

INSTRUCTOR MANUAL

FOUR ACCIDENT INVESTIGATION GAMES

Simulations of the Accident Investigation Process

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FOUR ACCIDENT INVESTIGATION GAMES INSTRUCTOR MANUAL

INTRODUCTION

The 4 ACCIDENT INVESTIGATION GAMES introduce participants to an accident investigation technology called Events Analysis. Events Analysis deals with the study, analysis and understanding of something commonly called "events." The term "events" is widely used, and events are widely analyzed, but few publications provide guidance for instructional purposes or the conduct of rigorously disciplined investigation and analysis of events.

These Games focus on a special group of events called accidents, also called mishaps, abnormal occurrences and many other names. Accidents imply unintended and unexpected events. They are often investigated to determine what happened, and why they happened. These determinations are used for many purposes. An estimated 20 million accidents are investigated annually. Thousands of investigators are involved.

Although many procedural manuals and a few books exist to guide investigators, not much can be found in the literature about accident investigation theory and methods. In part, this is probably due to a widespread view that accident investigation is primarily a data gathering function. Most investigation manuals reflect investigation technology that emerged in the 1920's. In the absence of theoretically comprehensive and formalized investigation methodologies, most investigators use personal investigative procedures, synthesized from their own personal education, experience and observations. As a consequence, accident investigations are highly personalized, not very replicable, and often generate more controversy, delay, ill-will and waste than contribution to safety.

The 4 GAMES and this MANUAL are based on the view that properly conducted accident investigations should be more of a research activity than a data gathering function. The methods presented follow almost 15 years of development effort during which the entire accident investigation process was subject to intensive scrutiny. Many "successful" and "unsuccessful" investigations were studied. During the study, investigator's purposes, objectives, procedures, techniques, decision processes, quality criteria, investigative outputs were intensively examined, and their resultant effectiveness were closely analyzed. That work identified the methods presented here. These methods, when combined with previous methodological developments in the safety analysis field, represent the latest available thinking in accident investigation practices.

The Events Analysis methodology reflects a particular view of the "ACCIDENT" phenomenon. It views an accident as a PROCESS which transforms an ordinary normal activity producing desired results into an ACTIVITY producing an unintended harmful outcome. This transformation process involves people and things, and interactions among them.

This Manual and the Four Games provide a reference source for Events Analysis methods. In combination, they can provide a working grasp of Events Analysis methods as they are applied to AI. After doing the simulations, investigators should have the basic knowledge to conduct investigations and produce effective work products in most accidents they encounter. They can then enhance their skills through regular application of the methods in day to day situations.

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CONTENTS

Introduction to the INSTRUCTOR'S MANUAL and EVENTS ANALYSIS	1
Using this MANUAL	2
What is EVENTS ANALYSIS?	3
Game 1. CONFLICTING INTERESTS: PLAN FOR THEM	
Objectives	1-1
Classroom preparations	1-1
Preparatory assignment	1-1
Preparatory instruction	1-3
Playing the game	1-4
Game 2. THE WITNESS' WHOLE STORY	
Objectives	2-1
Classroom preparations	2-1
Preparatory assignment	2-2
Preparatory instruction	2-3
Playing the game	2-4
Game 3. DEVELOPING ACCIDENT "TEST PLANS"	
Objectives	3-1
Classroom preparations	3-1
Preparatory assignment	3-1
Preparatory instruction	3-2
Playing the game	3-3
Game 4. ORGANIZATION AND ANALYSIS OF ACCIDENT DATA	
Objectives	4-1
Classroom preparations	4-1
Preparatory assignment	4-3
Preparatory instruction	4-4
Playing the game	4-5
APPENDICES	
Instruction Aids	5-1
Readings	6-1
Events Analysis Guides 1, 2, 3	
Order blanks for additional publications	(Inside back cover)