
Guide 2

ACCIDENT INVESTIGATION



To complement the Emergency Film Group's
Accident Investigation video

Written By
Ludwig Benner, Jr.

Edited By
Cynthia Brakhage
Associate Editor
Fire Protection Publications

Published By
Fire Protection Publications
Oklahoma State University



TABLE OF CONTENTS

PREFACE	vi
INTRODUCTION	1
1 GENERAL PREPARATIONS FOR INVESTIGATIONS	3
Investigator Preparations	3
Recognize What An Accident Or Incident Is	4
Know Your Objectives	4
Know Your Limitations	6
Recognize Others' Interests	7
Know Your Investigation Procedures	8
Prepare the Equipment You Need	9
Know Work Product Quality Assurance Procedures	9
Know Sources For Help During Investigation	9
Know Contents Of This Guide	11
Know What To Do If A Crime Is Suspected	11
2 KNOWLEDGE FOR INVESTIGATIONS	13
Knowledge Of Accidents	13
Nature Of An Accident	13
Investigation Process Knowledge	17
How Investigators Should Investigate	18
Investigation Observations	19
Formatting And Organizing Data	20
Applying Logical Reasoning	22
Mental Movies	24
Analyzing Your Events	24
Determining Completeness Of Your Description	25
Using Visualization Aids For Documentation	26
Off-Site Data Gathering	28
Completing Investigations	30
Objects As Data Sources	31
Stressors And Stressees	32
The Six Ps	33
Testing Objects To Get Data	34
People Data Sources	35
How People Record Data	35
Witness Categories	35
Why People Data Can Change	36
Planning Interviews	36
Preparing For A Specific Interview	36
Documenting Your Interviews	37

"Creating" Events To Fill Gaps	37
Hypothesizing Events To Fill Gaps	38
Special Investigation Considerations	38
3 SPECIAL INVESTIGATION TASKS	41
Pre-Incident Investigation Tasks	41
On-Site Investigation Tasks	42
Interview Official In Charge	42
Identify Owners	43
Site Control	43
Data Gathering Tasks	45
Set Up Events Data Handling Materials	46
Start Looking For Events	46
Do Site Walk-Around	46
Identify Relevant People And Objects Involved	46
Document Ending Conditions At Site	47
Acquire Events	48
Apply General Human Decision Model To Guide Data Search	49
Identify Energy Barriers	49
Document Beginning Condition Of Changed Objects	50
Organize Event Information	53
Get Remaining Data	53
Get Data From People	57
Preparing Deliverables	60
Prepare Description And Explanation Of What Happened	61
Safety Visualization Rules	61
Review Investigation Process	62
Summary	62
Vehicle Accidents	62
Equipment Failures	63
Job-Related Injury Or Fatality	63
4 SUMMARY OF ACCIDENT INVESTIGATOR'S TASKS	65
Verifying Plans Upon Notification Of A Specific Accident	65
Arriving At Site	65
Setting Data-Gathering Task Priorities	66
Walk-Around At Site	66
Getting Specific Events Data	67
Documenting Remaining Data And Events At Site	68

Appendix A	Photography Support For Accident Investigations	75
Appendix B	Medical Support For Investigations	77
Appendix C	General Human Decision Model	79
Appendix D	Energy Source Checklist	83
Appendix E	Investigation Data Organization	87
Appendix F	Quality Assurance For Incident Descriptions	89
Appendix G	Recommendation Development Process	91
Appendix H	Basic Object Testing Plan Elements	97
Appendix I	Examples of Object Testing Methods	101
Appendix J	Glossary of Investigation Terms	105
Appendix References		107