

# *Accident Investigation Guide*

*2005 Edition*



*Chuck Whitlock*  
*Principal Investigator*

*Jerry Taylor Wolf*  
*Project Leader*

*USDA Forest Service*  
*Technology & Development Program*  
*Missoula, MT*

*7E72H46—Accident Investigation Guide*

*May 2005*

---

The Forest Service, United States Department of Agriculture (USDA), has developed this information for the guidance of its employees, its contractors, and its cooperating Federal and State agencies, and is not responsible for the interpretation or use of this information by anyone except its own employees. The use of trade, firm, or corporation names in this document is for the information and convenience of the reader, and does not constitute an endorsement by the Department of any product or service to the exclusion of others that may be suitable.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

# Acknowledgments

---

Project leader Jerry Taylor Wolf wishes to thank the following people for their contributions to this project:

**Ann Baker**, safety manager  
Northern Region

**George Jackson**, special assistant  
Washington Office, Fire and Aviation

**Dick Mangan**, fire program leader (retired)  
Missoula Technology and Development Center

**Dick King**, director  
Washington Office, Office of Safety and Occupational Health

**Gary Hoshide**, safety and health and recreation program leader  
Missoula Technology and Development Center

**Bill Bulger**, aviation safety manager (retired)  
Pacific Northwest Region

**Barb Hall**, aviation safety specialist  
Washington Office

**Greg Nichols**, assistant director (retired)  
Washington Office, Office of Law Enforcement and Investigations

**Ann Melle**, assistant director  
Washington Office, Office of Law Enforcement and Investigations

**Sara Lustgraaf**, visual information specialist  
Missoula Technology and Development Center

Thanks to everyone who reviewed the draft and provided information for the final document.

# Contents

---

<b>Chapter 1 – Accident Investigation</b>	<b>1</b>
1.1 Introduction	2
1.2 Authority	2
1.3 Purpose	2
1.4 Scope	2
1.5 Investigation Team Selection	3
1.6 Composition of the Investigation Team	3
1.7 Investigation Sequence	6
1.8 Investigation Briefings and Report	7
1.9 Report Use	8
<b>Chapter 2 – Investigation Overview</b>	<b>33</b>
2.1 Introduction	34
2.2 Accident Sequence	34
2.3 Human Factors Accident and Incident Analysis	34
2.4 Equipment Factors Analysis	35
2.5 Environmental Factors Analysis	35
<b>Chapter 3 – Witness Statements and Interviews</b>	<b>43</b>
3.1 General	44
3.2 Statements	44
3.3 Interviews	44
3.4 Conducting the Interview	44
3.5 Types of Questions	45
3.6 Sample Witness Interview Questions	45
<b>Chapter 4 – Physical and Photographic Evidence</b>	<b>51</b>
4.1 Physical Evidence—General	52
4.2 Physical Evidence Preservation and Collection	52
4.3 Types of Physical Evidence	52
4.4 Photographic Evidence—General	52
4.5 Photographic Documentation	53
<b>Chapter 5 – Guidelines for Establishing Findings, Identifying Causal Factors and Contributing Factors, and Developing Recommendations</b>	<b>57</b>
5.1 Establishing Findings	58
5.2 Identifying Causal Factors	58
5.3 Identifying Contributing Factors	59
5.4 Developing Recommendations	59
<b>Chapter 6 – The Investigation Report: Factual and Management Evaluation Sections</b>	<b>61</b>
6.1 General	62
6.2 Distribution of the Report	63
<b>Chapter 7 – Accident Review Board</b>	<b>67</b>
7.1 Purpose	68
7.2 Composition of the Accident Review Board	68
7.3 Duties and Responsibilities	68
7.4 Convening the Accident Review Board	68
7.5 Final Approval of the Accident Prevention Action Plan and Distribution of the Report	69
7.6 Disposition of the Report and the Case File	69
7.7 Release of the Accident Investigation Report and Documents	70
7.8 Briefings, Press Releases, Family Meetings	70

---

<b>Chapter 8 – Wildland Fire Shelter Entrapments, Deployments, and Fatalities</b>	<b>75</b>
8.1 General	76
8.2 Scope and Purpose	76
8.3 Wildland Fire Shelter Entrapments, Deployments, and Fatalities Protocol	76
<b>Chapter 9 – Aviation Investigations</b>	<b>83</b>
9.1 Introduction	84
9.2 Scope and Purpose	84
9.3 National Transportation Safety Board Investigations	84
9.4 Forest Service Investigations	84
9.5 Composition of the Investigation Team	85
9.6 Forest Service Accident Investigation Report	85
9.7 Aviation Investigation Sequence	85
<b>Glossary and Abbreviations Used in Investigations</b>	<b>103</b>