

8. AVIATION ACCIDENT INVESTIGATION COSTS

8.1 INTRODUCTION

All costs borne (or costs avoided) by all parties expected to result from proposed changes to FAA investments, regulations, and airport grants should be considered in the conduct of benefit-cost analyses of these proposed activities. Avoided accidents are one of the principal safety benefits of FAA investment and regulatory programs. (It is assumed that these resources would be put to alternative uses if an accident could be avoided.) These are valued, in part, by using avoided injury and property damage costs.¹ However, there are other costs to society imposed by aviation accidents. One such cost is the expense of investigating aviation accidents. Investigations involve the expenditure of resources by several entities, including the National Transportation Safety Board (NTSB), the FAA and the private sector. FAA has increasingly focused its resources on accident prevention.

This analysis estimates costs incurred by governmental entities for accident investigation and provides approximations for costs incurred by the private sector. It should be noted that no U.S. passenger airline accidents that resulted in multiple fatalities occurred during the time period examined (FY2015-FY2023) in the research for this update for the majority of cost components. Since these types of accidents typically result in the highest accident investigation costs (based on past publications of Economic Values), the accident investigation cost estimates presented in this publication may be understated for the types of accidents that did not occur during the analysis period.

While the following data represents the most comprehensive estimates associated with the costs of a federal accident investigation, depending on the scope of a particular analysis, alternative estimates may be applicable.

8.2 DEVELOPMENT OF FEDERAL ACCIDENT INVESTIGATION COST ESTIMATES

The NTSB is responsible for the investigation of all civil aircraft (and certain public aircraft) accidents in the U.S. Aircraft accidents are defined as an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

The NTSB is normally a party to investigations involving U.S.-manufactured aircraft conducted by aviation authorities in foreign countries. U.S. private entities can ask to be a party to a U.S. or foreign accident if they have an interest (e.g., aircraft, engine, and parts companies) in the investigation. In addition, if there is not a qualified aviation authority in the country in

¹ These are covered in Sections 1 to 5 of *Economic Values for FAA Investment and Regulatory Decisions, A Guide* https://www.faa.gov/regulations_policies/policy_guidance/benefit_cost/media/econ-value-toc.pdf

which the accident occurred, a civil aviation authority from another country can be assigned to lead the investigation.

In the current work, GRA tabulated costs for FAA and NTSB separately. The NTSB has legal responsibility for investigating all civil aircraft accidents in the U.S. The FAA participates in most NTSB investigations and may have personnel travel to accident scenes for which the NTSB does not. FAA's investigations are conducted by the FAA Office of Accident Investigation (AVP) or by a Flight Standards District Office (FSDO), with support from other FAA organizations as appropriate. FAA-AVP also assigns one of its investigators to accident investigations led by the NTSB.

8.2.1 NTSB Accident Investigation Cost Estimates

NTSB cost estimates were derived from its cost accounting system by NTSB staff. Based on NTSB staff discussions and coordination with NTSB's chief financial officer, the following methodology was used to calculate NTSB investigation costs:

1. NTSB used completed investigations for accidents and incidents that occurred during FY2015-FY2021 as the baseline for estimates. The time period was selected to have the most uniform direct cost calculations because it includes completed investigations and includes complete cost accounting data through FY2023.
2. The resulting list of investigations was divided into categories:
 - a. **Major** – typically includes a full investigative team with multiple specialist groups led by a chairman, and may include a Board Member on-scene, and where a full Board adopted report is produced. (cases identifiable by “MA” in the NTSB ID)
 - b. **Foreign** – a foreign case for which NTSB assigned an Accredited Representative and NTSB staff traveled in support of the investigation. These are typically equivalent to major accident investigations, led by a foreign authority. (cases identifiable by “RA” in the NTSB ID or “WA” with subsequent investigator travel)
 - c. **Part 135** – All NTSB investigations of accidents involving Part 135 operations.
 - d. **General Aviation, Field** – Accidents, typically fatal, involving operations other than Part 121, 129, or 135 air carrier operations and for which the NTSB investigator(s) responded to the scene. (cases identifiable by “FA” in the NTSB ID and launch type = “Yes”, “Full”, or “Partial”)
 - e. **General Aviation, Limited** – Accidents involving operations other than Part 121, 129, or 135 air carrier operations and for which the NTSB investigator(s) did not travel to the scene but may have done subsequent investigation for wreckage or equipment exams. (cases identifiable by “LA” in the NTSB ID and launch type = “None” or Null)
 - f. **Personal Recreation** – Accidents involving operations other than Part 121, 129, or 135 air carrier operations for which the purpose of flight was flying for personal reasons, excluding business transportation. This category includes accidents that are also categorized by investigation type (General Aviation Field, General Aviation Limited, and Data Collection).

- g. **Data Collection** – Non-fatal accidents involving operations other than Part 121, 129, or 135 air carrier operations and for which the NTSB investigator(s) did not travel to the scene and data were primarily collected from the accident pilot. (cases identifiable by “CA” in the NTSB ID or “LA” with Class 4 investigations)
 - h. **Unmanned Aerial System (UAS)** – All domestic accident investigations involving a UAS
 - i. **Incident** – All domestic incident investigations with a public report, including Part 121, 129, or 135 air carrier, GA, and UAS operations. Operators of civil aircraft must notify the NTSB of serious incidents (as defined by 49 CFR 830.5), which include occurrences such as flight control system malfunction or failure, damage to property estimated to exceed \$25,000 to repair, and air carrier runway incursions at public-use airports. The NTSB does not release public reports for all incidents; it focuses on incidents with greater safety impacts, including the use of new technologies.
3. For Major, Foreign, Part 135, and UAS accidents and all Incidents, the costs were averaged across all investigations with available data.
 4. Due to the large number of general aviation investigations, the average costs were calculated from a random sample from each group. Sample sizes were selected to achieve an estimated 95% confidence level.

Table 8-1 summarizes the NTSB investigation cost estimates. NTSB only provided direct costs and did not provide an indirect cost factor. However, 75.3% would be a reasonable estimate for indirect costs based on FAA overhead costs and this was used to develop final cost estimates for NTSB. NTSB provided nominal costs, which were adjusted for inflation by assuming that 2018 was the average nominal value and using Bureau of Labor Statistics (BLS) wage data² to adjust the average direct cost including estimated overhead to 2023 dollars.

It is worth noting that in using these economic values, the average investigation cost for incidents in Table 8-1 should only be applied to types of incidents that would be investigated by NTSB (as described above). The vast majority of incidents are investigated by FAA without significant NTSB participation and would incur the investigation costs summarized in the FAA Accident and Incident Investigation Costs section of this document.

² BLS, National Industry-Specific Occupational Employment and Wage Estimates for NAICS 999100 - Federal Executive Branch (Occupation Code 00-0000)

Table 8-1: NTSB Accident and Incident Investigation Costs by Investigation Category (FY2015-FY2021)

Category	Population Count*	Sample Size**	Sample %	Average Direct Cost for Sample (nominal)	Average Direct Cost Including Estimated Overhead (nominal)***	Average Direct Cost Including Estimated Overhead*** (\$2023)
Major	24	24	100%	\$636,825	\$1,116,036	\$1,339,801
Foreign	55	55	100%	\$70,596	\$123,719	\$148,525
Part 135	288	270	94%	\$43,668	\$76,528	\$91,872
GA field	1,057	282	27%	\$22,465	\$39,370	\$47,264
GA limited	2,146	326	15%	\$5,605	\$9,823	\$11,792
Personal recreation	5,567	360	6%	\$5,795	\$10,156	\$12,192
Data collection	3,718	349	9%	\$1,584	\$2,776	\$3,333
UAS	4	4	100%	\$1,946	\$3,410	\$4,094
Incident	96	96	100%	\$47,938	\$84,011	\$100,856

* A small number of events (four Foreign, six UAS, and six Incident investigations) had no cost data so they were excluded from the population count.

** Due to the large number of general aviation investigations, the average costs were calculated from a random sample of each group. Sample sizes were selected to achieve at least a 95% confidence interval.

*** NTSB overhead rates are not available, so for comparison purposes with FAA costs GRA adjusted NTSB direct costs using the same 75.3% overhead rate as for FSDO labor.

Source: Memorandum regarding accident investigations from NTSB, February 7, 2024

8.3 FAA ACCIDENT AND INCIDENT INVESTIGATION COSTS

In addition to participating in NTSB investigation of aircraft accidents and incidents, as described in Section 8.2, FAA also investigates other aircraft incidents that might not be investigated by NTSB. Incidents are defined as an occurrence, other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations. This section describes FAA’s cost of investigating both accidents and incidents.

FAA’s financial systems could not provide a direct estimate of accident and incident investigation costs because some cost categories could not be reliably isolated in FAA’s Cost Accounting System (CAS). Accident investigations are lumped into a general category of investigations which includes not only accidents but also includes other investigations, including but not limited to: accidents, incidents, violations, occurrences, and flight assists. As such, GRA worked with FAA to prepare an updated estimate using several data sources based on discussions with the Office of Accident Investigation and Prevention’s Accident Investigation Division (AVP-100). AVP-100 is the FAA office that serves as the FAA’s primary point of contact for interaction with the NTSB with regard to investigative policies and activities. The key sources of data that were used included the following:

1. CAS for AVP-100 non-labor costs for FY 2021 – FY 2023
 - a. FY2021 and FY2022 costs adjusted to 2023 dollars using BLS wage data³
2. FAA directory for the number of AVP-100 employees
3. Accident and incident investigation hours recorded on FAA Form 8020-23 for FY 2021 to FY 2023 (these were tabulated by GRA using data from the FAA’s Accident Incident Data System). These hours were converted to costs (in 2023 dollars) based on assumptions about the pay levels of FAA Safety Inspectors and adjusted for estimated time off and locality pay.
4. Estimates from the Office of the Chief Counsel (AGC) for travel expenses and percentage of salary costs related to AGC support of accident investigations for FY2022 to FY2024 (based on best available data)
 - a. FY2022 and FY2024 costs adjusted to 2023 dollars using BLS wage data
5. Estimates from the Office of Aviation Safety (AVS) of the annual cost and volume of “go kits” containing personal protective equipment that FSDO and Aircraft Certification Service (AIR) inspectors use when launching to accident sites
6. Estimates from the Office of Aerospace Medicine (AAM) of the labor and non-labor costs associated with toxicology testing and autopsies for certain accidents for FY2021 to FY2023
 - a. FY2021 and FY2022 costs adjusted to 2023 dollars using BLS wage data
7. Estimates from the Air Traffic Organization (ATO) Office of Safety and Technical Training (AJI) of labor and travel costs associated with supporting NTSB and FAA safety investigations for FY2023 to FY2025 (based on best available data)
 - a. FY2024 and FY2025 costs adjusted to 2023 dollars using BLS wage data

For the previous edition of Economic Values, GRA reviewed Program Tracking and Reporting Subsystem (PTRS) data, but an FAA expert for PTRS reported that this system records the number of activities but not the hours involved. For the previous edition of Economic Values, GRA also interviewed four FSDOs of different sizes (Anchorage, Spokane, Orlando, and South Florida) to assess how well the Form 8020-23 hours reflected the accident investigation level of effort. The FSDO’s interviews reported the following:

1. Form 8020-23 provides primary data on the level of effort involved in GA accident and incident investigations.
2. Aviation safety inspectors generally spend from 1% to 5% of their work time on accident investigation.
3. Form 8020-23 data include the Federal Aviation Regulation (FAR) Part the aviation activity was conducted under, which allows distribution of investigation hours to FAR parts. Investigation costs are not reported by FAR Part because of small sample sizes.
4. The amount of time recorded on Form 8020-23 reflects the time spent on the investigation itself. Inspectors may spend some time after the investigation to complete information on activities related to the accident, but this is not believed to be a significant amount of time.

⁷ BLS, National Industry-Specific Occupational Employment and Wage Estimates for NAICS 999100 - Federal Executive Branch (Occupation Code 00-0000)

The investigation labor hours data recorded on Form 8020-23 are primary data that provides the best basis for an estimate of accident investigation costs for investigations conducted by AVP and the FAA Office of General Aviation Safety Assurance. The analysis assumes that the time spent by AVP acting as the FAA party to inspections conducted by NTSB or others is reflected in the costs of operating AVP. Most Part 121 investigation costs come from the AVP budget and some costs in other organizations. While AVP also provides some support for FAA-led accident investigations, the majority of its staff time and cost are for supporting investigations where AVP provides a representative to the NTSB team leading the investigation.

Most FAA investigations of general aviation accidents are handled by aviation safety inspectors in FSDOs. For relatively simple accidents/incidents the FSDO may conduct a desk review. On-site investigations are conducted for more serious accidents or accidents that may lead to an agency action.

The numbers of accidents and incidents by aircraft damage category and highest injury category, along with corresponding investigator hours, are shown in Table 8-2. Over the three-year period, there were 3,563 accidents classified by highest injury category and 3,583 accidents classified by aircraft damage level. There also were 3,264 incidents when classified by highest injury category and 3,359 incidents when classified by aircraft damage. The numbers are different when reporting highest injury category and by aircraft damage because of the way in which FAA collects and records accident data.

Table 8-2: Numbers of Accidents and Incidents and Investigator Hours (FY2021-FY2023)

Highest Injury Category	Count of Events		Investigator Hours		Average Investigator Hours per Event		Fully Loaded Investigator Cost per Event (\$2023)	
	Accidents	Incidents	Accidents	Incidents	Accidents	Incidents	Accidents	Incidents
None or minor	2,539	3,218	47,919	45,502	18.9	14.1	\$2,323	\$1,740
Serious	405	10	8,526	81	21.1	8.1	\$2,591	\$997
Fatal	619	36	25,797	616	41.7	17.1	\$5,129	\$2,106
All Events	3,563	3,264	82,242	46,199	23.1	14.2	\$2,841	\$1,742

Aircraft Damage Category	Count		Investigator Hours		Average Investigator Hours per Event		Fully Loaded Investigator Cost per Event (\$2023)	
	Accidents	Incidents	Accidents	Incidents	Accidents	Incidents	Accidents	Incidents
None	39	526	830	7,042	21.3	13.4	\$2,619	\$1,648
Minor	82	2,715	1,666	38,238	20.3	14.1	\$2,500	\$1,733
Substantial	2,645	97	54,039	1,393	20.4	14.4	\$2,514	\$1,767
Destroyed	817	21	29,712	299	36.4	14.2	\$4,476	\$1,752
All Events	3,583	3,359	86,246	46,972	24.1	14.0	\$2,962	\$1,721

Note that FAA accident categorizations are based on the highest injury level reported on the 8020-23. In some instances, fatal events may not have met the criteria to be classified as an accident, or a fatality was updated after indication of an incident. As a result, some fatal events are classified as incidents.

Figure 8-1 shows the approach used to expand investigator hours and other inputs into the estimated total costs of FAA labor and non-labor expenditures for accident and incident investigations.

Figure 8-1: Converting Labor Hours and Other Inputs to Full Costs of Accident and Incident Investigation

FY2021-FY2023*



- 1. FSDO labor**
 - a. Labor hours reported by FSDO
 - b. Labor hours valued at 2023 annual salary for Grade 13, Step 10 (\$109,908)
 - c. Labor value adjusted by 2023 locality adjustment for each FSDO
 - d. Labor value converted to hourly pay by dividing by 2,080 hours
 - e. Hourly labor value converted to fully burdened rate
 - Leave 20.0%
 - FAA agency-wide staff office costs 8.0%
 - LOB support office costs 11.0%
 - Fringe benefits 36.3%
- 2. AVP-100 labor**
 - a. Feb. 2025 FAA email directory: 12 employees of AVP-100, assumed fully-loaded annual salary of \$180,000 per employee based on 2024 interview with AVP
 - b. Adjusted to 2023 dollars using BLS wage data
 - c. Allocated to events using number of FSDO labor hours
- 3. AVP non-labor**
 - a. Total FAA non-labor accident investigation cost from CAS for AVP-100
 - b. Allocated to events using number of FSDO labor hours
 - c. Adjusted to 2023 dollars using BLS wage data
- 4. AGC labor and non-labor**
 - a. Estimated salaries based on 10% of Aviation Litigation Division's salary costs for FY2022-24
 - b. Labor value converted to fully burdened rate (same assumptions as FSDO)
 - c. Travel costs based on actual travel for accident investigations in FY2022-24, per AGC data
 - d. Adjusted to 2023 dollars using BLS wage data
 - e. Both labor and non-labor allocated to accidents with serious/fatal injuries or substantial/destroyed aircraft, in proportion to shares of FSDO labor hours for those events as proxy for complexity of investigation, based on AGC guidance that AGC becomes involved in cases with damage or injury and where NTSB is interviewing FAA personnel
- 5. AVS "Go Kits"**
 - a. Estimated cost per kit of \$400-\$600 provided by AVS
 - b. AVS estimated that approximately 25% of the kit is used/replaced each year
 - c. AVS reported that all FSDO inspectors, 5-7 AIR National Go Team members, and each AIR region have kits
 - d. Estimated number of FY2023 FSDO inspectors based on FY2024 Aviation Safety Workforce Plan
 - e. Allocated to events using number of FSDO labor hours

6. AAM toxicology labor and non-labor

- a. Average supply cost and full-time equivalent employees (FTEs) per case provided by AAM-611
- b. Non-labor costs adjusted to 2023 dollars using BLS wage data
- c. FTEs valued at midpoint of 2025 H-band for Oklahoma City (rest of U.S. locality), adjusted to 2023 based on General Schedule increases 2023-2025
- d. Labor value converted to fully burdened rate (same assumptions as FSDO)
- e. Average annual labor and non-labor cost per case applied to all fatal accidents
- f. Pro-rated average annual cost per case applied to non-fatal accidents based on estimated share of non-fatal accidents with AAM-611 involvement
- g. Costs allocated to aircraft damage categories based on shares of each category that are fatal or non-fatal

7. AAM autopsy labor and non-labor

- a. Supply costs, software costs, FTEs, and number of accidents with AAM-612 involvement provided by AAM-612
- b. Non-labor costs adjusted to 2023 dollars using BLS wage data
- c. FTEs valued at midpoint of 2025 H-band for Oklahoma City (rest of U.S. locality), adjusted to 2023 based on General Schedule increases 2023-2025
- d. Labor value converted to fully burdened rate (same assumptions as FSDO)
- e. Labor and non-labor costs divided by number of cases with AAM-612 involvement
- f. Average annual cost per case applied to fatal accidents only
- g. Costs allocated to aircraft damage categories based on shares of each category that are fatal or non-fatal

8. ATO Labor and Travel

- a. Data provided by AJI from Enterprise Data Repository for labor and travel costs associated with ATO support of NTSB investigations and ATO Emergency Response Team investigations in FY2023-FY2025
- b. Costs adjusted to 2023 dollars using BLS wage data for 2024 and average federal pay increase in 2025 per Executive Order (as 2025 BLS data are not available at time of publication)
- c. Costs divided across all accidents and incidents in FY2021-FY2023
 - i. ATO deployed to a total of 89 events in FY2023-FY2025, but based on an AJI SME interview those events range from fatal accidents to events that don't even rise to the level of an incident
 - ii. Given the lack of detail in how ATO deployments match to Flight Standards-reported accidents/incidents, this report spreads ATO costs evenly across all accidents/incidents (recognizing that ATO costs may be very high for a handful of events and \$0 for the majority of events)

*AVP-100 labor costs based on Feb. 2025 staff; AGC based on FY2022-FY2024; ATO based on FY2023-FY2025

The factors and process from Figure 8-1 were used to convert the accident hours data and other inputs to total FAA accident investigation cost estimates. As can be seen in Table 8-3, accidents with one or more fatalities had an average FAA investigation cost of \$23,802 while accidents where the aircraft was destroyed had an average cost of \$16,077. The average FAA investigation cost for incidents was approximately \$3,400.

Table 8-3: Total FAA Investigation Costs for Accidents and Incidents by Highest Injury and Damage Categories (\$2023)

Highest Injury Category	Accidents	Incidents
None or minor	\$4,166	\$3,190
Serious	\$4,723	\$2,118
Fatal	\$23,802	\$19,037
All Events	\$7,641	\$3,452

Aircraft Damage Category	Accidents	Incidents
None	\$6,114	\$3,999
Minor	\$5,492	\$3,244
Substantial	\$5,279	\$3,953
Destroyed	\$16,077	\$3,308
All Events	\$7,755	\$3,383

The estimated costs of each of the components of the FAA accident investigation costs are summarized in Table 8-4 for accidents and Table 8-5 for incidents. Based on the data provided by FAA offices, FSDO labor is the largest component of FAA investigation costs for nonfatal accidents and accidents where the aircraft is not destroyed. In accidents with a fatality or a destroyed aircraft, toxicology testing is the largest cost component. FSDO labor is the largest cost component for all incident categories with the exception of fatal incidents (which, as noted earlier, are rare and often due to updates after the initial classification), where toxicology testing is the largest cost component.

Table 8-4: Components of FAA Accident Investigation Costs (\$2023)

Highest Injury Category	FSDO Labor	AVP Labor	AVP Non-Labor	AGC	Go Kits	Toxicology	Autopsy	ATO	Total
None or minor	\$2,323	\$892	\$97	\$0	\$216	\$91	\$0	\$547	\$4,166
Serious	\$2,591	\$995	\$108	\$149	\$241	\$91	\$0	\$547	\$4,723
Fatal	\$5,129	\$1,970	\$214	\$296	\$477	\$13,451	\$1,719	\$547	\$23,802
All Accidents	\$2,841	\$1,091	\$118	\$68	\$264	\$2,412	\$299	\$547	\$7,641

Aircraft Damage Category	FSDO Labor	AVP Labor	AVP Non-Labor	AGC	Go Kits	Toxicology	Autopsy	ATO	Total
None	\$2,619	\$970	\$105	\$0	\$235	\$1,462	\$176	\$547	\$6,114
Minor	\$2,500	\$926	\$100	\$0	\$224	\$1,069	\$126	\$547	\$5,492
Substantial	\$2,514	\$931	\$101	\$59	\$225	\$809	\$92	\$547	\$5,279
Destroyed	\$4,476	\$1,658	\$180	\$106	\$401	\$7,728	\$983	\$547	\$16,077
All Accidents	\$2,962	\$1,097	\$119	\$68	\$265	\$2,399	\$297	\$547	\$7,755

Table 8-5: Components of FAA Incident Investigation Costs (\$2023)

Highest Injury Category	FSDO Labor	AVP Labor	AVP Non-Labor	AGC	Go Kits	Toxicology	Autopsy	ATO	Total
None or minor	\$1,740	\$669	\$73	\$0	\$162	\$0	\$0	\$547	\$3,190
Serious	\$997	\$383	\$42	\$57	\$93	\$0	\$0	\$547	\$2,118
Fatal	\$2,106	\$809	\$88	\$121	\$196	\$13,451	\$1,719	\$547	\$19,037
All Incidents	\$1,742	\$669	\$73	\$2	\$162	\$239	\$19	\$547	\$3,452

Aircraft Damage Category	FSDO Labor	AVP Labor	AVP Non-Labor	AGC	Go Kits	Toxicology	Autopsy	ATO	Total
None	\$1,648	\$610	\$66	\$0	\$148	\$879	\$101	\$547	\$3,999
Minor	\$1,733	\$642	\$70	\$0	\$155	\$96	\$1	\$547	\$3,244
Substantial	\$1,767	\$655	\$71	\$42	\$158	\$642	\$71	\$547	\$3,953
Destroyed	\$1,752	\$649	\$70	\$41	\$157	\$91	\$0	\$547	\$3,308
All Incidents	\$1,721	\$637	\$69	\$1	\$154	\$235	\$18	\$547	\$3,383

8.4 APPROXIMATION OF PRIVATE SECTOR ACCIDENT INVESTIGATION COSTS

There are no direct estimates of private sector accident investigation costs. As such, this analysis adopts the ratio of the number of private parties on an accident investigation sub-team to the number of the NTSB sub-teams used in a previous publication of *Economic Values for FAA Investment and Regulatory Decisions, A Guide*. These costs can vary greatly depending on the severity and location of the accident. The NTSB go team conducts an investigation by forming as many as twelve investigative sub-teams. Each sub-team, led by an NTSB investigator, is responsible for a particular subject matter area such as powerplants, airframes, avionics, control systems, operations, human factors, weather, survivability, and air traffic control. Most sub-team members, known as “parties,” are from private industry and are invited to participate in the investigation by the NTSB. The party system allows the NTSB to leverage its resources and personnel by bringing to the investigation the technical expertise of the companies and entities (labor representatives, airlines, manufacturers, suppliers of components and sub-components, etc.) that were involved in the accident or that might have specialized knowledge to assist the investigation.

This procedure results in significant investigation costs being incurred by the private sector. No systematic measures are available for this cost. However, an approximation may be made based on NTSB’s costs. Discussions with NTSB and examination of NTSB accident reports suggested that about six private sector parties participate in major accident investigations and three private sector parties in regular field investigations.⁴ Assuming that each of the private sector parties supports half of the investigative sub-teams at the same level of cost as incurred by NTSB for each sub-team, private costs may be approximated as three times NTSB costs for major and foreign investigations and 1.5 times NTSB costs for Part 135, GA field, and incident

⁴ See: ECONOMIC VALUES FOR FAA INVESTMENT AND REGULATORY DECISIONS, A GUIDE Prepared by GRA Incorporated Under Contract No. DTFA 01-02-C00200.

investigations. In addition, the private sector typically pays to remove aircraft wreckage. Aviation insurance industry sources placed this cost at about \$233,735 per major accident.⁵

Applying these assumptions and values yields the approximation of private sector cost and total costs presented in Table 8-6. They range from an average of \$70,895 for a GA field investigation to \$4.0 million for a major investigation.

Table 8-6: Private Sector Accident Investigation Costs

Category	NTSB Average Direct Cost Including Estimated Overhead** (\$2023)	Private Sector Multiplier	Private Sector Accident Investigation Cost (\$2023)	Private Sector Aircraft Wreckage Removal Cost (\$2023)
Major	\$1,339,801	3.0	\$4,019,404	\$233,735
Foreign	\$148,525	3.0	\$445,576	\$233,735
Part 135	\$91,872	1.5	\$137,808	\$233,735
GA field	\$47,264	1.5	\$70,895	\$233,735
GA limited	\$11,792	-	\$0	-
Personal recreation	\$12,192	-	\$0	-
Data collection	\$3,333	-	\$0	-
UAS	\$4,094	-	\$0	-
Incident	\$100,856	1.5	\$151,283	-

Commented [DW1]: Revert to old table 8-4 if we don't keep the new tables

Commented [DW2]: Revert to Table 8-4 if we don't keep the new tables

8.5 TOTAL PUBLIC AND PRIVATE SECTOR ACCIDENT INVESTIGATION COSTS

Although FAA and NTSB categorizations of accident investigations differ, reasonable assumptions can be made to estimate total public and private sector accident investigation costs. The NTSB categories are used for the basic structure and the most similar FAA categories are matched to the NTSB categories. Table 8-7 shows total public and private sector accident investigation costs. Note that the Incident category only includes costs of NTSB incident investigations that resulted in a public report (as described in Section 8.2.1) while FAA investigation costs for all types of incidents are included.

Commented [DW3]: Revert to old table numbering 8-5 if we don't keep the new tables

⁵ 2002 cost estimate of \$138,000 inflated to 2023 dollars using CPI-U. Clearly, there are major exceptions to this cost, such as the costs of recovering, moving and storing the pieces of the TWA 800 wreckage.

Table 8-7: Total Public and Private Sector Costs per Investigation

Commented [DW4]: Revert to table 8-5 if we don't keep the new tables

Category	FAA Labor and Non-Labor Accident Investigation Cost (\$2023)	NTSB Average Direct Cost Including Estimated Overhead (\$2023)	Private Sector Accident Investigation Cost (\$2023)	Private Sector Aircraft Wreckage Removal Cost (\$2023)	Total Public and Private Sector Accident Investigation Cost (\$2023)
Major	\$23,802 ¹	\$1,339,801	\$4,019,404	\$233,735	\$5,616,743
Foreign	\$23,802 ¹	\$148,525	\$445,576	\$233,735	\$851,638
Part 135	\$23,802 ¹	\$91,872	\$137,808	\$233,735	\$487,217
GA field	\$23,802 ¹	\$47,264	\$70,895	\$233,735	\$375,696
GA limited	\$4,723 ²	\$11,792	\$0	\$0	\$16,515
Personal recreation	\$4,723 ²	\$12,192	\$0	\$0	\$16,915
Data collection	\$4,166 ³	\$3,333	\$0	\$0	\$7,499
UAS	\$3,383 ⁴	\$4,094	\$0	\$0	\$7,477
Incident	\$3,383 ⁴	\$100,856	\$151,283	\$0	\$255,522

¹ Average FAA investigation cost per fatal injury accident

² Average FAA investigation cost per serious injury accident

³ Average FAA investigation cost per none or minor injury accident

⁴ Average FAA investigation cost per incident (for incidents with aircraft damage category reported)