



Consulting Engineers & Scientists, Inc.

THE EXPERT APPROACH TO PRODUCTS LIABILITY

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PRODUCTS LIABILITY

INTRODUCTION

This document was developed to aid in evaluating, planning, initiating, and monitoring products liability evaluations and investigations. Today, all attorneys are experiencing a more restrictive business climate. An early liability assessment helps the attorney determine the business risk or benefits when undertaking a new matter. Depending upon the circumstances of the case, certain items listed may not be applicable or justifiable.

PRODUCTS LIABILITY ACCIDENT TYPES

The complexity of life as we enter the twenty-first century has significantly increased as has the interaction between mechanical and electrical systems and the human being. Under such circumstances, the types of accidents and the products that are involved are infinite in number. A broad characterization of the types of products involved run the gamut from transportation devices, consumer products, industrial equipment, materials handling equipment, appliances, furniture, power and hand tools, heating/air conditioning and ventilation equipment, structural components, agricultural equipment, medical and dental equipment, recreational products and miscellaneous equipment of all types.

Most of the above products cause injury as a result of a component failure, a lack of adequate and proper guarding, or the omission of necessary cautions and warnings concerning the safe use of the product. As a result of the extensive variety of potential products, and the precise circumstances surrounding an accident, the permutations become overwhelming.

The complexity of the accidents that occur in modern life require a detailed analysis by trained and skillful experts to determine the nature and cause of the incident. To this end, the analysis must be conducted in a professional and thorough manner so as to reach conclusions that can be presented in a way which will lead to the ultimate resolution of the assignment of liability.

PRODUCTS LIABILITY ACCIDENT COMPONENTS

Regardless of the product involved, whether it be a consumer product, automobile, boat, industrial equipment, etc., it is necessary for the investigator to determine the conditions and circumstances under which the accident occurred. In general, the investigator will evaluate the equipment or product, the operating environment of the equipment or product, and the personnel who are involved. Sources of information consist of product literature and handbooks, accident reports, eyewitness statements, depositions, insurance reports, product drawings and blueprints, specifications, product safety bulletins, and personal interviews. This information provides a basic understanding of what happened, where it happened, when it happened, and provides the basis for the determination of why it happened and how it happened.

In the event the accident involves a consumer product or industrial machine, it is imperative that the actual device be examined so that the operational characteristics can be determined. These characteristics when combined with the circumstances surrounding the incident generally provide the framework for the determination of how the accident occurred. It is desirable that the equipment that was involved be operated by the investigator so that the operational characteristics are experienced and any deviation from normal operating characteristics can be determined and explored in an effort to evaluate how these deviations contributed to the accident.

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With a fundamental understanding of the circumstances and product characteristics, the investigation turns to the presence or absence of devices that are necessary to provide safe operation. In the case of industrial equipment, the investigation turns towards the presence or absence of interlocks, guards, operational controls, and finally the presence of warnings and cautions concerning the types of hazards the operator will be exposed to along with instructions on how to avoid these hazards.

In the case of a failed component, the investigation turns to a detailed analysis of the component to determine the mode of failure and perhaps extensive, destructive evaluation of the component to determine its properties and whether or not it complied to the design requirement. Deviations from the design requirements must then be evaluated to determine their significance and the effect of these deviations on the actual accident occurrence.

The successful investigation will take into account all the information gathered during the fact finding phase and gather them into a coherent theory of why the accident occurred. The successful determination of why the accident occurred leads to the determination of whether a defect in design, manufacturing or use occurred and will combine that information with what elements were concurrently available and technically and economically feasible at the time of design and manufacture of the product and how inclusion of such devices would have prevented the accident.

TYPICAL LIST OF COMPONENTS

- | | | |
|-----------------------------|----------------------------|----------------------|
| • Chairs | • Footwear | • Platforms |
| • Debris | • Fork lifts | • Railings |
| • Deterioration | • Glass in windows & doors | • Recreational rides |
| • Distractions | • Guards | • Scaffolds |
| • Door hardware | • Instructions | • Signs |
| • Doors & exits | • Ladders | • Warnings |
| • Explosions | • Laundry equipment | • Wheelchairs |
| • Fasteners, nails & screws | • Loading docks | • Windows |
| • Fences & gates | • Personal protective | • Workplace safety |

ACCIDENT INVESTIGATION

The degree of information available to the investigator varies from incident to incident. The circumstances surrounding an airline crash generally provide much data in a short period of time due to the involvement of numerous governmental agencies. Automobile accidents, similarly, have a high degree of documentation concerning the event and are often accompanied by on-site police photographs and measurements. Industrial accidents have some lesser degree of documentation, usually in the form of compensation carrier reports or OSHA investigations. One thing that should be clear from these types of accidents is that the scene is examined quickly, before evidence is moved, destroyed, or lost. Under ideal circumstances, the accident investigator can assess the scene prior to any movement of parts.

Obviously, the ideal situation does not exist. Components involved in the accident many times are moved in order to extract injured persons, eyewitness accounts are often conflicting, contradictory, and of dubious reliability. The psychological ravages of traumatic injuries often render the victim unable to recall the events that led up to the injury, and occasionally, the

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victim's accounts fly in the face of physical evidence that exists. The reconciliation of these diverse information sources into a coherent chronology and accident scenario requires patience and experience on the part of the investigator, if a reasonable determination of liability is to be formulated.

The evidence must be secured and preserved to provide for any meaningful investigation. Oftentimes, bystanders will pick up failed components and attempt to put the pieces back together, as if to reassemble a jigsaw puzzle. This is the worst thing that can possibly happen, in that the rubbing of fracture faces together invariably destroys important fracture characteristics necessary to determine the mode of failure and the origin of the failure. It is imperative that such failed components be preserved, not only from mechanical damage, but also from the corrosive effects of the normal environment if a meaningful analysis is to be successfully completed.

In the event injuries are incurred by the use of consumer products or industrial equipment, it is necessary that the investigation turn to those objects so that the operational characteristics and operational sequence and cycling can be determined. Additionally, factors that may bear on the operator/machine interface can be determined and the operation of all safety devices can be assessed.

DISCOVERY REQUESTS

A history of components involved in a products liability case can uncover factors that indicate the accident was not a one time or unique occurrence but, in fact, has previously occurred. An example would be a failed component on an automobile which necessitated a recall, or an airworthiness directive that involved a component on an aircraft. Additional sources of information are the FAA, Consumer Products Safety Commission, the NTSB, OSHA, the National Safety Council, and various regulatory reporting agencies.

Components:

- As-built drawings
- Change orders
- Codes, designed under
- References, relied on
- Revised drawings
- Shop drawings
- Specifications

Personnel:

- Accident history
- Age
- Attentiveness
- Clothing
- Health
- Prior physical conditions
- Statements

Maintenance Records:

- Alterations after construction
- Maintenance records
- Manuals
- Methods & techniques
- Purchase orders for products
- Records of repair
- Signs

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- Warnings

ENGINEERING ASSISTANCE FOR ACCIDENT INVESTIGATION

It is our experience that many times an attorney will initiate his own investigation and will, in the process of that investigation, gather technical documents, engineering reports, manufacturing plans, manuals, data sheets and engineering drawings. Generally, an attorney will need assistance in interpreting that technical information. The engineering expert provides that technical assistance, and is capable of performing many support tasks, including the following:

An attorney often encounters technical documents or engineering reports that provide information that is difficult to interpret. Sometimes, an attorney needs assistance interpreting technical information. The expert engineer can provide technical assistance to an attorney in performing tasks including the following:

- Arrange or code testing
- Code enforcement file review
- Code requirements, code changes & standards
- Complaint review
- Deposition notes
- Engineering & construction general practice criteria
- Evidence storage
- Examination of accident scene
- Exhibit preparation
- Governmental department file review
- Identify useful information
- Instruct attorney on technical issues
- Interface & coordinate to obtain the available information
- Interface with other consultants
- Interview witnesses
- Local & state requirements
- Photograph evidence
- Predict opposing liability arguments
- Prepare a report, if warranted
- Questions & technical wording for discovery requests
- Research publications
- Review technical documents
- Reviewing & obtaining records
- Reviewing drawings, contracts, & design documents
- Testify, if warranted
- Testing of accident conditions & evidence
- Translate engineering language into common terms
- Trial cross examination questions
- Trial monitoring
- Trial preparation

The information presented in this booklet is intended only to be used as a guide in assisting clients concerned with or involved in the legal process where litigation or potential litigation is an issue. The information is further intended to inform clients that Consulting Engineers & Scientists, Inc. has both the expertise and the capability to provide direction and guidance in the specific disciplines and areas presented in this booklet. It is important to note that the information also is general and is not intended to completely cover the specific nuances of a particular matter. If there are any questions concerning this information, please feel free to contact us.