

In 1969, the NTSB first recommended a forerunner to positive train control (PTC), a technology that can stop rail accidents before they happen. Since that time, we have seen deaths and injuries in accidents that PTC would have prevented. In 2008, Congress mandated that railroads implement PTC by the end of 2015. The time to make railroads safer is now.

5. <u>Improve Rail Tank Car Safety</u>

America's rails transport increasing amounts of crude oil and ethanol. But accidents demonstrate that the tank cars moving these flammable liquids are not up to the task. It is crucial to strengthen existing rail tank cars and rail tank car regulatory requirements.

6. MAKE MASS TRANSIT SAFER

Every day, millions of people take some form of mass transit to or from shopping, work, classes, or other destinations. Mass transit comprises light rail, commuter rail, subways, ferries, streetcars, buses, and trolley buses. Although each system has unique equipment, operating environments, and challenges, all can benefit from strengthening their organizational safety cultures and deploying advanced technologies.

7. <u>Prevent Loss of Control in General Aviation</u>

Although airline accidents have become rare in the United States, pilots of nonairline flights and their passengers still die by the hundreds in general aviation (GA) accidents every year due to pilot loss of control. These accidents can be reduced through ongoing pilot education, flight currency, self-assessment, and vigilant situational awareness in the cockpit.

8. <u>Require Medical Fitness for Duty</u>

The NTSB has investigated numerous accidents in which it found that the medical condition of the vehicle operator contributed to the cause of the crash. Medical conditions and treatments directly affect safety when they impair the performance of transportation professionals. Those operators suffering from impairing medical disorders should not be at the controls unless they receive medical treatment that mitigates the risk to the public.

9. <u>STRENGTHEN COMMERCIAL TRUCKING SAFETY</u>

Commercial trucking is integral to our economy, but crashes, deaths, and injuries involving commercial trucks have increased over the past several years. The NTSB has a long history of calling on regulators to improve their oversight of operators, drivers, and vehicles. To manage safety risks, trucking companies must go beyond securing regulatory compliance from their employees, and proactively identify operational hazards and potential solutions.

10. <u>Strengthen Procedural Compliance</u>

The NTSB has investigated more than a dozen airline or commercial charter accidents involving procedural, training, or compliance issues. Pilots are trained in safety procedures. They can prevent such tragedies by complying with procedures on every flight, every day. Strengthening procedural compliance requires collaborative efforts by crews, operators, and the regulator. Working together, they can develop effective procedures and training, and ensure that crews do what they are trained to do.

STATUS OF SAFETY RECOMMENDATIONS TAB

Status of Safety Recommendations

Recommendations Closed

The chart below lists the number of NTSB recommendations closed acceptably from the beginning of FY 2014 through September 30, 2014, by mode of transportation.



New Recommendations Issued

The following chart displays the number of new recommendations issued by the NTSB from the beginning of FY 2014 through September 30, 2014, by mode of transportation.

Mode	Federal	State	Industry or Association	Total
Aviation	73	0	23	96
Highway	16	5	11	32
Marine	7	0	6	13
Railroad	19	6	14	39
Pipeline	1	0	3	4
Intermodal	0	2	0	2
Total	116	13	57	186

Open Recommendations

The chart below depicts the distribution of the 999 open safety recommendations by transportation mode as of September 30, 2014.


APPENDIX OF HISTORICAL INFORMATION TAB

APPENDIX OF HISTORICAL INFORMATION

NTSB Salaries and Expenses Funding History (in millions)

FY	Amount	
2000*	56.8	
2001*	62.8	
2002*	67.9	
2003*	72.0	
2004*	73.1	
2005*	76.1	
2006*	75.9	
2007	79.3	
2008	84.4	
2009	91.0	
2010	98.0	
2011*	97.8	
2012	102.4	
2013*	97.0	
2014	103.0	
* Includes across-the-		
board rescissions.		

Current Board Members

Name	Board Title	Appointment	Term Expiration		
Christopher A. Hart	Vice Chairman*	August 12, 2009	October 20, 2015		
Robert L. Sumwalt	Member	August 21, 2006	December 31, 2016		
Mark R. Rosekind	Member	June 22, 2010	December 31, 2014		
Earl F. Weener	Member	June 22, 2010	December 31, 2015		
* Serving as Acting Chairman since April 26, 2014.					

Emergency Fund Activity

FY	Appropriations (Rescissions)	Obligation Activity	Balance	Purpose/Source
2004			1,503,399	Balance forward
2004		(138,000)	1,641,399	Adjustment of FY 2002 obligations
2004	358,601		2,000,000	Appropriation (P.L. 108-199)
2004	(2,116)		1,997,884	Rescission (P.L. 108-199)
2005			1,997,884	No activity
2006			1,997,884	No activity
2007			1,997,884	No activity
2008			1,997,884	No activity
2009			1,997,884	No activity
2010			1,997,884	No activity
2011			1,997,884	No activity
2012			1,997,884	No activity
2013			1,997,884	No activity
2014			1,997,884	No activity

Training Center

Costs and Revenues

	FY 2012	FY 2013	FY 2014
Earned revenue	1,086,145	1,064,798	1,074,447
Subleases	919,493	584,434	577,525
Total revenue	2,005,638	1,649,232	1,651,972
Costs			
Pay	741,352	757,523	751,481
Travel	41,353	51,082	63,927
Contracts	477,138	442,081	137,729
Supplies	37,835	34,536	37,656
Equipment	144,595	11,388	27,616
Total	1,442,273	1,296,610	1,018,409
Less space rental	2,652,666	2,659,370	2,659,875
Net operating costs	4,094,939	3,955,980	3,678,284
Overall deficit	2,089,301	2,306,748	2,026,312

FTE Staffing

FY 2000-FY 2014

FY	FTE
2000	427
2001	416
2002	426
2003	427
2004	421
2005	417
2006	387
2007	377
2008	388
2009	393
2010	384
2011	403
2012	412
2013	412
2014	402

FTE Staffing at Year-End by

Headquarters and Field Offices

FY	Headquarters	Regional	Total
2005	308	109	417
2006	286	101	387
2007	292	85	377
2008	286	102	388
2009	293	100	393
2010	304	102	406
2010	283	101	384
2011	296	107	403
2012	304	108	412
2013	307	105	412
2014	299	103	402

FTE Staffing by State and Region*

FY 2014

Location	Administrative Law Judges	Aviation Safety	Highway Safety	Information Technology Services	Marine Safety	Office of Administration	Office of Communications	Policy & Direction	Rail, Pipeline & Hazardous Materials Safety	Research & Engineering	Training Center	Total
Alaska		3										3
Colorado	1	9	2									12
Illinois		9		1					2			12
Indiana									1			1
Oklahoma		1										1
Texas	1	6	6									13
Wisconsin		1										1
Connecticut								1				1
Delaware			1									1
Florida		4			1		1			0		6
Georgia		3		1								4
Massachusetts			1									1
New Jersey		1										1
New York		1										1
North Carolina		2										2
Virginia		11		1		1		1			4	18
Washington, DC	7	54	15	22	15	32	24	59	25	46		299
Arizona		2										2
California		8	1						3			12
Hawaii		2										2
Montana		1										1
Oregon		1										1
Washington		7										7
Grand Total	9	126	26	25	16	33	25	61	31	46	4	402

*<u>Regions</u>: Alaska Central

Eastern

Western

International Investigation Costs*

FY 2014

Description	Location	Costs
Malaysian Airlines flight MH370, Boeing 777-200, 9M-MRO, disappeared en route from Kuala Lumpur to Beijing, China	Kuala Lumpur, Malaysia	435,065
National Air Cargo B747-400, N949CA, crashed shortly after takeoff from Bagram Air Base	Bagram AFB, Afghanistan	175,802
Tatarstan Airlines flight 363, Boeing B737-500, VQ-BBN, crashed while attempting to land	Kazan, Russia	84,098
Air Algérie flight 5017, crashed under undetermined circumstances	Gossi, Mali	52,462
Nippon Airways Boeing 787-8, JA804A, emergency descent and diverted to Takamatsu Airport due to cockpit odor and battery overheat indication	Takamatsu, Japan	47,199
Malaysian Airlines flight MH17, Boeing 777-200, crashed over eastern Ukraine	Hrabove, Ukraine	41,642
Assisted Canadian TSB investigation of train derailment, explosion, and fire	Lac Megantic, Quebec, Canada	38,145
Learjet 25 crashed under unknown circumstances	Monterrey, Mexico	35,527
Japan Airlines main battery cell vented while on ground during routine maintenance	Tokyo, Japan	35,368
Boeing 234 helicopter, N241CH, crashed shortly after departing Pucallpa Airport	Pucallpa, Peru	33,803
Ethiopian Airlines Boeing 787, parked and unoccupied, experienced ground fire in crown	London, United Kingdom	33,041
Bearskin Airlines flight JV-311, Swearingen SA227, collided with ground during approach	Red Lake, Canada	30,980
Robinson R44 helicopter, VH-HWQ, collided with terrain during landing approach	Bulli Tops, Australia	28,800
Delta Airlines, Boeing 767-300ER, lost directional control during emergency landing	Madrid, Spain	27,800
Embraer EMB-145 experienced runway excursion	Shanghai, China	26,671
Cessna 560XL, PR-AFA, crashed into residential area while on approach to Santos Airport	Santos, Brazil	26,346
Asiana Airlines flight OZ-991, Boeing 747-400, HL-7604, experienced main deck cargo fire	Jeju Island, Republic of Korea	21,652

Description	Location	Costs		
Aerocon Swearingen SA-227AC Metro III, flight A4-25, CP-2754, crashed during landing	Riberalta, Bolivia	19,067		
Martinair MD-11 cargo plane, PH-MCU, experienced uncontained engine failure	Tenerife, Spain	17,577		
Bell 214ST helicopter crash; accepted delegation of accident investigation from Afghan Civil Aviation Authority in January 2012	Camp Bastion, Afghanistan	16,336		
Robinson R66 helicopter, PR-MXM, crashed	Rio de Janeiro, Brazil	15,026		
MV Costa Concordia, ran aground and capsized	Giglio Island off Tuscany, Italy	14,517		
Corendon Airlines flight 7H-773, Boeing 737-8KN, TC- TJK, experienced cockpit fire following pushback	Antalya, Turkey	11,103		
ATR72-500 turboprop airplane, experienced high vibration in flight	Makassar, Indonesia	9,699		
Airbus A330-223, aborted takeoff due to engine failure	Melbourne, Australia	9,132		
British Aerospace HS 125 700A, XA-UKR, crashed	Saltillo, Mexico	8,436		
Canadian National Railway train derailed with hazardous materials release and fire; crude oil, liquefied petroleum gas, and hydrochloric acid	Plaster Rock, Canada	7,478		
Piper PA-32-300 airplane, rapidly descended and crashed in residential area	Macas, Ecuador	6,913		
Omni Air International, Boeing 767-300, N768NA, tail struck on landing	Kabul, Afghanistan	6,132		
Mozambique Airlines flight TM470, Embraer ERJ-190, C9-EMC, departed from controlled flight and collided with high-speed impact	Rundu, Namibia	5,952		
Air Contractors flight QY-1748, Boeing 737-476 freighter, EI-STD, left main gear failed during landing roll	East Midlands Airport, United Kingdom	5,451		
Korean Boeing 777-300ER, GE90 transfer gearbox failure in-flight; accepted delegation from Korean Aviation and Railway Accident Investigation Board	Anadyr, Russia	5,372		
Delta Airlines flight DL-101, Boeing 763, N191DN, experienced turbulence and damage to slats	Buenos Ares, Argentina	5,253		
Air Tractor AT-502, HL-5105, crashed	Seosan, Republic of Korea	5,039		
Safe Skies for Africa Program	South Africa, Kenya, Tanzania, and Uganda	139,367		
Grand Total		\$1,482,251		
* Investigative costs greater than \$5,000 through September 30, 2014, including payroll as well as travel and other direct costs.				

Costs of International Accident Investigations by Fiscal Year*

FY	Costs		
2001	230,000		
2002	224,000		
2003	112,000		
2004	130,208		
2005 (a)	619,073		
2006	154,821		
2007	215,178		
2008 (b)	466,124		
2009 (c)	317,552		
2010 (d)	540,511		
2011 (e)	559,974		
2012 (f)	1,641,132		
2013 (g)	2,366,274		
2014 (h)	1,482,251		
* Effective with FY 2012, total			
includes payroll costs.			

- (a) Includes reimbursed costs of \$132,550 for the helicopter crash investigation in Sudan (Mi-172), which includes personnel compensation costs. This amount was reimbursed by the US Department of State.
- (b) Includes \$46,061 billed to the DOT under the SSA program.
- (c) Includes \$120,257 billed to the DOT under the SSA program.
- (d) Includes \$137,523 billed to the DOT under the SSA program.
- (e) Includes \$169,238 billed to the DOT under the SSA program.
- (f) Includes \$149,707 billed to the DOT under the SSA program.
- (g) Includes \$42,727 billed to the DOT under the SSA program.
- (h) Includes \$139,367 billed to the DOT under the SSA program.

Mode	Description	2011	2012	2013(a)
Highway:	Passenger cars	12,014	12,271	11,977
	Light trucks and vans	9,302	9,396	9,155
	Pedestrians	4,457	4,743	4,735
	Motorcycles	4,630	4,957	4,668
	Pedalcycles (b)	682	726	743
	Medium and heavy trucks	640	697	691
	Buses	55	39	48
	Other (c)	699	732	702
	Total, Highway	32,479	33,561	32,719
Grade Crossi	i ngs: (d)	(250)	(233)	(231)
Rail:	Intercity (e)			
	Trespassers and nontrespassers (f)	497	509	520
	Employees and contractors	24	19	20
	Passengers	6	5	6
	Transit (g)			
	Light, heavy, and commuter rail	230	270	345
	Total, Rail	757	803	891
Marine:	Recreational boating	758	651	560
	Cargo transport	10	9	13
	Commercial fishing (h)	27	33	24
	Commercial passengers	8	13	18
	Total, Marine	803	706	615
Aviation:	General aviation	448	432	387
	Airlines	0	0	9
	Air taxi	41	15	27
	Commuter	0	0	6
	Foreign/unregistered (i)	9	2	14
	Total, Aviation	498	449	443

US Transportation Fatalities, 2010–2013

Mode	Description	2011	2012	2013(a)
Pipeline:	Gas	13	9	9
	Liquids	1	3	1
	Total, Pipeline	14	12	10
	Total	34,551	35,531	34,678

- (a) Numbers for 2013 are preliminary estimates. Aviation data are from the NTSB; marine data are from the US Department of Homeland Security; all other data are from the DOT.
- (b) Includes bicycles or other cycles.
- (c) Includes vehicle nonoccupants other than pedestrians and occupant fatalities in other vehicle types, such as farm or construction equipment.
- (d) Grade crossing fatalities are not counted as a separate category for determining the grand total because they are included in the highway and rail categories, as appropriate.
- (e) As reported to the FRA, DOT.
- (f) Includes persons on railroad property without permission (trespassers) and with permission, such as repair personnel (nontrespassers). Does not include motor vehicle occupants killed at grade crossings.
- (g) As reported to the Federal Transit Administration, DOT. Fatalities for commuter rail operations may also be reported to the FRA and may be included in intercity railroad fatalities.
- (h) Refers to operational fatalities.
- (i) Includes non-US-registered aircraft involved in accidents in the United States.

Status of Action by State for Motor Vehicle Safety Recommendations

State	Child Passenger Safety	Primary Seat Belt Enforcement	Passenger Restriction (a)	Cell Phone (b)	Ignition Interlock	Motorcycle Helmets
Alabama	Partial	Partial	Yes	Partial	Yes	Partial
Alaska	Yes	Yes	Yes	Partial	Yes	
Arizona	Yes		Partial	Partial	Yes	
Arkansas	Partial	Partial	Yes	Partial	Yes	
California	Yes	Yes	Yes	Partial		Yes
Colorado	Yes		Yes	Partial	Yes	
Connecticut	Partial	Partial	Yes	Partial	Yes	
Delaware	Yes	Yes	Yes	Partial	Yes	
District of Columbia	Yes	Yes	Yes	Partial		Partial
Florida		Partial		Partial		
Georgia	Yes	Partial	Yes	Partial		Yes
Hawaii	Yes	Yes	Partial	Partial	Yes	
Idaho	Partial		Partial	Partial		
Illinois	Yes	Yes	Yes	Partial	Yes	
Indiana	Yes	Yes	Yes	Partial		
Iowa	Partial	Partial		Partial		
Kansas	Yes	Yes	Partial	Partial	Yes	
Kentucky	Partial	Yes	Yes	Partial		
Louisiana	Partial	Yes	Partial	Partial	Yes	Yes
Maine	Yes	Yes	Yes	Partial	Yes	
Maryland	Yes	Yes	Partial	Partial		Partial
Massachusetts	Yes		Partial	Partial		Yes
Michigan	Yes	Partial	Yes	Partial		
Minnesota	Yes	Yes	Yes	Partial		
Mississippi	Partial	Partial		Partial	Yes	Partial
Missouri	Yes		Partial	Partial	Yes	Yes
Montana	Partial		Partial			
Nebraska	Partial		Partial	Partial	Yes	Yes
Nevada	Partial		Partial	Partial		Partial
New Hampshire	Partial		Yes	Partial	Yes	
New Jersey	Yes	Yes	Yes	Partial		Yes
New Mexico	Partial	Yes	Yes	Partial	Yes	
New York	Yes	Partial	Yes	Partial	Yes	Yes
North Carolina	Yes	Yes	Yes	Partial		Yes
North Dakota	Partial			Partial		
Ohio	Yes		Yes	Partial		

State	Child Passenger Safety	Primary Seat Belt Enforcement	Passenger Restriction (a)	Cell Phone (b)	Ignition Interlock	Motorcycle Helmets
Oklahoma	Partial	Partial	Yes	Partial		
Oregon	Yes	Yes	Yes	Partial	Yes	Yes
Pennsylvania	Yes		Partial	Partial		
Rhode Island	Yes	Yes	Yes	Partial		
South Carolina	Partial	Yes	Partial	Partial		
South Dakota				Partial		
Tennessee	Yes	Partial	Yes	Partial	Yes	Yes
Texas	Yes	Yes	Yes	Partial		
Utah	Yes		Yes	Partial	Yes	
Vermont	Yes		Yes	Partial	Yes	Yes
Virginia	Yes		Yes	Partial	Yes	Partial
Washington	Yes	Yes	Yes	Partial	Yes	Yes
West Virginia	Yes	Partial	Yes	Partial	Yes	Partial
Wisconsin	Yes	Yes	Yes	Partial		
Wyoming	Yes		Partial	Partial		
Total	Yes = 32 +	Yes = 21 +	Yes = 31 + DC Partial = 14	Yes = 0		Yes = 13
	DC	DC		Partial =	Yes = 25	Partial = 6
	Partial = 16	Partial = 12		49 + DC		+ DC

(a) "Restriction" refers to drivers in the intermediate (also referred to as provisional or second) stage. Unless accompanied by a supervising driver who is at least 21 years old, these drivers are limited to no more than one passenger under age 20, family excepted, until they receive an unrestricted license or for at least 6 months.

(b) "Partial" with respect to cell phone laws means that the state has a law restricting some use of portable electronic devices, including texting bans, handheld device bans, or bans affecting certain driving populations.





National Transportation Safety Board